



AGENDA

July 1, 2020

ROSEVILLE CITY COUNCIL

6:00 p.m.

Council Chambers
311 Vernon Street
Roseville, California
www.roseville.ca.us

To help minimize the spread of COVID-19, members of the public may not attend in person, but may view the meeting on Comcast channel 14, Consolidated Communications channel 73 and AT&T U-Verse. City Council meetings are also video streamed live and are available on the City's website and YouTube channel. Members of the public may offer public comment by the following means:

Dial in Phone Number: 916-774-5353
Email: publiccomment@roseville.ca.us

If you need a disability-related modification or accommodation to participate in this meeting, please contact Voice: 916-774-5200, TDD: 916-774-5220. Requests must be made as early as possible.

THE CITY OF ROSEVILLE WELCOMES YOUR PARTICIPATION

If an agenda item is open to public comment, such public comment shall be addressed to the chair of the meeting.

Public Comment - Speakers have three minutes under Public Comment to speak on issues that are not listed on the agenda and are within the City's jurisdiction. The Brown Act does not permit any action or discussion on items not listed on the agenda.

Consent Calendar - If applicable, the Consent Calendar consists of routine items that may be approved by one motion. Any person can remove an item from the Consent Calendar to be discussed separately.

Agenda Items - Speakers have five minutes to address items that are listed on the agenda.

Americans with Disabilities Act - Notify the City Clerk or Secretary at least 72 hours in advance if special assistance is required to participate in a meeting including the need of auxiliary aids or services.

Audio/Visual Presentations - If making a presentation regarding an agenda item, audio/visual materials must be submitted to the City Clerk or Secretary at least 72 hours in advance.

Security procedures are in place to attend Roseville City Council meetings. All attendees must successfully pass through a security metal detector. Any person with a prohibited item will not be allowed entry. Prohibited items include, but are not limited to: firearms (even with valid CCW), knives, pepper spray/mace, explosives of any kind/ any weapons and/or dangerous devices of any kind, illegal drugs and alcohol.

Roseville City Clerk 311 Vernon Street, Roseville, CA 916-774-5200 TDD 916-774-5220

1. **CALL TO ORDER**
2. **ROLL CALL**
3. **PLEDGE OF ALLEGIANCE**
4. **MEETING PROCEDURES**
5. **PRESENTATIONS**

5.1. City Response to COVID-19 Pandemic

CONTACT: Dominick Casey 916-774-5362 dcasey@roseville.ca.us

6. **PUBLIC COMMENTS**
7. **CONSENT CALENDAR**

BEGINNING OF CONSENT CALENDAR

Bids / Purchases / Services

7.1. Cresthaven Tennis Court Renovation Project - Approval of Plans and Specifications and Authorization to Call for Bids

Memo from Park Development Analyst Heather Buck and Parks, Recreation & Libraries Director Jill Geller recommending the City Council approve the plans and specifications for the Cresthaven Tennis Court Renovation project and authorize staff to call for bids. The existing tennis courts are located at the Jack Wallace Park at Cresthaven, a neighborhood park site located east of Vernon Street and south of Cirby Way. The project includes removal and replacement of the existing tennis court surfacing, new striping to include one tennis court and two pickleball courts, and new seating. The estimate for construction is \$210,000 and funding was provided through the Parks, Recreation & Libraries Capital Fund in the FY2019-20 budget. Maintenance of the existing neighborhood park is provided by the General Fund and will remain unchanged.

CC #: 0845

File #: 0704-01

CONTACT: Heather Buck 916-774-5254 hcbuck@roseville.ca.us

7.2. West Side Tanks and Pump Station Project - Approval of Plans and Specifications

Memo from Senior Engineer Janice Gainey and Environmental Utilities Director Richard Plecker recommending the City Council approve the construction plans and specifications for the Design-Assist Construction of the West Side Tanks and Pump Station project. Funding exists in the West Side Tank and Pump Station project. There are no fiscal impacts from this Council action.

CC #: 0861

File #: 0900-02

CONTACT: Janice Gainey 916-223-7860 jrgainey@roseville.ca.us

7.3. Audio Visual Services - Contract Purchase Agreement and Service Agreement Amendment

Memo from Administrative Technician Tisha Chinn and Public Works Director Jason Shykowski recommending the City Council adopt RESOLUTION NO. 20-273 APPROVING A CONTRACT PURCHASE AGREEMENT BETWEEN THE CITY OF ROSEVILLE AND BETTER PRESENTATION SYSTEMS, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE (3000292); and adopt RESOLUTION NO. 20-274 APPROVING AMENDMENT NO. 1 TO SERVICE AGREEMENT BETWEEN THE CITY OF ROSEVILLE AND BETTER PRESENTATIONS SYSTEMS, INC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE (S1909066). Staff recommends Council approve a service agreement amendment with Better Presentation Systems, Inc. to retroactively extend the term of the contract from January 20, 2020 to January 20, 2021 and to reflect recent changes in State law. This one-year extension will use the balance of an existing \$200,000 on-call agreement. Funding for work under this agreement comes from the requesting department upon identification of adequate funds in their respective budgets. Staff also requests Council approve a Contract Purchase Agreement to incorporate Exhibit B, Contract Provisions for Non-Federal Entity Contracts Under Federal Awards.

CC #: 0864

File #: 0203-06

CONTACT: Tisha Chinn 916-774-5702 tchinn@roseville.ca.us

7.4. Heating, Ventilation and Air Conditioning Maintenance Services - Service Agreement Amendment

Memo from Administrative Technician Tisha Chinn and Public Works Director Jason Shykowski recommending the City Council adopt RESOLUTION NO. 20-276 APPROVING AMENDMENT NO. 1 TO SERVICE AGREEMENT BETWEEN THE CITY OF ROSEVILLE AND ACCO ENGINEERED SYSTEMS, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE (S2008043). Staff is requesting approval of a service agreement amendment which adds COVID-19 language to the agreement for the purchase of upgraded air filters in all City facilities in March 2020. The COVID-19 language is included in the contract as Exhibit B contract provisions and will allow the City to request disaster assistance reimbursement for the filters. Funding already exists in the FY2019-20 Building Maintenance, Environmental Utilities, Electric,

and Parks Maintenance budgets, not to exceed \$350,000.

CC #: 0865

File #: 0203-04

CONTACT: Tisha Chinn 916-774-5702 tchinn@roseville.ca.us

7.5. Technology Equipment - Purchase Order Renewal

Memo from Electric Technology System Administrator Sage Armstrong and Electric Utility Director Michelle Bertolino recommending the City Council approve the renewal of an existing cooperative contract with Dell Marketing, L.P. for general technology equipment and supporting software. The total estimated cost for FY2020-21 is \$120,000, and funding is included in the Electric Operations Fund FY2020-21 budget.

CC #: 0862

File #: 0203-06

CONTACT: Sage Armstrong 916-774-5679 sarmstrong@roseville.ca.us

7.6. Technology Equipment - Purchase Order Renewal

Memo from Electric Technology System Administrator Sage Armstrong and Electric Utility Director Michelle Bertolino recommending the City Council adopt RESOLUTION NO. 20-272 APPROVING A PURCHASE ORDER RENEWAL FOR TECHNOLOGY EQUIPMENT. This item is a renewal of an existing cooperative contract with CDW Government, LLC. Staff requests authorization to continue utilizing the contract without further Council approvals until the contract expires or until City staff determines that continuing with the same vendor is not in the City's best interest. The total estimated cost for FY2020-21 is \$180,000, and funding is included in the Electric Operations Fund FY2020-21 budget. Total estimated costs for future years are \$100,000 for FY2021-22 and \$100,000 for FY2022-23. Future renewals will be contingent upon approval of the budget each year until the contract expires or until City staff determines that continuing with the same vendor is not in the City's best interest.

CC #: 0863

File #: 0203-06

CONTACT: Sage Armstrong 916-774-5679 sarmstrong@roseville.ca.us

Resolutions

7.7. ProofID Software Configuration and Support Services - Professional Services Agreement Amendment

Memo from Business Systems Analyst Pete McLemore and Chief Information Officer Hong Sae recommending the City Council adopt RESOLUTION NO. 20-265 APPROVING A FIRST AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND PEGRIGHT, INC. DBA PROOFID, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE. Staff recommends approval of a First Amendment to Professional Services Agreement with PEGRight, Inc. dba ProofID for 40 additional hours of support for a total of \$8,000 funded by the

Information Technology Operations Fund budget. These additional hours will provide critically needed support and help to increase staff knowledge to better support the product moving forward.

CC #: 0867

File #: 0800-05

CONTACT: Pete McLemore 916-774-5431 pmclemore@roseville.ca.us

7.8. Sierra Vista KT-2A - Final Map and Subdivision Agreement

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council adopt RESOLUTION NO. 20-266 APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND SIERRA VISTA COMMUNITIES, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE; and approve the Sierra Vista KT-2A final map. Staff has completed its review of the final map and found that it is in compliance with the approved tentative map. This map will create 70 residential lots, 2 Public Landscape Lots and 1 Designated Remainder lot for future development. The actions requested have no fiscal impact to the City's General Fund.

CC #: 0855

File #: 0400-04-12-1 & 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

7.9. Sierra Vista KT-3A - Final Map and Subdivision Agreement

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council adopt RESOLUTION NO. 20-267 APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND SIERRA VISTA COMMUNITIES, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE; and approve the Sierra Vista KT-3A final map. Staff has completed its review of the final map and found that it is in compliance with the approved tentative map. This map will create 110 residential lots and 3 public landscape lots. The actions requested have no fiscal impact to the City's General Fund.

CC #: 0856

File #: 0400-04-12-1 & 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

7.10. Sierra Vista KT-3B Final Map and Subdivision Agreement

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council adopt RESOLUTION NO. 20-268 APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND SIERRA VISTA COMMUNITIES, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE; and approve the Sierra Vista KT-3B final map. Staff has completed its review of the final map and found that it is in compliance with the approved tentative map. This

map will create 97 residential lots and 1 public landscape lot. The actions requested have no fiscal impact to the City's General Fund.

CC #: 0857

File #: 0400-04012-1 & 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

7.11. Sierra Vista Village KT-5A Final Map and Subdivision Agreement

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council adopt RESOLUTION NO. 20-270 APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND SIERRA VISTA COMMUNITIES, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE; and approve the Sierra Vista Village KT-5A final map. Staff has completed its review of the final map and found that it is in compliance with the approved tentative map. This map will create 69 residential lots and 1 public landscape lot. The actions requested have no fiscal impact to the City's General Fund.

CC #: 0859

File #: 0400-04-12-1 & 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

7.12. Sierra Vista Village JM-20 - Phase 3.1A Final Map and Subdivision Agreement

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council adopt RESOLUTION NO. 20-269 APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND JOHN MOURIER CONSTRUCTION, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE; and approve the Sierra Vista Village JM-20 - Phase 3.1A final map. Staff has completed its review of the final map and found that it is in compliance with the approved tentative map. This map will create 69 residential lots. The actions requested have no fiscal impact to the City's General Fund.

CC #: 0858

File #: 0400-04-12-1 & 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

7.13. Campus Oaks CO-04 Final Map and Subdivision Agreement

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council adopt RESOLUTION NO. 20-258 APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND BBC ROSEVILLE OAKS, LLC AND LENNAR HOMES OF CALIFORNIA, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE; and approve the Campus Oaks CO-04 final map. Engineering has completed its review of the final map and found that it is in compliance with the approved tentative map. This map will be creating 132 residential lots, 7 public landscape lots and 7 private common area lots. The actions requested

have no fiscal impact to the City's General Fund.

CC #: 0841

File #: 0400-04-18-1 & 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

7.14. Fiddymment Ranch - Phase 2 F-71 Off-Site Infrastructure Project - Notice of Completion

Memo from Construction Inspector Darin Crockett and Development Services Director Mike Isom recommending the City Council adopt RESOLUTION NO. 20-262 OF THE COUNCIL OF THE CITY OF ROSEVILLE ACCEPTING THE PUBLIC WORK KNOWN AS FIDDYMENT RANCH - PHASE 2 F-71 OFF-SITE INFRASTRUCTURE PROJECT, APPROVING THE "NOTICE OF COMPLETION", AND AUTHORIZING AND DIRECTING THE CITY ENGINEER TO EXECUTE SAID NOTICE ON BEHALF OF THE CITY OF ROSEVILLE, THEREFORE, AND ACCEPTING A PORTION OF THE DEDICATIONS OFFERED ON THE RECORDED MAP OF THE SUBDIVISION. The Engineering Division has made final inspection of the project and has found the civil improvement work complete in accordance with the improvement plans and City specifications. This action has no impact to the City's General Fund. Construction costs were paid by the developer.

CC #: 0847

File #: 0400-04-09-1

CONTACT: Darin Crockett 916-751-9196 dcrockett@roseville.ca.us

7.15. Federal Advocacy Services - Professional Services Agreement Amendment

Memo from Government Relations Administrator Mark Wolinski and Deputy City Manager Megan MacPherson recommending the City Council adopt RESOLUTION NO. 20-261 APPROVING A THIRD AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND THE FERGUSON GROUP, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE. Staff recommends Council approve an amendment to extend by one year a professional services agreement with The Ferguson Group, LLC to provide federal advocacy services for City departments other than the utility departments. There is no change to the total annual cost of \$87,635 for the professional services under this amendment. Funding for the professional services agreement is included in the City Council's FY2020-21 budget.

CC #: 0846

File #: 0114

CONTACT: Mark Wolinski 916-774-5179 mwolinski@roseville.ca.us

7.16. Roseville Energy Park Turbine Upgrade Project - Professional Services Agreement

Memo from Senior Power Plant Engineer Nathan Ribordy and Electric Utility Director Michelle Bertolino recommending the City Council adopt

RESOLUTION NO. 20-260 APPROVING A PROFESSIONAL SERVICES AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND DAYZEN, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE. This item is a professional service agreement with DayZen, LLC to assist in the amendment of the Roseville Energy Park's permit to operate. DayZen will prepare submittals, represent the Roseville Energy Park with outside agencies, provide consultation, and complete other support tasks as required. This professional service agreement will not exceed \$112,000. Funding is included in the Electric Department's Turbine and Heat Recovery Steam Generator Rehabilitation project budget.

CC #: 0844

File #: 0800-03

CONTACT: Nathan Ribordy 916-746-1673 nribordy@roseville.ca.us

7.17. Campus Oaks CO-4 Belle Maison - Affordable Purchase Housing Agreement

Memo from Housing Manager Trisha Isom and Economic Development Director Laura Matteoli recommending the City Council adopt RESOLUTION NO. 20-259 APPROVING AN AFFORDABLE PURCHASE HOUSING AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND LENNAR HOMES OF CALIFORNIA, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT AND ALL RELATED DOCUMENTS ON BEHALF OF THE CITY OF ROSEVILLE. This item requests approval of an Affordable Purchase Housing Agreement (APHA) with Lennar Homes, developers of Campus Oaks Master Plan CO-4 (aka Belle Maison), who is required to enter into an APHA with the City to implement the affordable housing obligations for the parcel. In accordance with the City's General Plan requirements, the developer will build fourteen (14) of the subdivision's one hundred thirty-two (132) homes as affordable purchase units available to middle income buyers. The subsidies for the program are funded by the developer and do not impact the General Fund.

CC #: 0842

File #: 0709-03-01

CONTACT: Trisha Isom 916-746-1239 tisom@roseville.ca.us

Reports / Requests

7.18. Northern California Water Association - Councilmember Membership and Board Participation

Memo from Assistant Environmental Utilities Director Sean Bigley and Environmental Utilities Director Richard Plecker recommending the City Council approve City Councilmember Pauline Roccucci to be the designated Roseville City Councilmember to serve on the Northern California Water Association (NCWA) as either a primary board member or an alternate board member. Roseville membership in NCWA is estimated to cost \$9,873 for 2020 and adjusts yearly based on total annual water diverted, which is budgeted in FY2020-21 in the Water Utility Administration budget funded through the Water Operations Fund which receives revenue from utility service sales.

CC #: 0852

File #: 0800-02

CONTACT: Sean Bigley 916-774-5513 sbigley@roseville.ca.us

7.19.Campus Oaks Town Center - Final Map

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council approve the Campus Oaks Town Center final map. Engineering has completed its review of the final map and found that it is in compliance with the approved tentative map. This map will be creating 9 commercial and 1 public right of way lots. The actions requested have no fiscal impact to the City's General Fund.

CC #: 0843

File #: 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

7.20.Fiddymment Ranch Phase 2 Village 11-A1-0001 - Final Map

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council approve the Fiddymment Ranch Phase 2, Village 11-A1-0001 final map. Engineering has completed its review of the final map and found that it is in compliance with the approved tentative map. This map will be creating 4 residential lots and 1 landscape lot. The actions requested have no fiscal impact to the City's General Fund.

CC #: 0848

File #: 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

7.21.Fiddymment Ranch Phase 2 Village 11-A3-0001 - Final Map

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council approve the Fiddymment Ranch Phase 2, Village 11-A3-0001 final map. Engineering has completed its review of the final map and found that it is in compliance with the approved tentative map. This map will be creating 29 residential lots and 2 landscape lot. The actions requested have no fiscal impact to the City's General Fund.

CC #: 0849

File #: 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

7.22.Fiddymment Ranch Phase 2 Village 12-0001 - Final Map

Memo from Assistant Engineer Kerry Andrews and Development Services Director Mike Isom recommending the City Council approve the Fiddymment Ranch Phase 2, Village 12-0001 final map. Engineering has completed its review of the final map and found that it is in compliance with the approved tentative map. This map will be creating 6 residential lots and 1 landscape lot. The actions requested have no fiscal impact to the City's General Fund.

CC #: 0850

File #: 0400-07

CONTACT: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Ceremonial Documents

7.23. Proclamation - Park and Recreation Month

Proclaim July, 2020 as Park and Recreation Month and encourage citizens to join with their communities in participation of Park and Recreation Month.

CC #: 0866

File #: 0102-06

CONTACT: Ellen Worland 916-774-5131 eworland@roseville.ca.us

END OF CONSENT CALENDAR

8. RESOLUTIONS

8.1. Villages at Sierra Vista Community Facilities District No. 1 Series 2020 Bond Issuance

Memo from Administrative Analyst Jeannine Thrash and Assistant City Manager/Chief Financial Officer Dennis Kauffman recommending the City Council adopt RESOLUTION NO. 20-271 AUTHORIZING THE ISSUANCE OF SPECIAL TAX BONDS FOR AND ON BEHALF OF THE CITY OF ROSEVILLE VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES), APPROVING AND DIRECTING THE EXECUTION OF SUPPLEMENT NO. 1 TO FISCAL AGENT AGREEMENT, APPROVING THE FORM OF PRELIMINARY OFFICIAL STATEMENT, APPROVING BOND PURCHASE AGREEMENT, APPROVING SALE OF SUCH BONDS, AND APPROVING OTHER RELATED DOCUMENTS AND ACTIONS. The 2020 bonds are being issued at the developer's request in an amount not to exceed \$10,500,000 to construct and acquire certain public facilities of benefit to the Community Facilities District (CFD), to establish a debt service reserve fund for the 2020 bonds, and to pay the costs of issuing the 2020 bonds. The 2020 bonds are the second series of bonds being issued for the CFD.

CC #: 0860

File #: 0206-03-01

CONTACT: Jeannine Thrash 916-774-5473 jthrash@roseville.ca.us

Dennis Kauffman 916-774-5413 dkauffman@roseville.ca.us

8.2. Integrated Resource Plan - Professional Services Agreement Amendment

Memo from Assistant Environmental Utilities Director Sean Bigley and Environmental Utilities Director Richard Plecker recommending the City Council adopt RESOLUTION NO. 20-263 APPROVING A FIRST AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND STANTEC CONSULTING SERVICES, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE. Staff requests approval of the First Amendment to Professional Services Agreement with Stantec Consulting

Services, Inc. for development of an Integrated Resource Plan for the Environmental Utilities Department with a modified scope of services and an increase to the not-to-exceed amount from \$339,752 to \$753,752, which is budgeted in FY2020-21 and funded in the Water Construction Fund.

CC #: 0851

File #: 0800-02

CONTACT: Sean Bigley 916-774-5513 sbigley@roseville.ca.us

9. PUBLIC HEARING

NOTICE TO THE PUBLIC

City Council, when considering the matter scheduled for hearing, will take the following actions:

1. Open the Public Hearing
2. Presentation by Staff
3. Presentation by applicant or Appellant
4. Accept Public Testimony
5. Appellant or Applicant Rebuttal Period
6. Close the Public Hearing
7. City Council Comments and Questions
8. City Council Action

In the future, if you wish to challenge in court any of the matters on this agenda for which a public hearing is to be conducted, you may be limited to raising only those issues, which you, or someone else raised orally at the Public Hearing or in written correspondence received by the City or before the hearing

Public Hearings listed for continuance will be continued as noted and posting of this agenda serves as notice of continuation.

9.1. Plaza at Blue Oaks - Mitigated Negative Declaration, Design Review Permit, Tentative Subdivision Map, and Tree Permit

Memo from Associate Planner Kinarik Shallow and Development Services Director Mike Isom recommending the City Council adopt the Plaza at Blue Oaks Initial Study/Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program; and adopt RESOLUTION NO. 20-264 DENYING THE APPEAL FROM THE MAY 14, 2020 APPROVALS BY THE PLANNING COMMISSION; ADOPTING THE PLAZA AT BLUE OAKS INITIAL STUDY/MITIGATED NEGATIVE DECLARATION AND THE MITIGATION MONITORING AND REPORTING PROGRAM; ADOPTING THE FOUR (4) FINDINGS OF FACT AND APPROVING THE DESIGN REVIEW PERMIT SUBJECT TO ONE HUNDRED ONE (101) CONDITIONS OF APPROVAL; ADOPTING THE THREE (3) FINDINGS OF FACT AND APPROVING THE TENTATIVE SUBDIVISION MAP SUBJECT TO THIRTY-NINE (39) CONDITIONS OF APPROVAL; AND ADOPTING THE TWO (2) FINDINGS OF FACT AND APPROVING THE TREE PERMIT SUBJECT TO TWENTY (20) CONDITIONS OF APPROVAL. The proposed project includes a request for a Design Review Permit to allow the construction of an

82,100-square-foot shopping center consisting of a 35,000-square-foot anchor grocery store, a 12-pump gas station with a 3,500-square-foot-convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet. The project includes a Tentative Subdivision Map to subdivide the 13.35-acre parcel into eight (8) lots and a Tree Permit to remove 28 native oak trees on the westerly portion of the site.

CC #: 0853

File #: 0400-04-09-1 & 0400-08 & 0400-06-02 & 0400-07

CONTACT: Kinarik Shallow 916-746-1309 kshallow@roseville.ca.us

10. COUNCIL REPORTS / PUBLIC COMMENTS

11. ADJOURNMENT



COUNCIL COMMUNICATION

CC #: 0845
File #: 0704-01

Title: Cresthaven Tennis Court Renovation Project - Approval of Plans and Specifications and Authorization to Call for Bids
Contact: Heather Buck 916-774-5254 hcbuck@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.1.

RECOMMENDATION TO COUNCIL

Recommend Council approve the plans and specifications for the Cresthaven Tennis Court Renovation Project and authorize staff to call for bids.

BACKGROUND

Jack Wallace Park at Cresthaven is a neighborhood park site located east of Vernon Street and south of Cirby Way. The tennis court renovation project includes removal and replacement of the existing tennis court surfacing due to extensive cracks in the surface. The project will include placement of a root and bio-barrier below the surface to discourage the adjacent tree roots from growing near the surface of the tennis courts and creating future damage. Responding to current trends in park amenities, the project will also include new striping and nets for one tennis court and two pickleball courts as well as new seating.

Staff met with park neighbors on January 13, 2020. The project renovations were discussed and three potential trees were identified and agreed to be removed. Upon further tree root investigation, staff was able to decrease the number of trees to be removed to one. Additional public outreach was conducted through a two week write-in period between April 7 and April 21, 2020. Notification of the write-in period was conducted through the neighborhood association. Five comments were received. Four expressed no opposition to these improvements and provided added comment for possible future improvements elsewhere in the park. One respondent felt the facility should remain tennis courts only.

Bids are scheduled to be opened in July 2020. Staff plans to return to Council in September to seek approval to award the project.

FISCAL IMPACT

The estimate for construction is \$210,000. Funding for the park improvements was provided

through the Parks, Recreation & Libraries Capital Fund approved in the FY2019-20 budget. Maintenance of the existing neighborhood park is provided by the General Fund and will remain unchanged.

ENVIRONMENTAL REVIEW

The proposed project involves minor alterations of an existing facility. The proposed alterations meet the specified criteria, and is categorically exempt from CEQA as a Class 1 Exemption (State CEQA Guidelines Section 15301). The Exemption has been prepared and no further CEQA action is required.

Respectfully Submitted,

Heather Buck, Park Development Analyst

Jill Geller, Director, Parks, Recreation & Libraries



Dominick Casey, City Manager

ATTACHMENTS:

Description

Cresthaven Project Manual



Project Manual for the Cresthaven Tennis Court Renovation Project

April 2020

The latest edition of the City of Roseville Parks Construction Standards are incorporated by reference as a part of this Project Manual. The Parks Construction Standards can be purchased at the address listed below.

Parks, Recreation & Libraries
316 Vernon Street, Suite 400
Roseville, California 95678
www.roseville.ca.us

For Council Approval
Not For Bidding



Notice to Bidders

DATE: July 2, 2020
TO: Prospective Bidders
FROM: Heather Buck, Park Development Analyst
RE: Cresthaven Tennis Court Renovation

Project Description: The City of Roseville is now accepting bid proposals for the Cresthaven Tennis Court Renovation Project. The scope of work for this project generally includes removal and replacement of the existing tennis court asphalt and surfacing, new striping to include one tennis court and two pickleball courts, and new seating. The project also includes new chain link fence and windscreen.

Contract Documents: A Project Manual, including all Contract Documents and the Proposal forms for bidding this project, may be obtained online from the City of Roseville's website at www.roseville.ca.us/business/bids_rfps_rfqs_andrfis.asp. All communications relative to this project shall be conducted through Public Purchase.

Potential bidders are advised to obtain all documents and specifications related to this project directly from the City of Roseville. The City of Roseville does not guarantee the accuracy of any forms, plans, or project manuals obtained through outside sources other than the City of Roseville. Furthermore, the City does not guarantee the distribution of any addendums or the accuracy of their content if obtained from a third party.

Bidders expressly assume the risk that their bid will be rejected from the use of project manuals or project plans obtained from third parties other than the City of Roseville.

Engineer's Estimate: The engineer's estimate for construction of the base bid items is \$210,000.00.

Pre-Bid Meeting: Not applicable.

Questions: All questions prior to the deadline for bid submissions shall be directed to the attention of Heather Buck via Public Purchase at <https://roseville.ca.us/rfp>. The deadline for submission of questions and clarifications regarding the Contract Documents is 7 calendar days before the deadline for bid submissions. Only Addenda issued by the City are binding.

Bid Deadline: All sealed bids must be mailed to the City Clerk's office at 311 Vernon Street, Roseville, CA 95678, and received by 3:00 p.m., Pacific Time on July 21, 2020. Such sealed Bids shall ONLY be mailed, as City offices and buildings are closed to the public. No hand delivered Bids will be accepted. The public Bid opening will occur via a video recorded Bid opening that may be viewed, upon request, however no in person attendance is allowed due to COVID 19.

The July 2019 edition of the City of Roseville Parks Construction Standards will be applicable to this project. The successful bidder will be required to use the standards contained in the book for the construction of this project.

For Council Approval
Not For Bidding



Parks, Recreation & Libraries
316 Vernon Street, Suite 400
Roseville CA 95678

Notice to the apparent low bidder for the Cresthaven Tennis Court Renovation Project

In order to move forward with the award of this project, the City of Roseville requests that you submit the following documents:

1. Agreement (two sets of originals) with either:
 - wet signatures from two corporate officers, or
 - wet signature from one corporate office plus the corporate seal
2. Public Works Faithful Performance Bond – fully executed and notarized.
3. Public Works Labor and Materials Payment Bond – fully executed and notarized.
4. Insurance - fully executed and notarized.

The Agreement, bond forms and insurance requirements are contained in this Project Manual.

We request that all documents be received by Friday, August 7, 2020.

Please contact us if you are unable to meet this deadline.

Send completed forms to:

City of Roseville - Parks, Recreation & Libraries Department
Attn: Heather Buck
316 Vernon Street, Suite 400
Roseville CA 95678

The Parks, Recreation, & Libraries Department requires submittal of all of the above executed documents prior to City Council bid award.

**For Council Approval
Not For Bidding**

916.774.5505 phone
916.774.5251 fax
www.roseville.ca.us

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For Council Approval
Not For Bidding

CITY OF ROSEVILLE
DEPARTMENT OF PARKS, RECREATION & LIBRARIES

Name of Project: Cresthaven Tennis Court Renovation

NOTICE TO CONTRACTORS

NOTICE IS HEREBY GIVEN THAT sealed Proposals will be received at the Office of the City Clerk, 311 Vernon Street, Roseville, California, until July 21, 2020 at 3:00 p.m. Late Proposals will be rejected. No exceptions.

All sealed bids must be mailed to the City Clerk's office at 311 Vernon Street, Roseville, CA 95678, and received by 3:00 p.m., Pacific Time on July 21, 2020. **Such sealed Bids shall ONLY be mailed, as City offices and buildings are closed to the public. No hand delivered Bids will be accepted.** The public Bid opening will occur via a video recorded Bid opening that may be viewed, upon request, however no in person attendance is allowed due to COVID 19.

A pre-bid meeting will be held at (not applicable).

A Project Manual, including all Contract Documents and the Proposal forms for bidding this project, may be obtained on-line from the City of Roseville's website at https://www.roseville.ca.us/business/procurement_services/bids_rfps. All communications relative to this project shall be conducted through Public Purchase.

Bids shall be submitted on the City's Proposal Forms included in the Project Manual, plainly endorsed with the Bidder's name together with signed acknowledgement of any and all addenda. Proposal Forms shall be securely sealed in a suitable envelope marked with the name and address of the Bidder, and marked in capital letters on the front and back of the envelope as

follows:

[NAME OF PROJECT]

(Name of Bidder)

(Address of Bidder)

Whether mailed or personally delivered, all bids shall be addressed to the City of Roseville, Office of the City Clerk, 311 Vernon Street, Roseville, California, 95678.

Each bid must be accompanied by a Bid Guaranty in the form of a Certificate of Deposit, Certified or Cashier's Check, Bidder's Bond or Irrevocable Standby Letter of Credit in an amount equal to at least ten percent (10%) of the Bidder's Grand Total Price. The Bid Guaranty will be retained by the City and applied to any and all damages sustained by the City in the event that the successful Bidder fails or refuses to enter into the Contract awarded to it and to furnish all required bonds and Certificates of Insurance. The City intends to award the Contract to the lowest responsible Bidder based on the Grand Total Bid Price for all components of the Project. To the extent allowed by law, the City reserves the right to reject any and all bids and/or to waive any irregularities or informalities in any bid or in the bidding procedure. The City specifically reserves the right to not award the Contract after the opening of bids.

Any bid may be withdrawn at any time prior to the time fixed in the public notice for the deadline submission of bids only by written request for the withdrawal of the bid filed with the City Clerk. The request shall be executed by the Bidder or his or her duly authorized representative. The withdrawal of a bid does not prejudice the right of the Bidder to file a new bid by the submission deadline. Whether or not bids are opened exactly at the time fixed in the public notice for opening bids, a bid will not be received after the deadline submission of bids

nor may any bid be withdrawn after the time fixed in the public notice for deadline for submission of bids. Immediately following the deadline for submission of bids all bids shall become the property of the City of Roseville and the City is under no obligation to return bids.

Bids will be examined and reported to the City Council within sixty (60) business days after the bid opening. Except as permitted by applicable law, no Bidder may withdraw its bid for a period of sixty (60) business days after the date of bid opening. Each Bidder will be notified of any award of the Contract by the City.

The City will affirmatively ensure non-discrimination on the basis of one or more of the following: race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, age, sexual orientation, or military and veteran status in the award and administration of contracts that it awards.

Pursuant to Public Contract Code Section 22300, the successful Bidder may submit certain securities in lieu of the City withholding retention of payments during the Project.

The City has determined that the Contractor shall possess a valid Class A, General Engineering Contractor's license at the time that the bid is submitted, as well as any other license classification as may be required by the laws of the California for the performance of the work specified in the Contract Documents. Said license shall be maintained during the Contract period. Failure to possess the specified license shall render the bid nonresponsive and will act as a bar to the award of the Contract to any Bidder not possessing such a license at the time of bid submittal. The Contractor shall provide certification of the license, its number and the expiration date on the proposal form.

The work is to be done in Placer County. Pursuant to California Labor Code Section 1773, the City has ascertained the General Prevailing Rate of Wages in the County in which the

work is to be done to be as determined by the Director of Industrial Relations of the State of California. The Contractor is hereby made aware that information regarding prevailing wage rates may be obtained from the State Department of Industrial Relations and/or the following website address: <http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm>. The Contractor is required to post a copy of the applicable wage rates at the job site. Attention is directed to Section 5 “Legal Relations and Responsibility” of the General Conditions.

Pursuant to Labor Code Section 1771.1(b), notice is hereby given that a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in Labor Code Sections 1720, et seq., unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5 or exempt from registration requirements pursuant to Labor Code Section 1725.5(f). It is not a violation of Labor Code Section 1771.1 for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform work pursuant to Labor Code Section 1725.5 at the time the contract is awarded or is exempt from registration requirements pursuant to Labor Code Section 1725.5(f). The Contractor is hereby notified that this project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

All questions prior to the deadline for bid submissions shall be directed to the attention of Heather Buck via email at HCBuck@roseville.ca.us. The deadline for submissions of questions and clarifications regarding the Contract Documents is 7 calendar days before the deadline for

bid submissions. Only Addenda issued by the City are binding.

City Clerk, City of Roseville

Dated: _____

Published: _____

For Council Approval
Not For Bidding

INSTRUCTIONS TO BIDDERS

SECTION 1. GENERAL

1-1.01 **GENERAL.** These Instructions to Bidders form a part of the Contract Documents. Capitalized terms are defined in the General Conditions Section 1.

1-1.02 **EXAMINATION OF PLANS, CONTRACT DOCUMENTS AND SITE OF THE WORK.** The Bidder shall examine carefully the site of the Work and all the Contract Documents, including these Instructions to Bidders, and shall inform itself of the conditions relating to the execution of the Work. Failure to do so will not relieve the successful Bidder of its obligation to enter into an Agreement and complete the Work in strict accordance with the Contract Documents. Conditions relating to the execution of the Work include the requirements of federal, state, and local laws, statutes and ordinances relative to the execution of Work, including, but not limited to, applicable regulations concerning prevailing wage rates, non-discrimination in the employment of labor, protection of the public, employee health and safety, and environmental protection.

The submission of a bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work to be performed, the quantities of materials to be furnished, and as to the requirements of all the Contract Documents.

1-1.03 **EXISTING INFORMATION.** Where the Department has made investigations of site conditions, including subsurface conditions in areas where Work is to be performed under the Contract, such investigations are made only for the purpose of study and design. City does not represent that such conditions as found in these investigations or inferences or conclusions drawn as a result of these investigations will represent actual site

conditions and hereby disclaims any liability as a result of Contractor's or Bidder's reliance on such investigations. City will presume that all Bidders have conducted their own site investigations, including investigations of subsurface conditions. Where such investigations have been made, Bidders or Contractors may, upon written request, inspect the records of the Department as to such investigations subject to the conditions set forth in these Instructions to Bidders. Such inspection of records may be made only at the location noted above. The records of such investigations are not a part of the Contract Documents and are shown solely for the convenience of the Bidder or Contractor. The City assumes no responsibility whatsoever with respect to the sufficiency or accuracy of the investigations made, the records thereof, or of the interpretations set forth therein or made by the City in its use thereof. The City makes no warranty or guarantee, either express or implied, that the conditions indicated by such investigations or records are representative of those existing throughout such areas, or any part thereof, or that unforeseen developments may not occur, or that materials other than, or in proportions different from those indicated, may not be encountered.

No information derived from such inspection of records of investigations or compilation thereof made by the City, the Department or from the Engineer, or his or her assistants, will in any way relieve the Bidder or Contractor from properly examining the site and making such additional investigations as it may elect, or from properly fulfilling the terms of the Contract.

For Council Approval
Not For Bidding

SECTION 2: BID REQUIREMENTS

2-1.01 **PROPOSAL FORMS.** The Department will furnish to each Bidder standard Proposal Forms, which, when filled out and executed may be submitted as the bid. Proposals shall include all pages in the Project Manual with page numbers marked "PROP" plus the Addendum acknowledgment form (front sheet) from all Addenda received by the Bidder. Proposals shall be removed from the Project Manual. The full Project Manual shall not be submitted with the proposal. Bids not presented on forms so furnished will be disregarded.

The Proposal and one (1) copy thereof shall be submitted as directed in the "Notice to Contractors" under sealed cover plainly marked as a Proposal, and identifying the project to which the Proposal relates and the date of the bid opening therefor. Proposals which are not properly marked may be disregarded.

All blank spaces in the Proposal must be completed, as required, in ink. All price information shall be shown, clearly legible, in figures where required.

The Bidder shall sign the Proposal in the blank space provided therefor. If the Bidder is the sole owner, the Proposal shall be signed by the owner. If the Bidder is a corporation, the legal name of the corporation and its State of incorporation shall be set forth and the Proposal shall be signed by at least two officers authorized to sign contracts on behalf of the corporation. If the Bidder is a partnership, the true name of the firm shall be set forth, the names and addresses of all partners shall be given and the Proposal shall be signed by a partner in the firm authorized to sign contracts on behalf of the partnership. If the Bidder is a joint venture, the Proposal shall be signed on behalf of each participating company by officers or other individuals who have the full and proper authorization to do so. If the Proposal is signed by an agent of the Bidder other than an officer of a corporation or a member of a partnership, a notorized Power of

Attorney must be on file with the City prior to opening of bids or must be submitted with the Proposal. If requested by the City, the Bidder shall promptly submit evidence satisfactory to the City of the authority of the person signing the Proposal.

2-1.02 **SUBMISSION OF BIDS.** Bids must be submitted at the prescribed time and location specified in the Notice to Contractors. Any submission received after the prescribed time shall be rejected, regardless of whether or not bids are opened exactly at the prescribed time.

Any unauthorized conditions or qualifications entered on, or changes made to, the Proposal may render it invalid and may cause its rejection.

No telegraphic, telephonic, or facsimile or other electronically transmitted bids will be considered.

2-1.03 **REQUIRED LISTING OF PROPOSED SUBCONTRACTORS.** Each Proposal shall list the name, address and Contractor license number of each Subcontractor to whom the Bidder proposes to subcontract portions of the Work in an amount in excess of one-half of one percent (0.5%) of its total bid, in accordance with Section 4100 to 4114, inclusive, of the Public Contract Code for the State of California. The Bidder shall list the Subcontractor's license number and the portion of the Work that will be done by each Subcontractor. If the Bidder fails to specify a Subcontractor for any portion of the Work, the Bidder agrees to perform that portion of the Work itself, and represents that it is qualified to perform that portion of the Work itself. The Bidder's attention is invited to other provisions of the Public Contract Code related to the imposition of penalties for a failure to observe its provisions by using unauthorized Subcontractors or by making unauthorized substitutions.

2-1.04 **CONTRACTOR'S LICENSING LAWS.** Attention is directed to the

provisions of Business and Professions Code Chapter 9 of Division 3 concerning the licensing of Contractors.

All Bidders at the time of bid submittal shall be licensed as Contractors in accordance with the laws of this State. Any Bidder or Contractor not so licensed is subject to the penalties imposed by such laws. The form of Contractor's license required is stated in the Notice to Contractors, provided that the City makes no representation as to whether the State may require other or additional licenses. It is the Bidder's and Contractor's responsibility to obtain the correct Contractor's licenses. Bidders shall be skilled and regularly engaged in the general class or type of Work called for under this Contract.

All Bidders and Contractors, including Subcontractors, shall have a current City business license before undertaking any Work.

2-1.05 **NONCOLLUSION DECLARATION.** By submitting a bid, the Bidder represents and warrants that such bid is genuine and not a sham or collusive or made in the interest or on the behalf of any person therein named, and that the Bidder has not, directly or indirectly, included or solicited any other Bidder to put in a sham bid, or any other person, firm, or corporation to refrain from bidding, and that the Bidder has not in any manner sought collusion to secure the Bidder an advantage over any other Bidder.

Bidders shall submit a properly completed and executed "Noncollusion Declaration" in the form required by Public Contract Code Section 7106 and provided with the Proposal (PROP-11).

2-1.06 **DISQUALIFICATION, REMOVAL OR OTHER PREVENTION OF BIDDING.** A bid may be rejected on the basis of a Bidder, any officer of such Bidder, or any employee of such Bidder who has a proprietary interest in such Bidder, having been disqualified,

removed, or otherwise prevented from bidding on, or completing a federal, state, or local project because of a violation of law or a safety regulation.

2-1.07 **PROPOSAL GUARANTY.** All bids shall be accompanied by one of the following forms of Bidder's security: Cash, a cashier's check, a certified check, or a Bidder's bond executed by an admitted California surety insurer, made payable to the City of Roseville, or any other form of security deemed acceptable by the City Attorney. The security shall be in an amount equal to at least ten percent (10%) of the amount bid. A bid will not be considered unless one of the form of Bidder's security is enclosed with it.

A Bidder's bond shall conform to the City's bond form in the Proposal and shall be properly filled out and executed.

2-1.08 **SCHEDULE OF BID PRICES.** Bidders are directed to submit unit and lump sum prices for all Work set forth in the Contract Documents on the Proposal Form entitled "Schedule of Bid Prices."

Unit prices and lump sum prices, as indicated, must be entered in the appropriate spaces provided in the Schedule of Bid Prices. If applicable, unit prices shall be multiplied by the quantities shown, and the total shall be inserted in the Amount column. In the event of any error or discrepancy between the unit price and the calculated amount, the unit prices shall govern.

The City may correct any mathematical errors apparent on the face of the bid.

The amounts shown in the Amount column must be added together in arriving at the Grand Total Bid Price.

Amounts for Allowance bid items must be entered in the exact amount in the Amount column.

The prices included within the Schedule of Bid Prices shall include all costs for labor,

materials, tools, equipment, services, Subcontractors, suppliers, taxes, insurance, shipment, delivery, overhead, profit, and all other costs necessary to perform the Work in accordance with the Contract Documents.

The Grand Total Bid Price shall be indicated in the Summary table form included with the Schedule of Bid Prices. The Grand Total Bid Price shall be the sum of the amounts bid for each of the designated portions of the Work, as more specifically described on the Schedule of Bid Prices form itself.

Full compensation for complying with the Contract Documents, including requirements of the Standard Specifications, the General Conditions, Supplemental Conditions, and all warranties, shall be considered included in the bid items and no additional compensation shall be allowed therefor.

Full compensation for completion of all work as shown on the plans, as specified in the Specifications, and as directed by the City, shall be considered included in the bid items and no additional compensation shall be allowed.

Bidders are strongly discouraged from submitting unbalanced bids. As used herein, the term “unbalanced bid” is defined as any bid that does not include a reasonable proportionate allocation of indirect costs and profit of each bid item indicated in the Schedule of Bid Prices. The City reserves the right to reject any unbalanced bid if the City determines that there is a reasonable doubt that an acceptance of the bid will not result in the lowest ultimate cost to the City with regard to the work or a disproportionate distribution of contract funds.

The City reserves the right to delete any bid item in its entirety and/or significantly reduce the quantity of Work under a bid item. The City makes no representation that any Work under a bid item will be performed during the course of the Project or that the Work will be

performed at the quantities included in the Schedule of Bid Prices. As provided in the General Conditions, for any deleted Work, Contractor shall not be entitled to payment of the indirect costs and profit included for said bid item. All bid items shall be considered distinct and severable from the remaining bid items, and each Bidder acts at its peril if its bid is unbalanced.

The City shall compare bids on the basis of the Grand Total Bid Price, which includes the base bid and any alternates designated on the Schedule of Bid Prices. Alternates may or may not be awarded, or may be awarded in any combination, at the City's discretion.

2-1.09 **WITHDRAWAL OF PROPOSALS.** Any bid may be withdrawn at any time prior to the time fixed in the Notice to Contractors for the opening of bids, provided that a request in writing, executed by the Bidder or its duly authorized representative, for the withdrawal of such bid is filed with the City Clerk. Facsimile and electronic mail requests are not acceptable. The withdrawal of a bid shall not prejudice the right of a Bidder to file a new bid. The withdrawal of any bid after the time fixed in the Notice to Contractors for the opening of bids will not be permitted.

2-1.10 **ADDENDUM.** Proposals shall include all costs and account for all Addenda issued prior to opening of bids. The Bidder is responsible for verifying that all issued Addenda have been received. An Addendum acknowledgment form for each Addendum shall be included as part of the Proposal submittal.

2-1.11 **PUBLIC OPENING OF PROPOSALS.** Proposals will be publicly opened and read at the time and place indicated in the Notice to Contractors. Bidders or their authorized agents are invited to be present.

2-1.12 **TRENCHING AND EXCAVATION WORK.** In accordance with the provisions of California Labor Code Section 6707, if the Work involves construction of a

pipeline, sewer, sewage disposal system, boring or jacking pits, or similar trenches or open excavations, which are five feet (5') or deeper, each bid submitted shall contain, as a bid item, adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life or limb, which shall conform to all applicable safety orders.

For Council Approval
Not For Bidding

SECTION 3: EVALUATION OF BIDS

3-1.01 **BID EVALUATION PROCESS.** Bids will be evaluated to determine the apparent low Bidder. The apparent low Bidder will be determined on the basis of the Grand Total Bid Price, as shown in the Schedule of Bid Prices. If additive or deductive alternates are used in the Schedule of Bid Prices, the apparent low Bidder will be the Bidder with the lowest total of the bid prices for base contract items plus the alternates designated by the City as those that will be used for determining the lowest bid price. However, the City reserves the right to (1) not award any alternates or (2) award any combination of alternates.

In case of discrepancy between the total of the base contract items and any specified alternates and the stated Grand Total Bid Price, the total of the base contract items plus specified alternates shall prevail. Any mathematical errors that appear on the face of the bid will be corrected by the City and the City will use the mathematically corrected addition. For example, if the mathematical total of Bidder's base contract items plus specified alternates equals \$1,000,000, but the Bidder has written \$1,250,000 as the Grand Total Bid Price, the City will consider \$1,000,000 to be the Bidder's Grand Total Bid Price for purposes of comparison to other Bidders and actual bid award. The City reserves its rights to reject or accept bids based on discrepancies between the stated Grand Total Bid Price and the actual mathematical total of the base contract bid items, plus specified alternates.

3-1.02 **REJECTION OF IRREGULAR PROPOSALS.** Proposals may be rejected in the City's sole discretion if they show any alterations of form, additions not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind. However, the City reserves the right to waive any minor irregularities and informalities in any bid or in the bid procedure for any reason.

3-1.03 **COMPETITIVE BIDDING.** If more than one proposal is offered by any individual, firm, partnership, corporation, association, or any combination thereof, under the same or different names, all such proposals may be rejected. A party who has quoted prices on materials or Work to a Bidder is not thereby disqualified from quoting prices to other Bidders, or from submitting a bid directly for the materials or Work.

All Bidders are put on notice that any collusive agreement to control or affect the awarding of this Contract is in violation of the competitive bidding requirements of the City Charter, State Contract Act and the Business and Professions Code and may render void any Contract let under such circumstances.

3-1.04 **RELIEF OF BIDDERS.** If the Bidder claims a mistake was made in its bid, the Bidder shall give the Department written notice within five (5) Days after the opening of the bids of the alleged mistake, specifying in the notice in detail how the mistake occurred. No relief from a claimed mistaken bid shall be granted unless such mistake clearly appears on the face of the bid submitted to the City. Claimed mistakes on backup worksheets, spreadsheets, computerized bidding programs, or any other similar calculative bidding mistake which is not apparent on the face of the bid shall not under any circumstance be considered as a basis for relief. The burden of proving the occurrence of a mistake entitling a Bidder to relief from its bid rests entirely on the Bidder. Relief from bids shall be in the City's sole discretion.

For Council Approval
Not For Bidding

SECTION 4: AWARD AND EXECUTION OF CONTRACT

4-1.01 **AWARD OF CONTRACT.** The City reserves the right to reject any and all proposals and to award (or not award) any combination of bid items at its option. Any such award will be to the lowest responsible Bidder whose proposal complies with the requirements prescribed for the bid items awarded. Such award, if made, will be made within sixty (60) business days after the opening of the proposals. If the lowest responsible Bidder refuses or fails to execute the Contract, or provide an acceptable Performance Bond, Payment Bond, and insurance certificate(s), the City may award the Contract to the second lowest responsible Bidder. Such award, if made, will be made within eighty-two (82) business days after the opening of proposals. If the second lowest responsible Bidder refuses or fails to execute the Contract, or provide an acceptable Performance Bond, Payment Bond, and insurance certificate(s), the City may award the Contract to the third lowest responsible Bidder. Such award, if made, will be made within one hundred four (104) business days after the opening of the proposals. The above time periods within which the award of Contract may be made are subject to extension for such further period as may be agreed upon in writing between the City and the Bidder concerned.

4-1.02 **RETURN OF BIDDER'S SECURITIES.** Within ten (10) Days after the award of the Contract, the City Clerk will return all Bidders' securities, other than Bidders' bonds, accompanying the proposals that are not to be further considered in making the award. Retained Bidders' securities will be held until the Contract has been fully executed after which all Bidders' securities, except Bidders' bonds and any Bidders' securities that have been forfeited, will be returned.

4-1.03 **CONTRACT BONDS.** The successful Bidder shall furnish two (2)

bonds in the form contained in the section entitled Insurance Broker Information Packet and Bonds. One (1) bond shall secure the payment of the claims of laborers, mechanics or materialmen employed on the Work under the Contract, and the other bond shall guarantee the faithful performance of the Contract.

Each of the two (2) bonds shall be in a sum equal to one hundred percent (100%) of the Contract Price. If the Contract Price increases by the issuance of Change Orders, the penal amounts of the bonds required shall increase accordingly. Sureties on each of said bonds shall be satisfactory to the City.

All alterations, extensions of time, extra and additional Work, and other changes authorized by the Standard Specifications, the General Conditions, the Supplemental Conditions or any part of the Contract may be made without securing the consent of the surety or sureties on the Contract bonds.

Furthermore, the successful Bidder shall furnish a certificate from the County Clerk as required by California Civil Code of Procedure Section 995.660(a)(3).

4-1.04 **INSURANCE.** At the time of the execution of the Contract, the Contractor shall, at its own expense, procure, and at all times during the prosecution of the Work maintain in full force and effect Worker's Compensation Insurance, and Liability Insurance as specified in the General Conditions. The Contractor shall provide a Certificate of Insurance in the form contained in the section entitled Insurance Broker Information Packet.

4-1.05 **EXECUTION OF CONTRACT.** The Contract shall be signed by the successful Bidder and returned, together with all the required Contract bonds and insurance certificates, within fifteen (15) Days after the Contract has been awarded or as otherwise directed, in writing, by the City.

If the Bidder is an individual, the Contract shall be executed personally by the Bidder. If the Bidder is a partnership, it is desirable that the Contract be executed by all of the partners, but it may be executed by one of them. If the Bidder is a corporation, it must be executed by two officers of the corporation consisting of (1) the chairman of the board, president or vice president; and (2) the secretary, assistant secretary, chief financial officer, treasurer or assistant treasurer, or by a person authorized by the corporation to execute written contracts on its behalf, and the corporate seal affixed thereto. In the alternative, a person other than an officer may sign the Contract, provided evidence satisfactory to the City is provided indicating the individual's authority to bind the corporation. If the corporate seal is not affixed to the Contract, or if it is executed by a person other than officers, or only by one officer, there must be attached to the Contract a certified copy of a resolution of the corporation authorizing such officer or person to execute written contracts for and on behalf of the corporation. If the Bidder is a joint venture, the Contract must be executed on behalf of each participating firm by officers or other individuals who have the full and proper authorization to do so.

4-1.06 **FAILURE TO EXECUTE CONTRACT.** Failure of the lowest responsible Bidder, the second lowest responsible Bidder, or the third lowest responsible Bidder to execute the Contract and file acceptable bonds and insurance as provided within fifteen (15) Days after the Contract has been awarded, or as otherwise directed, in writing, by the City, shall be just cause for annulment of the award and forfeiture of the Bidder's security. The successful Bidder may file with the City Clerk a written notice, signed by the Bidder or Bidder's authorized representative, specifying that the Bidder will refuse to execute the Contract if presented to Bidder. The filing of such notice shall have the same force and effect as the failure of the Bidder to execute the Contract and furnish acceptable bonds within the time prescribed.

SECTION 5: BID PROTEST PROCEDURES

5-1.01 **POLICY/PROCEDURES.** It is the policy of the City to consider fully and adjudicate promptly protests filed by prospective Bidders relating to the City's bidding procedure or award of the Contract. Protests shall be filed and processed in accordance with Section 4.12.150 of the Roseville Municipal Code. A Bidder's failure to follow the bid protest procedures may result in rejection of the protest by the City.

For Council Approval
Not For Bidding

PROPOSAL TO THE DEPARTMENT OF PARKS, RECREATION & LIBRARIES

Project: Cresthaven Tennis Court Renovation

Name of Bidder _____ Business Phone _____

Business Address _____

Place of Business _____

Contractor's License No. _____

License Expiration Date _____

License Classification Type _____

DIR Registration No. _____

Type of business organization: _____

*If a Corporation, incorporated under the laws of the State of: _____

City of Roseville Business License No. _____

The undersigned Bidder herewith submits this Proposal and binds itself on award by the City of Roseville under this bid to execute a Contract in accordance with its bid and the Contract Documents.

The Notice to Contractors, Instructions to Bidders, Form of Agreement, Specifications, General Conditions, Supplemental Conditions, Contract Drawings, and Addenda, if any, are made part of this bid and all provisions thereof are hereby accepted, and all representations and warranties are required thereby are hereby affirmed.

The work to be done is described in the Bidding Documents entitled _____
Cresthaven Tennis Court Renovation, City of Roseville, California.

This offer shall be irrevocable for a period of sixty (60) Days after the date on which bids are opened.

For Council Approval
Not For Bidding

The undersigned Bidder understands that any clarification made to the above or any new and different conditions or information submitted on or with its Proposal, other than that requested, may render the bid non-responsive.

The undersigned, as Bidder, declares that the only persons or parties interested in this Proposal as principals are those named herein; that this Proposal is made without collusion with any other person, firm, or corporation; that the Bidder has carefully examined the location of the proposed Work, the attached Form of Agreement, and the plans, Specifications, and other Contract Documents; and agrees if this Proposal is accepted, that it will contract with the City of Roseville, in the form of a copy of the Agreement contained in the Project Manual, to provide all necessary machinery, tools, apparatus and other means of construction, and to do all the work and furnish all the materials specified in the Contract Documents, in the manner and time therein prescribed, and according to the requirements of the Director, as therein set forth, and that the Bidder will take in full payment therefore prices indicated in the Schedule of Bid Items, including all work modified by addendum numbers _____. (IF NONE, STATE NONE).

Bids are required for all Bid Items. The amount of the Bid for comparison purposes will be the total of all items awarded.

The Bidder shall set forth for each item of work, in clearly legible figures, an item ("unit") price and a total for the item in the respective spaces provided for this purpose in the Schedule of Bid Items.

The prices included within the Schedule of Bid Items include all costs for labor, materials, tools, equipment, services, Subcontractors, suppliers, taxes, insurance, shipment, delivery, overhead, profit, and for all other costs necessary to perform the Work in accordance

For Council Approval
Not For Bidding

with the Contract Documents.

Accompanying this Proposal is _____.

(Notice: Insert the words "Cash \$_____", "Cashier's Check," "Certified Check," or "Bidder's Bond," as the case may be, in an amount equal to at least ten percent (10%) of the total of the Bid.)

The names of all persons interested in the foregoing Proposal as Principals, are as follows: _____

If SOLE OWNER, execute here:

I sign as sole owner of the business named above:

If PARTNERSHIP, one or more partners sign here:

The undersigned certify that we are partners in the business named above and that we sign this bid with the full authority to do so:

If CORPORATION, execute here:

Corporate Name: _____

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Incorporated under the laws of the State of _____

The undersigned certify that they sign this bid with the full and proper authorization so to do:

By _____
*Signature of Authorized Official**

By _____
*Signature of Authorized Official**

Title

Title

Typewritten or Printed Name

Typewritten or Printed Name

If JOINT VENTURE, execute here:

Joint Venture name composed of: _____

The undersigned certify that they sign this bid with the full and proper authorization so to do:

*Signature of Authorized Official**

*Signature of Authorized Official**

Title

Title

Typewritten or Printed Name

Typewritten or Printed Name

*If Bidder is a partnership or Joint Venture, give the full names of all partners and/or Joint Ventures in the space provided (use additional sheet if required). If Bidder is a corporation, two signatures are required as follows: (1) the Chairman, President, or Vice-President and (2) the Secretary, Assistant Secretary, Chief Financial Officer, Treasurer, or Assistant Treasurer. In the alternative, this Agreement may be executed by a single officer or a person other than an officer provided that evidence satisfactory to City is provided demonstrating that such individual is authorized to bind the corporation (example, a copy of a certified resolution from the corporation's board or a copy of the corporation's bylaws).

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[LIST OF SUBCONTRACTORS FOLLOWS ON NEXT PAGE.]

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Not For Bidding

LIST OF SUBCONTRACTORS

Contractor's Name: _____

The Bidder is required to furnish the following information in accordance with the provisions of Section 4100 and 4114, inclusive, of the Public Contract Code of the State of California. This list and information shall include all Subcontractors that perform work, provide labor or render services to the Bidder in connection with the Project in an amount in excess of one-half of one percent (0.5%) of the total amount of the Bidder Grand Total Price.

PORTION/ TYPE OF WORK	% OF CONTRACT	SUB- CONTRACTOR'S NAME	CONTRACTOR LICENSE NO.	DIR REG NO.	BUSINESS ADDRESS (CITY, STATE)

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Not For Bidding

SECURITY FOR COMPENSATION CERTIFICATE

(Required by California Labor Code Section 1861)

TO: City Council
City of Roseville

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract.

(Signature of Bidder)

Business Address

Telephone

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For Council Approval
Not For Bidding

BIDDER'S BOND

City Council of the City of Roseville

KNOW ALL MEN BY THESE PRESENTS:

That we _____
_____, as PRINCIPAL, and

a, _____ and duly authorized to transact business
under the laws of the State of California, as SURETY, are held and firmly bound unto the City of
Roseville in the penal sum of _____ dollars
(\$_____), being at least TEN PERCENT (10%) OF THE TOTAL AMOUNT OF
THE BID of the Principal above named, submitted by said Principal to the City of Roseville,
acting by and through the Public Works Director, for the work described below, for the payment
of which sum in lawful money of the United States, well and truly to be made, to the Director of
the Department to which said Bid was submitted, we bind ourselves, our heirs, executors,
administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH,

That whereas the Principal has submitted the above-mentioned Bid to the City Council of
the City of Roseville, as aforesaid, for certain construction specifically described as follows, for
which Bids are to be opened at the Office of the City Clerk located at 311 Vernon Street,
Roseville, California, on _____, 20__ FOR

(Copy here the exact title of work as it appears on the Proposal.)

PROP - S

NOW, THEREFORE, IF THE AFORESAID PRINCIPAL is awarded the Contract and, within the time and manner required under the Contract Documents, after the prescribed forms are presented for signature, enters into a written Contract, in the prescribed form, in accordance with the Bid, and files all insurance and two (2) Bonds with the Department, one (1) to guarantee Faithful Performance and the other to guarantee Payment for Labor and Materials, as required by law, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals on this ____ day of _____, 20__.

_____(Seal)

_____(Seal)

_____(Seal)

Principal

_____(Seal)

_____(Seal)

_____(Seal)

Surety

Business Address

NOTE: To be considered complete, both the Principal and the Surety must sign this Bidder's Bond. In addition, signatures of those executing for the Surety must be properly acknowledged.

For Council Approval
Not For Bidding

SCHEDULE OF BID ITEMS

CRESTHAVEN TENNIS COURT RENOVATION

The bidder, in compliance with the published Notice to Contractors, having examined the Plans and Specifications, any and all addenda, any related documents, and all of the sites of the proposed work, and being familiar with all the conditions surrounding the construction of the proposed project, including the availability of material, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the Contract Documents, within the time period set forth therein, and at the prices stated. This is a lump sum bid project. These prices are to include all labor, materials, supplies, and all other expenditures incidental to complete compliance to the Contract Documents.

The work to be included in the Contract shall be determined by the City prior to award of Contract. **The amount of the bid for comparison and award purposes shall be the total amount set forth in the "Total Lump Sum Bid"**. The City reserves the right to award none, all or selected add alternates as the budget permits.

TOTAL LUMP SUM BID:

Includes all work as shown on the plans, project manual, and addenda to **construct the Cresthaven Tennis Court Renovation Project**.

Numerical **Total Bid**: \$ _____

Written **Total Bid**: _____ dollars and _____

The additions/deletions sheets (**PROP 10B**) are required to be completed in their entirety. Failure to do so would be interpreted as an incomplete/non-responsive bid.

The additions/deletions sheets will not be considered for bid award but will be used for contract change orders.

Contractor Name (print or type): _____

Signature (by authorized representative): _____

Date: _____ License No.: _____ Class: _____

**For Council Approval
Not For Bidding**

CRESTHAVEN TENNIS COURT RENOVATION

For Additions and Deletions Only.

Contractor shall provide itemized costs as shown below for use during the construction for additions and deletions only. Unit costs to be listed are based on the project plans, specifications, Parks Construction Standards and Design & Construction Standards, unless otherwise noted. Items listed are not necessarily shown on the plans or identified in the Technical Specifications.

Item	Description	Unit	Unit Cost
1	EC-2 Preservation of existing vegetation	SF	
2	Not used	SF	
3	Not used	SF	
4	Not used	SF	
5	Not used	SF	
6	Not used	SF	
7	Not used	EA	
8	Not used	SF	
9	Not used	SF	
10	SE-1 Silt fence	LF	
11	SE-5 Fiber Rolls	LF	
12	Not used	EA	
13	Not used	EA	
14	Not used	LF	
15	Not used	LF	
16	SE-10 Storm Drain Inlet Protection	EA	
17	Not used	LF	
18	Not used	SF	
19	Not used	EA	
20	Clear/Grub	SF	
21	Demolition	SF	
22	Grading	SF	
23	AC pavement	SF	
24	Multi-part acrylic color and surfacing system	SF	
25	Tennis net and posts	EA	
26	Pickleball net and posts	EA	
27	Chain link fence – galvanized – 6' tall	LF	
28	6' high windscreen	LF	
29	9' high windscreen	LF	
30	Court striping	LF	
31	Bench	EA	
32	Bench with shade	EA	
33	Root barrier	LF	
34	Bio barrier	LF	

Items 1 through 19 are to be consistent with requirements detailed in California Stormwater Quality Association Stormwater Best Management Practice Handbook, latest edition.

PROJECT QUALIFICATIONS/EXPERIENCE SHEET

Project Name: _____ Company Name: _____ License Type: _____

The following shall be fully completed by the Contractor detailing previous experience which satisfies the project prerequisite. This prerequisite includes park projects of similar size and scope to that of the current project and which has been completed by your company within the last three (3) years. This form shall be fully completed and submitted as a part of the Proposal/Bid Schedule. Failure to do so could be interpreted as an incomplete/non-responsive bid.

1. Project Name: _____ Acres _____ Location: _____
Owner: _____ Contact Person: _____
Phone: (____) _____ Contract Amount: \$ _____ Year Completed _____
Landscape Architect/Architect: _____ Phone: (____) _____

Scope of Work (check all those that apply):

___ Grading	___ Drainage	___ Irrigation	___ Asphalt Concrete Work	___ Concrete Forming
___ Concrete Flatwork	___ Special Concrete Finishing	___ Decomposed Granite Paving	___ Parking Lots	___ Tennis Courts
___ Basketball Court	___ Play Equipment Installation	___ Benches	___ Picnic Tables	___ Lighting
___ Drinking Fountains	___ Masonry Block Work	___ Backstops	___ Restroom Facilities	___ Landscaping
___ Other (specify) _____				

2. Project Name: _____ Acres _____ Location: _____
Owner: _____ Contact Person: _____
Phone: (____) _____ Contract Amount: \$ _____ Year Completed _____
Landscape Architect/Architect: _____ Phone: (____) _____

Scope of Work (check all those that apply):

___ Grading	___ Drainage	___ Irrigation	___ Asphalt Concrete Work	___ Concrete Forming
___ Concrete Flatwork	___ Special Concrete Finishing	___ Decomposed Granite Paving	___ Parking Lots	___ Tennis Courts
___ Basketball Court	___ Play Equipment Installation	___ Benches	___ Picnic Tables	___ Lighting
___ Drinking Fountains	___ Masonry Block Work	___ Backstops	___ Restroom Facilities	___ Landscaping
___ Other (specify) _____				

3. Project Name: _____ Acres _____ Location: _____
Owner: _____ Contact Person: _____
Phone: (____) _____ Contract Amount: \$ _____ Year Completed _____
Landscape Architect/Architect: _____ Phone: (____) _____

Scope of Work (check all those that apply):

___ Grading	___ Drainage	___ Irrigation	___ Asphalt Concrete Work	___ Concrete Forming
___ Concrete Flatwork	___ Special Concrete Finishing	___ Decomposed Granite Paving	___ Parking Lots	___ Tennis Courts
___ Basketball Court	___ Play Equipment Installation	___ Benches	___ Picnic Tables	___ Lighting
___ Drinking Fountains	___ Masonry Block Work	___ Backstops	___ Restroom Facilities	___ Landscaping
___ Other (specify) _____				

For Council Approval
Not For Bidding

NONCOLLUSION DECLARATION TO BE EXECUTED BY
BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham bid. The Bidder has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham bid, or to refrain from bidding. The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other Bidder. All statements contained in the bid are true. The Bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a Bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

(Signature of Declarant)

DISQUALIFICATION QUESTIONNAIRE

The Bidder shall complete, under the penalty of perjury, the following questionnaire:

Has the Bidder, any officer of the Bidder, or any employee of the Bidder who has proprietary interest in the Bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes_____

No_____

If the answer is yes, explain the circumstances in the following space.

NAME OF BIDDER: _____

SIGNATURE OF BIDDER: _____

TITLE OF BIDDER: _____

DATE: _____

For Council Approval
Not For Bidding

ACKNOWLEDGEMENT OF INSURANCE AND BOND REQUIREMENTS

Included in the Bid Price is full compensation for the requirements set forth in the
INSURANCE BROKER INFORMATION PACKET of the Project Manual.

NAME OF BIDDER: _____

SIGNATURE OF BIDDER: _____

TITLE OF BIDDER: _____

DATE: _____

For Council Approval
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DISCLAIMER OF WARRANTIES AND ACCURACY OF DATA

Although soil and site investigation reports have been obtained from sources believed to be reliable, no warranty expressed or implied is made regarding accuracy, adequacy, completeness, legality, reliability or usefulness of any information contained therein. These reports are subject to change at any time, may be incomplete, and/or may contain errors. This information is provided for informational purposes only. The City of Roseville provides this information on an "as is" basis. Warranties of any kind, express or implied, or statutory, including but not limited to the implied warranties of merchantability, and fitness for a particular purpose ARE DISCLAIMED to any party viewing these documents or to any third party.

The City of Roseville does not accept and expressly disclaims liability to any party viewing such information, or to any third party whatsoever, for any loss, damage, or injury (including incidental or consequential damages) whether such loss, damage, or injury is the result of negligence, willful or intentional misconduct, or any other cause.

I have read and acknowledged the above disclaimer and agree to hold harmless the City of Roseville on any theory of liability for any loss, damage or injury whether in contract, strict liability or tort arising in any way out of the use or contents of the released information or documents described above or the performance of the work called for herein.

Print Name

Signature

Name of Business/Company/Corporation

Date

Address

Phone

For Council Approval
Not For Bidding

END OF PROPOSAL

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**For Council Approval
Not For Bidding**

A G R E E M E N T

THIS AGREEMENT, is made and entered into this ____ day of _____,
20____, by and between the City of Roseville, a municipal corporation, ("CITY"), and
_____, a _____,
("CONTRACTOR"); and

W I T N E S E T H:

WHEREAS, the City Council of the CITY, at a meeting held on the ____ day of
_____, 20____, approved plans and specifications for the

and directed the City Clerk to advertise for sealed proposals for doing said work and providing
that bids be submitted on the ____ day of _____, 20____; and

WHEREAS, the City Clerk, thereafter duly and regularly caused a notice to be published
in the manner and for the time prescribed by law; and

WHEREAS, CONTRACTOR, pursuant to the provisions of said notice duly filed a bid
with the City Clerk, a true copy of which bid is now on file in the office of the City Clerk, and is
hereby referred to and by this reference made a part hereof as fully as if set forth at length herein;
and

WHEREAS, all bids received pursuant to said notice were opened and examined and
publicly declared at the time specified in said advertisement for bids and at a meeting of the City
Council held on the ____ day of _____, 20____, the Council found and

declared the bid of CONTRACTOR to be the lowest responsible bid and thereupon awarded a contract to CONTRACTOR to do the work referred to in the aforementioned specifications.

NOW, THEREFORE, the parties agree as follows:

1. THE WORK. CONTRACTOR agrees:

a. To do the work and furnish all the labor, materials, tools, supplies, equipment, superintendence, insurance, and bonds required for the _____

_____ in accordance with the Contract Documents (the Work).

b. To do and perform the Work contemplated hereby in a good and workmanlike manner under the direction of and to the satisfaction of the Director of Public Works of the City of Roseville.

2. PAYMENT. CITY shall pay CONTRACTOR _____ dollars (\$_____) for the Work to be done under this Agreement in accordance with the Contract Documents.

3. CONTRACT DOCUMENTS. The complete Agreement between the parties hereto consists of the following documents:

- a. The advertisement for bids (including the notice to bidders, instructions to bidders and proposals);
- b. The accepted bid;
- c. Plans and specifications (including general conditions, supplemental conditions, special provisions and construction details);
- d. Bonds and insurance required by the specifications; and

For Council Approval
Not For Bidding

e. This contract.

All documents specified above are intended to operate so that any work called for in any one and not mentioned in the other, or vice versa, is to be executed the same as if mentioned in all said documents.

4. LIQUIDATED DAMAGES. In the event CONTRACTOR does not complete the Work within the time specified, CONTRACTOR agrees that CITY will suffer damages. Inasmuch as the actual damages which would result from such breach by CONTRACTOR under this Agreement are uncertain, and would be impractical or extremely difficult to fix, CONTRACTOR agrees that it shall pay, or CITY shall deduct from CONTRACTOR's fee, the amount of \$_____ per day as liquidated damages, in the event of such delay.

5. TIME OF COMPLETION. Time is of the essence of this Agreement. CONTRACTOR shall complete all Work under the Contract Documents within _____ Days of the date of this Contract. CONTRACTOR shall begin work by the date specified in the "Notice to Proceed" letter and shall diligently prosecute all of the Work under this Contract in all parts and requirements as defined in the Contract Documents.

6. SERVICE OF NOTICE. Any notice required or permitted to be given under this Agreement shall be deemed given when (a) personally delivered to the recipient identified below; (b) mailed by registered or certified mail, return receipt requested, postage pre-paid, to the address specified below; or (c) sent by facsimile, with confirmation of receipt, to the facsimile number identified below.

CITY OF ROSEVILLE

CONTRACTOR

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Not For Bidding

CITY may also act through either its architect or construction manager if CITY expressly gives notice to CONTRACTOR, in writing, that CITY's designee has authority to act for CITY in a specific capacity.

7. DISPUTES. Disputes arising from this Agreement will be determined in accordance with the Contract Documents and Public Contract Code Sections 10240-10240.13.

8. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

9. INDEPENDENT CONTRACTOR. CONTRACTOR shall act as an independent contractor, and covenants and agrees that it will conduct itself consistent with such status, that it will neither hold itself out as, nor claim to be, an officer or employee of CITY by reason of this Agreement.

10. SUCCESSORS IN INTEREST. This Agreement shall be binding upon the heirs, successors, executors, administrators and assigns of the respective parties hereto.

11. MODIFICATION. This Agreement and each provision contained herein may be waived, amended, supplemented or eliminated only by mutual written agreement of the parties.

12. SEVERABILITY. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.

13. INTEGRATED AGREEMENT. This is an integrated agreement and contains all of the terms, considerations, understanding and promises of the parties. It shall be read as a whole.

14. CONTRACTORS LICENSE LAW. CONTRACTORS ARE REQUIRED BY LAW TO BE LICENSED AND REGULATED BY THE CONTRACTORS' STATE LICENSE

BOARD WHICH HAS JURISDICTION TO INVESTIGATE COMPLAINTS AGAINST CONTRACTORS IF A COMPLAINT REGARDING A PATENT ACT OR OMISSION IS FILED WITHIN FOUR (4) YEARS OF THE DATE OF THE ALLEGED VIOLATION. A COMPLAINT REGARDING A LATENT ACT OR OMISISON PERTAINING TO STRUCUTRAL DEFECTS MUST BE FILED WITHIN TEN (10) YEARS OF THE DATE OF THE ALLEGED VIOLATION. ANY QUESTIONS CONCERNING A CONTRACTOR MAY BE REFERRED TO THE REGISTRAR, CONTRACTORS' STATE LICENSE BOARD, P.O. BOX 26000, SACRAMENTO, CALIFORNIA 95826.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attestation by its City Clerk under authority of Resolution No. _____, adopted by the Council of the City of Roseville on the ____ day of _____, 20____, and CONTRACTOR has caused this Agreement to be duly executed.

CITY OF ROSEVILLE, a
municipal corporation

_____, a

BY: _____
DOMINICK CASEY
City Manager

BY: _____
its: _____

and

ATTEST:

BY: _____
its: _____

BY: _____
SONIA OROZCO
City Clerk

For Council Approval
Not For Bidding

APPROVED AS TO FORM:

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:

BY: _____

Print Name: _____

Title: _____

For Council Approval
Not For Bidding

INSURANCE BROKER INFORMATION PACKET

Project: Cresthaven Tennis Court Renovation

NOTICE TO CONTRACTOR:

For your convenience, this package contains the Requirements for Insurance and Bonds for this project, including the necessary City forms. You are required to return these forms in addition to the executed Contract within fifteen (15) calendar days after the award of the Bid, unless otherwise directed by City in writing. (See the Instructions to Bidders.)

Please insert the dollar amount of your accepted Bid into the blank on page INS-1 and present this entire package to your insurance broker if you are awarded the Bid.

For Council Approval
Not For Bidding

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Insurance Requirements	INS 2
Public Works Faithful Performance Bond	INS 10
Public Works Payment Bond	INS 13

For Council Approval
Not For Bidding

NOTICE TO INSURANCE BROKER

Your client has been awarded a bid by the City Council of the City of Roseville to perform a public works project known as Cresthaven Tennis Court Renovation. The Contract Conditions for that project require your client (“the Contractor”) to return certain evidence of insurance and bonds to the City Attorney of the City within fifteen (15) days after the Bid award, unless otherwise directed by the City in writing, or else the Bid award may be terminated and awarded to another company.

This package contains the information you will need as an insurance broker to provide the appropriate insurance and bonds to the City. The insurance coverages the Contractor needs are specified in the section entitled “Insurance Requirements.” Please note that, in addition to the insurance certificate itself, copies of several endorsements must be actually furnished.

Please refer to the Supplemental Conditions for modifications of the General Conditions, if any, and the requirements of this insurance packet.

Please use the standard City of Roseville Bond Forms provided in this package.

The Bonds required must each be in the penal amount of: \$_____.

Bonds must be sent to the following staff person:

Insurance documents must be provided using one of the following methods:

- a. By email to roseville@ebix.com and riskmanagement@roseville.ca.us
- b. By fax to (770) 335-5727 and (916) 774-5461

After using one of these methods, please **DO NOT** send the insurance certificate(s) by mail.

When forwarding the documents, please refer to the project name so that the documents can be matched with the Contract for which they are submitted.

Thank you.

INS - 1

For Council Approval
Not For Bidding

INSURANCE REQUIREMENTS

The following sections are quoted from the General Conditions:

5-1.23 **INSURANCE COVERAGE.**

A. **Evidence of Maintenance Required.** The Contractor shall, at its expense, procure and at all times maintain in full force and effect at a minimum the insurance required by this section on all of its operations; and the Contractor shall not allow any Subcontractor to commence work until similar insurance required of the Subcontractor has been obtained and filed. An original Certificate of Insurance, and copies of all required endorsements, all in a form approved by the Risk Manager, evidencing all required coverage or policies shall be filed after the award of the bid and prior to approval of the Contract by the City Council. Contractor shall provide ten (10) days prior written notice to the City of any reduction of coverage limits or cancellation of the coverage or policies shall be given to the City of Roseville as Certificate holder.

B. **Qualifying Insurers.** With the exception of the State Compensation Insurance Fund, all required insurance policies shall be issued by companies acceptable to the City and licensed to do business in the State of California and who hold a current policy holders alphabetic and financial size category rating of not less than AVII according to the most recent issue of Best's Insurance Reports.

C. **Insurance Required.**

1. **Commercial General Liability (CGL):** Insurance Services Office Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations with limits of no less than Two Million Dollars (\$2,000,000) per occurrence for bodily injury, personal injury and property damage for projects under One Million Dollars (\$1,000,000) and

limits of no less than Five Million Dollars (\$5,000,000) per occurrence for bodily injury, personal injury and property damage for projects over One Million Dollars (\$1,000,000). If a general aggregate limit applies, either the aggregate limit shall apply separately to this project or the general aggregate limit shall be twice the required occurrence limit.

The Commercial General Liability insurance shall include the following, copies of which shall be provided:

a. Inclusion of the City of Roseville, and its officers, agents, employees, and volunteers, as additional insureds (except for workers' compensation) as respects services or operations under the Contract. The additional insured endorsement for the general liability policy shall be at least as broad as the ISO CG 2010 10 01 combined with ISO CGL Endorsement CG 2037 10 01. Any other endorsement must be approved in writing by the City. Endorsements must include coverage for on-going and completed operations, which coverage shall be maintained for four (4) years following completion of the Project. Endorsements shall cover the City of Roseville, its officers, agents, employees, and volunteers.

b. The insurance shall provide coverage for claims by one insured against another insured and the policies shall not contain any cross-suits exclusions, cross-liability exclusions, or insured versus insured exclusions. The policies shall not contain any classification exclusions purporting to deny coverage for any work to be performed by Contractor or any of its Subcontractors.

c. Stipulation that the insurance is primary and noncontributory, as evidenced by a separate endorsement (CG 20 01 04 13 or an equivalent) or section of the policy, and that neither the City nor its insurers will be called upon to contribute to a loss.

d. Such insurance shall specifically cover the contractual liability of

the Contractor.

e. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

f. Waiver of subrogation endorsement.

g. The Contractor shall furnish a certificate for the period covered.

2. **Automobile Liability:** Insurance Services Office Form Number CA 0001 covering Code 1 (any auto), or if Contractor has no owned autos, Code 8 (hired) and Code 9 (non-owned), with limits of no less than One Million Dollars (\$1,000,000) per accident for bodily injury and property damage.

3. **Workers' Compensation:** In accordance with the provisions of the California Labor Code, Contractor is required to be insured against liability for Workers' Compensation or to undertake self-insurance. Statutory Workers' Compensation and Employers' Liability of at least One Million Dollars (\$1,000,000) shall cover all Contractors staff while performing any work incidental to the performance of this Agreement.

4. **Professional Liability:** Professional Liability (Errors and Omission) Insurance appropriate to Contractor's profession, with a limit of liability not less than One Million Dollars (\$1,000,000) per occurrence or claim and Two Million Dollars (\$2,000,000) aggregate to cover all design and engineering services rendered by Contractor pursuant to the Agreement. Coverage must commence from the first day that Contractor or any of its Subcontractors provided any design or engineering services in connection with the Project.

5. **Builder's Risk/Course of Construction Insurance Is ____ OR Is Not**

X **Required by Risk Management:** The Contractor shall be responsible for all loss, damage or destruction whatsoever to the work called for by this Contract until the approval of a Notice of Completion or acceptance of the Work if no Notice of Completion is to be recorded.

The Contractor shall secure "All Risk" type of builder's Risk Insurance of the type covering one hundred percent (100%) of the value of the work performed under this Contract (the value is presumed to be the Contract amount unless otherwise stated in Supplemental Conditions) and all materials, equipment, or other items to be incorporated therein while the same are located at the construction site, a bonded warehouse, or its place of manufacture. At any time, the policy shall cover the value of the work completed. The policy shall cover hazards including the losses due to fire, explosion, hail, rain, lightning, flood (separate insurance as needed), vandalism, malicious mischief, wind, collapse, aircraft, and smoke.

The policies providing such insurance shall name the City as a loss payee as its respective interests may appear, and certified copies of such policies shall be filed with the City. The maximum deductible allowable under the Builder's All Risk policy shall be five percent (5%) of the Contract amount.

Builder's Risk Insurance is not required for coverage of losses in excess of five percent (5%) of the Contract amount for damages resulting from earthquake in excess of a magnitude of 3.5 on the Richter scale, or tidal waves. Coverage in the amount of five percent (5%) of the Contract amount for such losses is required.

6. **Pollution Coverage:** ~~Contractor shall procure pollution liability coverage or other insurance covering claims for bodily injury or property damage arising out of the abatement, removal, storage, transportation, or other exposure to hazardous materials or~~

~~pollutants, in limits not less than Two Million Dollars (\$2,000,000). Contractor shall add the City and all parties required to be indemnified by Contractor as additional insured on all pollution liability policies.~~ Pollution Coverage is not required.

7. **Higher Coverage Limits:** If Contractor maintains higher coverage limits than the amounts shown above, then the City requires and shall be entitled to coverage for the higher coverage limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City.

8. **Claims Made Coverage:** Liability insurance coverage may not be written on a “claims made” or modified occurrence basis. The Certificate of Insurance must clearly provide that the coverage is on an “occurrence” basis.

5-1.24 **OTHER INSURANCE PROVISIONS.**

A. The requirements of the Standard Specifications as to types and limits of insurance coverage to be maintained by the Contractor, and any approval of insurance by the City, are not intended to, and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by the Contractor pursuant to the Contract, including, but not limited to, the provisions concerning indemnification, nor preclude the City from taking any other action available to it under any other provision of the Contract or law.

B. The City acknowledges that some insurance requirements contained in these Standard Specifications may be fulfilled by self-insurance on the part of the Contractor. However, this shall not in any way limit liabilities assumed by Contractor under the Contract. Any self-insurance must be approved in writing by the City, in its sole discretion and shall not reduce the limits of liability. Any deductibles or self-insured retentions (“SIR”) must be declared on the certificate of insurance and approved by City in writing. Policies containing any

SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or City. City reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

C. The Contractor agrees to include in its contracts with all subcontractors the same requirements and provisions of this Contract, including the indemnity and insurance requirements, to the extent they apply to the scope of the subcontractor's work. Furthermore, the Contractor shall require its subcontractors to agree to be bound to the Contractor and the City in the same manner and to the same extent as the Contractor is bound to the City under this Contract. Additionally, the Contractor shall obligate its subcontractors to comply with these same provisions with respect to any tertiary subcontractor, regardless of tier. A copy of the City's indemnity and insurance provisions will be furnished to the subcontractor or tertiary subcontractor upon request. Alternatively, the Contractor may insure subcontractor(s) under its own policy.

D. The City, its officers, agents, employees, and volunteers are to be covered as insureds with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Contractor; and with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment furnished in connection with such work or operations. Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under California Insurance Code Section 11580.04.

E. The limits of insurance required in this Contract may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be

endorsed to contain a provision that such coverage shall also apply on a primary and noncontributory basis for the benefit of the City (if agreed to in a written contract) before the City's own insurance shall be called upon to protect it as a named insured.

F. The insurance procured by Contractor shall be subject to the approval of the City, but any acceptance of insurance certificates by the City shall in no way limit or relieve Contractor of its duties and responsibilities under the Agreement.

G. Contractor shall be responsible for all premiums, deductibles, and self-insured retention applicable to the insurance it is required to procure under the Contract. All deductibles or self-insured retentions over five hundred thousand dollars (\$500,000) must be approved by the City, in writing. Contractor shall be responsible for all deductibles, self-insured retention payments, and/or increased premiums incurred if the City's policies of insurance are forced to cover damages or respond to claims for which Contractor or its Subcontractors were obligated to provide insurance under the Contract.

H. Failure of the City to enforce in a timely manner any of the requirements of these insurance provisions shall not act as a waiver to enforcement of any of these provisions at a later date.

I. Contractor's indemnity obligations shall not be limited by these insurance provisions and shall survive the expiration of the Contract and the insurance provisions of the Contract shall likewise not be limited by the indemnity provisions of the Contract.

J. THE CITY RESERVES THE RIGHT TO WITHHOLD ANY PROGRESS PAYMENTS TO THE CONTRACTOR IN THE EVENT OF NONCOMPLIANCE WITH ANY INSURANCE REQUIREMENTS.

Bond No. _____
Premium \$ _____

**PUBLIC WORKS
FAITHFUL PERFORMANCE BOND**

(Project: Cresthaven Tennis Court Renovation)

WHEREAS, the City of Roseville ("CITY") has awarded a bid and contract to _____
as contractor ("PRINCIPAL") for the public work described as _____ (the "WORK"). The
contract ("AGREEMENT"), for the public work described above, and all of its terms and
conditions are incorporated by reference and made a part hereof; and

WHEREAS, the PRINCIPAL is required to furnish a bond in connection with the
AGREEMENT guaranteeing its faithful performance; and

NOW, THEREFORE, we the undersigned PRINCIPAL and _____
_____, a _____, admitted
and duly authorized to transact business under the laws of the State of California, as
SURETY ("SURETY"), are held and firmly bound unto the CITY or its successors and
assigns in the sum of _____
dollars (\$ _____) (which amount is not less than 100% of the
AGREEMENT price) to be paid to the CITY or its successors and assigns; and for which
payment, well and truly to be made, we bind ourselves, our heirs, executors and
administrators, successors or assigns jointly and severally, firmly by these presents.

The condition of this obligation is such that if the PRINCIPAL, or its heirs,
executors, administrators, successors or assigns, shall abide by, and in all respects
promptly and faithfully perform the covenants, conditions and provisions in said
AGREEMENT and any alteration thereof made as therein provided, notice of which
alterations to Surety being hereby waived, on its part to be kept and performed at the
time and in the manner therein specified, and in all respects according to their true
intent and meaning, and shall indemnify and save harmless CITY, its officers, agents,
employees, volunteers as therein stipulated, then this obligation shall be null and void;
otherwise, this obligation shall be and remain in full force and effect.

As condition precedent to the satisfactory completion of the contract, the
obligation of the PRINCIPAL and SURETY under this Bond shall remain in effect for a
period of one (1) year after the completion and acceptance of the WORK. During that
time, if the PRINCIPAL, its heirs, executors, administrators, successors or assigns fails
to make full, complete and satisfactory repair and replacement or totally protect the
CITY from any loss or damage made evident during that year which results from or is
caused by either defective materials or faulty workmanship in the prosecution of the
WORK, then the obligation shall remain in full force and effect. However, anything in

this paragraph to the contrary notwithstanding, the obligation of the SURETY shall continue so long as any obligation of the PRINCIPAL remains.

No prepayment or delay in payments, and no change, extension, addition or alteration of any provision of the AGREEMENT or in the specifications agreed to between the PRINCIPAL and the CITY, or any forbearance on the part of the CITY shall operate to relieve the SURETY. The SURETY hereby waives the provisions of Section 2819 of the California Civil Code. The SURETY waives all rights of subrogation against the CITY or any person employed by the CITY. If the contract price increases by the issuance of change orders, the amount specified in this bond shall increase by the same amount.

Whenever PRINCIPAL shall be and declared by CITY to be in default under the AGREEMENT, SURETY shall promptly remedy the default, or shall promptly do one of the follow at CITY's election:

1. Undertake through its agents or independent contractors, reasonably acceptable to CITY, to complete the AGREEMENT in accordance with its terms and conditions and to pay and perform all obligations of PRINCIPAL under the AGREEMENT, including without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages.
2. Reimburse CITY for all costs CITY incurs in completing the AGREEMENT, and in correcting, repairing or replacing defects in materials or workmanship and/or materials and workmanship which do not conform to the specifications in the AGREEMENT.

SURETY's obligations hereunder are independent of the obligations of any other surety for the performance of the AGREEMENT, and suit may be brought against SURETY and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing CITY's rights against the others.

No right of action shall accrue on this bond to or for the use of any person or corporation other than CITY or its successors or assigns.

As part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by CITY in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

[SIGNATURES NEXT PAGE]

For Council Approval
Not For Bidding

IN WITNESS WHEREOF, this instrument has been duly executed by the
PRINCIPAL and SURETY above-named, on the ____ day of _____,
20____.

PRINCIPAL:

SURETY:

BY: _____

BY: _____

PRINT NAME: _____

PRINT NAME: _____

PRINT TITLE: _____

PRINT TITLE: _____

AND

MAILING ADDRESS:

BY: _____

PRINT NAME: _____

PRINT TITLE: _____

*(Notarization by Surety and copy of
Power of Attorney required.)*

APPROVED AS TO FORM:

BY: _____
City Attorney

**For Council Approval
Not For Bidding**

Bond No. _____
Premium \$ _____

**PUBLIC WORKS
LABOR AND MATERIALS PAYMENT BOND**
(Project: Cresthaven Tennis Court Renovation)

WHEREAS, the City of Roseville ("CITY"), has awarded a bid and contract to _____
as contractor ("PRINCIPAL"), for the public work described as _____
_____ (the "WORK"). The
contract ("AGREEMENT"), for the public work described above, and all of its terms and
conditions are incorporated by reference and made a part hereof; and

WHEREAS, the PRINCIPAL is required to furnish a bond in connection with the
AGREEMENT guaranteeing payment of persons who provide labor and material; and

NOW, THEREFORE, we the undersigned PRINCIPAL and _____
_____, a _____, admitted
and duly authorized to transact business under the laws of the State of California, as
SURETY ("SURETY"), are held and firmly bound unto the CITY or its successors and
assigns in the sum of _____
dollars (\$_____) (which amount is not less than 100% of the
AGREEMENT price) to be paid to the CITY or its successors and assigns; and for which
payment, well and truly to be made, we bind ourselves, our heirs, executors and
administrators, successors or assigns jointly and severally, firmly by these presents.

The condition of the obligation is such that if the PRINCIPAL, its subcontractors,
heirs, executors, administrators, successors or assigns fails to pay any of the persons
named in Section 8004 or 9100 of the Civil Code of the State of California, or the
amounts due under the Unemployment Insurance Code of the State of California, or any
amounts required to be deducted, withheld and paid over to the Employment
Development Department from the wages of employees of the PRINCIPAL and its
subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with
respect to work or labor performed by any such claimant, that the SURETY will pay for
the same, in an amount not exceeding the sum specified in this bond, and also, in case
suit is brought upon the bond, shall pay reasonable attorneys' fees, to be fixed by the
Court.

This bond shall inure to the benefit of any and all persons, companies, and
corporations entitled to file a Stop Payment Notice pursuant to the provisions of Section
9350 et seq. of the Civil Code of the State of California, so as to give a right of action to
them or their assigns in any suit brought upon this bond.

For Council Approval
Not For Bidding

No prepayment or delay in payments, and no change, extension, addition or alteration of any provision of the AGREEMENT or in the specifications agreed to between the PRINCIPAL and the CITY, or any forbearance on the part of the CITY shall operate to relieve the SURETY. The SURETY hereby waives the provisions of Section 2819 of the California Civil Code. The SURETY waives all rights of subrogation against the CITY or any person employed by the CITY. If the contract price increases by the issuance of change orders, the amount specified in this bond shall increase by the same amount.

As part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by CITY in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

IN WITNESS WHEREOF, this instrument has been duly executed by the PRINCIPAL and SURETY above-named, on the _____ day of _____, 20__.

PRINCIPAL:

SURETY:

BY: _____

BY: _____

PRINT NAME: _____

PRINT NAME: _____

PRINT TITLE: _____

PRINT TITLE: _____

AND

MAILING ADDRESS:

BY: _____

PRINT NAME: _____

PRINT TITLE: _____

*(Notarization by Surety and copy of
Power of Attorney required.)*

APPROVED AS TO FORM:

BY: _____
City Attorney

For Council Approval
Not For Bidding

CITY OF ROSEVILLE

GENERAL CONDITIONS

FOR

BUILDINGS AND GROUNDS

GC

For Council Approval
Not For Bidding

**CITY OF ROSEVILLE
GENERAL CONDITIONS
FOR
BUILDINGS AND GROUNDS**

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**For Council Approval
Not For Bidding**

SECTION 1

DEFINITIONS AND TERMS

1-1.01 **GENERAL.** When the following abbreviations and terms or pronouns in place of them appear in the Contract Documents, the intent and meaning shall be interpreted as provided in this Section 1.

1-1.02 **ACCEPTANCE.** Formal Acceptance by resolution by the Roseville City Council of the Contract when completed in all respects in accordance with the Contract Documents and any modifications previously approved.

1-1.03 **ADDENDUM.** Written interpretation or revision to any of the Contract Documents issued by the City before the bid opening.

1-1.04 **AS-BUILT DOCUMENTS, AS-BUILT DRAWINGS AND RECORD DOCUMENTS.** As-Built Documents, As-Built Drawings and Record Documents are all contract documents modified to reflect changes during the construction phase. Specifically, As-Built Documents/Drawings are a revised set of drawings submitted by the Contractor upon Final Completion of a project. They reflect changes made in the Specifications and Working Drawings during the construction process, and show the exact dimensions, geometry, and location of all elements of the work completed under the Contract. Record Documents, on the other hand, are compiled by the Engineer or Architect based on the As-Built Documents/Drawings submitted by the Contractor. They reflect the Engineer or Architect's concurring review of what changes were denoted, why they were made and where they occurred and create a record set of drawings.

1-1.05 **ASSESSMENT.** A cost imposed on the Contractor for non-compliance

with certain contractual requirements.

1-1.06 **BENEFICIAL OCCUPANCY.** The taking possession of a portion of the Work by the City for its use and/or occupancy on other than a temporary or emergency basis.

1-1.07 **BID GUARANTY.** The cashier's, certified check, irrevocable standby letter of credit, deposit of securities, or Bidder's Bond, accompanying the bid submitted by the Bidder, as a guaranty that the Bidder will enter into an agreement with the City for the performance of the Work, if the Agreement is awarded to Bidder, and the Bidder will submit the required Contract Bonds and Certificate of Insurance. Also referred to as the Bidder's Security.

1-1.08 **BIDDER.** Individual, firm, partnership, limited liability company, corporation, joint venture, or any combination thereof, submitting a Proposal for the Work, acting directly, or through a duly authorized representative.

1-1.09 **BIDDING DOCUMENTS.** Includes the Notice to Bidders, Bidding Requirements, Contract Conditions, Drawings, and Addenda.

1-1.10 **CHANGE ORDER.** Any written order to the Contractor directing an addition, deletion, or modification of the Work, or an adjustment in the Contract Price or Contract Time provided in the Contract Documents and issued after the Agreement has been signed.

1-1.11 **CITY.** The City of Roseville.

1-1.12 **CITY ATTORNEY.** The City Attorney of the City.

1-1.13 **CITY CLERK.** The City Clerk of the City.

1-1.14 **CLAIM.** A separate demand by Contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following: (a) a time extension, including, without limitation, for relief for damages or penalties for delay assessed by

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the City; (b) payment by the City of money or damages arising from work done by, or on behalf of, Contractor pursuant to the Contract Documents and payment for which is not otherwise expressly provided or to which Contractor is not otherwise entitled; and (c) payment of an amount that is disputed by the City.

1-1.15 **CONSTRUCTION SCHEDULE.** A list or graphic display of construction activities required for completing the Work, in a format required by the Contract Documents. The duration, start and finish date, and sequence of significant activities, critical path, float and milestones must be indicated in the Construction Schedule.

1-1.16 **CONTRACT OR AGREEMENT.** The written agreement relating to the Work to be performed, the labor, materials, and equipment to be furnished, and the payment to be made therefor. The Agreement/Contract is part of and incorporates all of the Contract Documents.

1-1.17 **CONTRACT CONDITIONS.** Includes the General Conditions, Supplemental Conditions, and Specifications.

1-1.18 **CONTRACT DOCUMENTS.** Includes those documents that form the basis of the Contract, including but not limited to, Bidding Documents, the Bid or Proposal, Contract Bonds, the Contract, all required insurance certificates or endorsements, all bonds, all required certifications or statements, Change Orders, any Contract Amendment, any City Standard which is incorporated by reference and these City of Roseville General Conditions for Buildings and Grounds.

1-1.19 **CONTRACT DRAWINGS.** The official drawings including plans, elevations, sections, detail drawings, diagrams, plated, General Notes, information and schedules thereon, or exact reproductions thereof, showing the location, character, dimension, and details

of the Work. The Contract Drawings include any drawings or plates bound within the Supplemental Conditions.

1-1.20 **CONTRACT PRICE.** The total compensation to be paid to the Contractor in accordance with the terms of the Agreement.

1-1.21 **CONTRACT TIME.** The number of Days, or portion thereof, allowed for completion of the Work, including all authorized time extensions. The effective date for commencement of the Work specified in the Notice to Proceed shall define the beginning of the Contract Time.

1-1.22 **CONTRACTOR.** Individual, firm, partnership, limited liability company, corporation, joint venture, or any combination thereof, who has entered into the Agreement with City.

1-1.23 **DAY OR DAYS.** Unless otherwise designated, Day or Days as used in the Contract Documents will be understood to mean calendar Day or Days.

1-1.24 **DEPARTMENT.** The Department for Contract Administration, as identified in the Supplemental Conditions.

1-1.25 **DIRECT COSTS.** Those cost items (including labor, materials, equipment and any subcontractor's work) that are used in the actual performance of, and are specifically and uniquely attributable to the Work or changed Work. Direct Costs do not include Overhead. Direct Costs only include the following:

A. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by City and Contractor. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include salaries and

wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, sick leave, vacation and holiday pay applicable thereto. Such employees may include superintendents and foremen at the site. The expenses of performing work after regular working hours, on Saturday, Sunday or legal holidays shall be included in the above only to the extent authorized by City in writing.

B. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and suppliers' field services required in connection therewith. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to City, and Contractor shall make provisions so that they may be obtained.

C. Payments made by Contractor to the subcontractors for work performed by subcontractors. If required by City, Contractor shall obtain competitive bids from subcontractors acceptable to Contractor and shall deliver such bids to City who will then determine which bids will be accepted. If a subcontract provides that the subcontractor is to be paid on the basis of cost of the work plus a fee, the subcontractor's cost of the work shall be determined in the same manner as Contractor's cost of the work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

D. Costs of special consultants (including engineers, architects, testing laboratories, surveyors, and accountants) employed for services specifically, and only, related to the Work.

E. Supplemental costs including the following:

1. The proportion of necessary transportation, travel and subsistence

expenses of Contractor's employees incurred in discharge of duties connected with the Work.

2. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value of such items used but not consumed which remain the property of Contractor.

3. Rentals of all construction equipment and machinery and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by City, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof, all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

4. Sales, consumer, use or similar taxes related to the Work, and for which Contractor is liable, imposed by laws and regulations.

5. The cost of utilities (including the meter and all associated installation costs), fuel and sanitary facilities at the site.

6. Cost of premiums for additional bonds and insurance required because of changes in the Work.

1-1-26 **DIRECTOR.** Director of the Department for Contract Administration or his or her designee.

1-1.27 **EMERGENCY.** Any sudden generally unforeseen occurrence (such as a fire, flood, storm, earthquake, civil disorder, or other natural and/or man-made disaster) that has the potential to adversely affect the safety of life, the Work, and/or adjacent property; to interrupt contracts essential to the performance of the Work; and/or to cause catastrophic failure of City

equipment and/or facilities.

1-1.28 **ENGINEER OR ARCHITECT.** Professional Engineer or Architect designated for a particular project responsible for signing and sealing the permit drawings, interpretation of the drawings where ambiguities exist, review of requests for information, design Change requests and Shop Drawings, resolution of errors and omissions, and finalization of Record Documents.

1-1.29 **FINAL COMPLETION.** When the project has been completed according to the terms and conditions set forth in the Contract Documents. Final Completion is not the same as Acceptance.

1-1.30 **FORCE ACCOUNT.** Payment by force account shall mean payment on the basis of the Contractor's time and materials.

1-1.31 **GENERAL NOTES.** The written instructions, provisions, conditions or other requirements appearing on the Contract Drawings and so identified thereon, which pertain to the performance of the Work.

1-1.32 **INSTALLATION, INSTALL.** Completely assembling, erecting, and/or connecting materials, parts, components, supplies, and related equipment specified or required for the completion of the Work.

1-1.33 **LABORATORY.** Established professional laboratories authorized by the City to test materials and Work involved in the Contract.

1-1.34 **LEGAL HOLIDAYS.** Those days designated as Federal holidays or declared by the City, or otherwise specified in the Contract Documents.

1-1.35 **LIQUIDATED DAMAGES.** The amount prescribed in the Contract Documents to be paid to the City or to be deducted from any payments due or to become due the

Contractor for each day's delay in completing the whole or any specified portion of the Work beyond the time allowed in the Supplemental Conditions.

1-1.36 **NOTICE OF COMPLETION.** A legal notice filed by the City with the Placer County Recorder's Office stating that construction has been completed and accepted by the City.

1-1.37 **NOTICE TO PROCEED.** A written notice given by the City to the Contractor fixing the date on which the Contract Time will commence to run.

1-1.38 **NOTICE OF TERMINATION.** Written notice from the City to the Contractor and/or its Surety terminating the Agreement, or a portion thereof, either for convenience of the City or for default due to the Contractor's failure to perform its contractual obligations.

1-1.39 **OVERHEAD.** Business or administrative expenses (including but not limited to office expenses, administrative staff, rent, insurance, utilities) not chargeable to a particular part of the Work. The term "Overhead" shall include all of the following:

A. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor whether at the Work Site or in Contractor's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications, all of which are to be considered administrative costs covered by the Contractor's fee.

B. Expenses of Contractor's principal and branch offices other than Contractor's office at the site.

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C. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

D. Cost of premiums for all bonds and for all insurance whether or not Contractor is required by the Contract Documents to purchase and maintain the same, except as provided in section 1-1.25.

E. Other overhead or general expense costs of any kind.

1-1.40 **PREMISES.** Shall mean the area within construction easements, easements, rights of entry and City owned property which surrounds the Work Site, limited by the property lines thereof. In some cases Premises may coincide with the Work Site.

1-1.41 **PROFESSIONAL ENGINEER.** An engineer licensed by the Board of Registration for Professional Engineers, State of California.

1-1.42 **PROJECT MANUAL.** A book containing all Contract Documents.

1-1.43 **PROPOSAL FORMS.** The approved forms upon which the City requires that each Bidder submit its bid with regard to the Agreement.

1-1.44 **REQUEST FOR INFORMATION (RFI).** A document issued by the Contractor requesting information concerning the Contract Documents.

1-1.45 **SAFETY.** Includes the practice of identifying potential hazards, assessing their risk, taking corrective action where possible, including and providing control measures such as engineering design, written procedures, and the personal protective equipment for workers in order to eliminate or reduce the risk for exposure in the workplace.

1-1.46 **SCHEDULE OF VALUES.** The breakdown of the Contract Price that will serve as the basis for Contractor's Applications of Payment. Any lump-sum bid item

included within the Contract Price will be apportioned among values relating to specific components of the Work covered by said lump sum.

1-1.47 **SHOP DRAWINGS.** Drawings, plans, diagrams, schedules, and other data specifically prepared and submitted to the City by the Contractor, showing in detail: (a) the proposed fabrication and assembly of a special component of the Work; and (b) the Installation (form, fit and attachment details) of a special component of the Work. Shop Drawings shall be deemed to include Working Drawings, Product Data, literature, and applicable performance and test data.

1-1.48 **SPECIFICATIONS.** The technical Specifications for the Work prepared by the Director or an Engineer or Architect describing in detail the nature of the Work, its components, any performance standards, and how the Work is to be constructed.

1-1.49 **SUBCONTRACTOR.** Any individual, firm, partnership, limited liability company, corporation, joint venture, or combination thereof, other than employees of the Contractor, engaged by the Contractor to furnish services, labor, equipment and materials for a portion of the Work.

1-1.50 **SUBMITTALS.** Those documents required to be submitted by the Contractor for review by the City in accordance with the Contract Documents.

1-1.51 **SUPPLEMENTAL CONDITIONS.** The Supplemental Conditions are specific clauses modifying or supplementing these General Conditions.

1-1.52 **SUPPLIER.** Any individual, firm, partnership, limited liability company, corporation, joint venture, or combination thereof, other than employees of the Contractor, that supplies a tangible product as a portion of the Work, with services usually limited to delivery and/or required testing, and with manufacturing, fabrication, or production facilities located off

the Work Site.

1-1.53 **WORK.** The furnishing of all labor, and the furnishing and Installing of all materials, articles, supplies and equipment as specified, designated, or required by the Contract Documents.

1-1.54 **WORK SITE.** All or portion of the Premises that the Work is limited to as shown on the Contract Drawings or designated by the Director. Public streets are not included unless Work is being done within the street right-of-way.

1-1.55 **WORKING DRAWINGS.** Original drawings prepared by the Contractor and/or its Subcontractors or Suppliers, of any tier, illustrating Work required for construction that will not become an integral part of the completed Work. This includes, but is not limited to, drawings for temporary structures such as decking, bulkheads, excavation supports, utility support, groundwater control, forming, falsework, access roads, staging areas, staging plans, and diversion plans. A Working Drawing is one type of a Shop Drawing.

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SECTION 2

CONTROL AND SCOPE OF THE WORK

2-1.01 **AUTHORITY OF DIRECTOR.** The Contract shall be performed in a manner satisfactory to the Director who shall decide all questions which may arise as to the quality or acceptability of materials furnished and Work performed and as to the manner of performance and rate of progress of the Work; all questions which may arise as to the interpretation of the Contract Documents; all questions as to the acceptable fulfillment of the Contract on the part of the Contractor; and all questions as to compensation. The Director shall have authority to enforce and make effective such decisions and orders in the event the Contractor fails to promptly carry out the same.

2-1.02 **INTENT OF CONTRACT DOCUMENTS.** The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intent of the Contract Documents is to describe the details for the construction and completion of the Work. Where the Contract Documents describe portions of the Work in general terms, but not in complete detail, it is understood that only the best general practice shall be followed and that only materials and workmanship of the best quality are to be used. Any Work, materials, or equipment that are customarily provided, or that are reasonably inferable from the Contract Documents as being required to produce the intended result, shall be supplied, whether or not specifically called for. When words, which have a well-known technical or trade meaning are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning. Unless otherwise specified, the Contractor shall furnish all labor, materials, tools, equipment, and incidentals, and do all the Work involved in executing the Contract in a

satisfactory and workmanlike manner.

Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, laws, or regulations in effect on the first published date of the Notice to Contractors, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of City or Contractor, or any of their consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to City, or City's designated representative, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to other provisions of the Contract Documents.

The Contract Documents are divided into parts, divisions, sections and articles for convenience, organization and reference. Generally, there has been no attempt to divide the Specifications sections into work performed by the various building trades, work by separate Subcontractors, or work required for separate facilities in the project.

2-1.03

EXAMINATION AND VERIFICATION OF CONTRACT

DOCUMENTS. The Contractor shall thoroughly examine and become familiar with all of the various parts of the Contract Documents and shall determine the nature and location of the Work, the general and local conditions (including applicable laws) and all other matters which can in any way affect the cost, progress or performance of the Work under this Agreement. Failure to make an examination necessary for this determination shall not release the Contractor from the obligations of the Agreement. No oral agreement or conversation with any officer, or employee

of the City, or with the City's designated representative either before or after the execution of the Agreement, shall affect or modify any of the terms or obligations contained in the Contract Documents.

2-1.04 **CONTRACT DRAWINGS.** The Contract Drawings consist of general drawings and show such plans, elevations, sections, details and schedules as are necessary to give a graphic and pictorial description of the contemplated construction. All authorized alterations affecting the requirements and information given on the Contract Drawings shall be in writing.

2-1.05 **COORDINATION AND INTERPRETATION OF CONTRACT DOCUMENTS.** All Contract Documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary, and to describe and provide for a complete Work.

In the event of inconsistencies between requirements contained in different components of the Contract Documents, the precedence of the Contract Documents shall be as follows to resolve conflicts:

1. Change Orders
2. The Contract (including Addenda)
3. The Supplemental Conditions
4. Specifications
5. Contract Drawings
6. The General Conditions

Should it appear that the Work to be done or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the Contractor shall submit a

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Request for Information (“RFI”) to the Director for such further explanations as may be necessary and shall conform to the written explanation given as if part of the Contract Documents. The decisions of the Director shall be final.

Contractor shall anticipate that it will be necessary to prepare and submit RFIs regarding the Contract Documents. The City will respond to each RFI by no later than fourteen (14) Days after receipt of the RFI, unless the RFI is of significant complexity. Furthermore, in the event that there are numerous RFIs pending, Contractor shall cooperate with the City in establishing a priority for responding to the RFIs, and potentially some RFIs may be responded to beyond the fourteen (14) Day period.

Each RFI prepared by Contractor shall be full and complete. Contractor shall prepare RFIs so as to not cause any delay to the progress of the Work and to not cause any impact to Contractor’s labor productivity in the field. Contractor shall not assert any Claims for delay or interference against the City if Contractor fails to timely submit any RFI to the City, after consideration of the response period allowed for by the City.

The response to an RFI shall not, by itself, constitute a writing that authorizes Contractor to perform any Work that causes an adjustment to either the Contract Price or the Contract Time. If Contractor believes that any response to any RFI should constitute a compensable change, Contractor shall provide a Notice of Potential Claim as provided in Section 7-1.03, below. Contractor’s failure to provide the required written notice shall constitute a waiver of the Contractor’s right to seek a compensable change based on the RFI response.

The Contractor shall examine all Contract Documents; shall verify all figures in the Contract Documents before laying out the Work; shall promptly notify the City of all errors, inconsistencies, and/or omissions that it discovers; and, in instances where such non-

conformities are discovered, shall obtain specific instructions in writing from the City before proceeding with the Work. Contractor's performance of any Work affected by such non-conformities prior to the City's decision shall be at the Contractor's risk. Any Work that is customarily provided or that is reasonably inferable shall not relieve the Contractor from performing such work at no additional expense and/or delay, and such Work shall be performed as if fully set forth in the Contract Documents.

2-1.06 **INDEPENDENT CONTRACTOR STATUS.** The Contractor shall independently perform all Work required by the Contract Documents and shall not be considered as an agent or employee of the City, nor shall the Contractor's Subcontractors or employees be considered as subagents of the City.

The Contractor and Contractor's Subcontractors shall be licensed in accordance with the laws of the State of California and as more particularly described in the bidding documents or elsewhere in the Contract Documents.

2-1.07 **ORDER OF WORK.** When required by the Contract Documents, the Contractor shall follow the sequence of operations set forth therein. Full compensation for conforming to such requirements will be considered as included in the prices paid for the various Contract items of work, and no additional compensation will be allowed therefor.

2-1.08 **SUBMITTALS.** It shall be the Contractor's responsibility to timely submit, so as to cause no delay in the Work, all Shop Drawings, descriptive data, manuals, instructions, affidavits, samples for the various trades as required by the Supplemental Conditions and Specifications, and offers of alternatives, if any. Such Submittals shall be checked and coordinated by the Contractor with the Work of other trades involved before they are submitted to the Director for examination.

The Contractor shall deliver at least one (1) electronic copy of the Submittals to the Director, and one (1) hard copy if requested. Work requiring the submittal of working drawings, descriptive data or samples shall not begin prior to approval of said Submittal by the Director.

The time allowed for review of each Submittal will be as indicated in the Supplemental Conditions. Review time will start upon receipt of the Submittal by the Director and will end upon the Director's mailing of the Submittals to the Contractor. Defective, incomplete or partial Submittals will be returned to the Contractor unreviewed.

Submittals shall be made by a letter of transmittal that shall contain a list of all matter submitted and identification of all variations from the Contract Documents contained in the Submittal. The letter and all items accompanying the same shall be fully identified as to project name and location, Contractor's name, district, county, and Contract number, with ample cross-references to the Contract Documents, to facilitate identification of items and their location in the Work.

All Shop Drawings and supporting data, catalogs, schedules, shall be submitted as the instruments of the Contractor, who shall be responsible for their accuracy and completeness. These Submittals may be prepared by the Contractor, Subcontractors, or Suppliers, but the Contractor shall ascertain that Submittals meet all of the requirements of the Contract Documents, while conforming to structural, space, and access conditions at the point of Installation. The Contractor shall check all Submittals before submitting them to the Director.

2-1.08A **SHOP DRAWINGS.** The Contractor shall submit an electronic copy (searchable PDF) of all Shop Drawings required by the Supplemental Conditions or Specifications, and one (1) hard copy, if requested by the Director. Shop Drawings shall also be provided separately in AutoCAD format using the latest version of AutoCAD. An electronic

copy will be returned to the Contractor either approved for use, as demonstrated by a stamp, or returned for correction and resubmittal. Materials, colors and/or samples will not be returned to the Contractor. Shop Drawings include any drawing, which requires execution by a draftsman as distinguished from printed matter. The size of Shop Drawings shall not exceed twenty-four inches (24") by thirty-six inches (36").

2-1.08B **DESCRIPTIVE DATA.** The Contractor shall submit an electronic copy (searchable PDF) of each set of manufacturer's brochures or other data required by the Supplemental Conditions or Specifications, and one (1) hard copy, if requested by the Director. The City will examine such Submittals and return either an electronic copy or a hard copy approved for use or returned for correction and resubmittal.

2-1.08C **SAMPLES.** The Contractor shall submit samples of articles, materials or equipment as required by the Supplemental Conditions or Specifications. The Work shall be in accordance with the approved samples. Samples shall be removed from City property when directed or may be incorporated in the Work if approved by the Director. Samples not removed by the Contractor will become the property of the City or, at the City's option, will be removed or disposed of by the City at the Contractor's expense.

2-1.08D **MANUALS, INSTRUCTIONS AND AFFIDAVIT.**

A. **Manuals and Instructions.** Where operation and maintenance manuals are required by the Supplemental Conditions, the Contractor shall submit two (2) sets of manuals, suitably bound, along with two (2) electronic copies in an approved format, to the Director within forty-five (45) Days after favorable review of the equipment or facilities. If operation and maintenance manuals are approved to be provided in PDF format, text shall be provided in searchable PDF format, making proper use of PDF for headings and heading levels,

paragraphs, tables, and lists. Submitted operation and maintenance manuals shall be a collected, organized, and indexed set of bookmarked PDF documents comprising each operation and maintenance manual that corresponds to a hardcopy binder. All manuals shall be marked to indicate the specific equipment furnished for this project and shall include at a minimum:

1. Equipment summary form
2. Cover/Title page
3. Table of contents
4. Operating procedures including start-up, shutdown, normal operation, all operating modes, emergency shutdown, and safety precautions
5. Lubrication instructions (if required)
6. Preventative maintenance procedures
7. Troubleshooting and corrective maintenance procedures
8. Reinstallation instructions
9. Overhaul instructions (if applicable)
10. Parts identification list with exploded view and associated cross references
11. Recommended spare parts list
12. Operator safety requirements
13. Electrical and control system wiring drawings, including panel wiring control (ladder) diagrams, logic diagrams, loop diagrams, and interconnection diagrams
14. Panel layout and assembly drawings

15. Mechanical drawings
16. Printouts of all software programs and configuration files
17. Factory and field test procedures and results

Operation and maintenance manuals for complex equipment shall also include:

18. Alternate specified operating modes
19. Emergency shutdown instructions
20. Normal shutdown instructions
21. Long term shutdown instructions

Operation and maintenance manuals for systems comprised of separate pieces of equipment shall include a system explanation of items 4, 7, 18, 19, 20, and 21 as well as the instructions for the separate pieces of equipment.

B. Affidavits. Where required in the Supplemental Conditions or Specifications, manufacturers of equipment shall provide field service as a part of this project. Equipment shall not be considered ready for full time operation until after the authorized factory-trained and qualified manufacturer's representative for the specific equipment has checked and adjusted the equipment and certified by written affidavit that the equipment has been properly Installed, tested, adjusted, lubricated, and calibrated, and is ready for full time operation. Acceptable affidavits shall be submitted prior to completion of the Work. Affidavits shall contain the following specific wording:

“The (Name of Equipment) has been properly installed, tested, adjusted, lubricated, and calibrated, and is ready for full time operation. The installation has been inspected and has been found to be in conformance with our (the manufacturer's) standards and requirements.”

No amplification, dilution, or modification of this specific wording will be permitted.

2-1.08E **ALTERNATIVES.** For convenience in designation in the Contract Documents, certain materials, articles, or equipment may be designated by a brand or a trade name or the name of the manufacturer together with catalog designation or other identifying information, hereinafter referred to generically as “designated by brand name.” Except in those instances where the product is designated to match others in use in a particular improvement, either completed or in the course of completion, an alternative material, article, or equipment which is of equal quality and of the required characteristics for the purpose intended may be proposed for use provided the Contractor complies with the following requirements:

A. The Contractor shall submit its proposal for an alternative in writing. Such request shall be made in ample time to permit review and approval without delaying the Work. The Contractor shall not be entitled to an adjustment of the Contract Time or an increase in the Contract Price based on any Contractor-proposed substitution.

B. No such proposal will be considered unless accompanied by complete information and descriptive data, necessary to determine the equality of the offered materials. The Contractor shall satisfy the Director as to the comparative quality, suitability, or performance of the offered material, articles, or equipment. In the event that the Director rejects the use of such alternative materials, articles, or equipment, then one of the particular products designated by brand name shall be furnished.

C. The burden of proof as to the quality and suitability of alternatives shall be upon the Contractor and it shall furnish all information necessary as required by the Director. The Director shall be the sole judge as to the quality and suitability of alternative articles or materials and such decisions shall be final. Where use of an alternative material

involves redesign of, or changes to, other parts of the Work, the cost and time required to effect such redesign or changes will be considered in evaluating the suitability of the alternative material. Cost of redesign by the City will be borne by the Contractor.

D. Whenever classification, rating or other certification by a body such as Underwriters Laboratories (UL) or the National Electrical Manufacturers Association (NEMA) is a part of the specification for any material, Contractor's request for use of alternative articles or materials shall be accompanied by reports from the listed or equivalent independent testing Laboratory indicating compliance with the Contract Documents. The cost of all testing required to prove equality of the material proposed shall be borne by the Contractor. Approval of an alternative shall be only for the characteristics or use named in such approval, and shall not be used to change or modify any requirement of the Contract Documents.

E. At its election, the City reserves the right to consider any Contractor proposed substitution as a Cost Reduction Proposal under Section 3-1.07 of these General Conditions in the event that there is a significant savings resulting from the substitution.

The Director will examine, with reasonable promptness, such Submittals, and return of Submittals to the Contractor shall not relieve the Contractor from responsibility for deviations and alternatives from the Contract Documents, nor shall it relieve the Contractor from responsibility for errors in the Submittals. A failure by the Contractor to identify in its letter of transmittal material deviations from the Contract Documents shall void the Submittal and any action taken thereon by the Director. When specifically requested by the Director, the Contractor shall resubmit such Shop Drawings, descriptive data and samples as may be required.

If any mechanical, electrical, structural, or other changes are required for the proper Installation and fit of alternative materials, articles, or equipment, or because of deviations from

the Contract, such changes shall not be made without the approval of the Director and shall be made without additional cost to the City.

2-1.09 **DISPOSAL OF MATERIAL OUTSIDE THE WORK SITE.** Unless otherwise stated elsewhere in the Contract Documents, the Contractor shall, at its own cost and expense, make its own arrangements for disposing of materials outside the Work Site.

Except when material is to be disposed of at a landfill or recycling center, when any material is to be disposed of outside the Work Site, the Contractor shall first obtain written permission from the City to dispose of the material at the intended location. The City's approval will be contingent upon the Contractor obtaining a written permit from the property owner on whose property the disposal is to be made. Prior to the disposal of any material at the intended location, the Contractor shall submit such permit or a certified copy thereof to the City, together with a written release from the property owner absolving the City from any and all responsibility related to the disposal of material on said property.

Disposal of Hazardous Materials must be done in accordance with all laws and regulations. Copies of all required regulatory documentation including copies of final manifests shall be supplied to the City.

2-1.10 **ACCESS TO THE WORK.** The Contractor shall satisfy itself that the jurisdictions through which its operations and haul routes pass will permit such operations with respect to the type of vehicle, laden weights, frequency and dimensions of loads, hours of operation and required traffic control. All necessary permits, licenses or bonds shall be obtained and paid for by the Contractor.

2-1.11 **TEMPORARY UTILITIES.** The Contractor shall make its own arrangements with utility companies for any temporary services it may require in performance of

the Work and shall pay all costs of these services directly to these utility organizations.

2-1.12 **UTILITY FACILITIES.** The Contractor shall protect from damage those utility facilities that are to remain in place, be Installed, relocated or otherwise arranged.

The Contractor's attention is directed to the possible existence of facilities not shown, and of facilities in a location different from that, which is indicated. The Contractor shall take steps to ascertain the exact location of all facilities prior to doing any Work, which may damage such facilities or interfere with their service. Where the location of a facility is indicated or inferred from the presence of visible facilities such as buildings, meters, and junction boxes, the Contractor shall make such excavations and explorations as are necessary to ascertain the correct location. Unless provided for elsewhere in the Contract Documents, the cost of such excavations and explorations will be considered as a part of the cost of other items of Work and no additional payment will be made. Such excavations and exploratory Work shall not entitle the Contractor to an extension of time.

If the Contractor discovers underground facilities not indicated or inferred from the Contract Documents, the Contractor shall immediately give the Director written notification of the existence of those facilities. The Contractor shall determine the exact location of the underground facilities and the cost of the work will be paid for in accordance with the Contract Documents. The underground facilities shall be protected from damage as directed by the Director and the cost of that work will be paid for as extra work. The Contractor shall, if directed by the Director, repair any damage, which may occur to the underground facilities. The cost of that repair work, not due to the failure of the Contractor to exercise reasonable care, will be paid for as extra work. Damage due to the Contractor's failure to exercise reasonable care shall be repaired at the Contractor's cost and expense.

Where it is determined by the City that the rearrangement of an underground facility, the existence of which is not shown on the Contract Drawings, is essential in order to accommodate the Work, the City will provide for the rearrangement of such facility by other forces or, when so ordered by Change Order, such rearrangement shall be performed by the Contractor and will be paid for as provided under a Change Order.

The Contractor shall be responsible for the maintenance of all utility facilities placed by the Contractor in temporary locations, and all utilities within the construction area not required to be relocated but which are required to be shored or supported during the construction period. The cost of such maintenance shall be borne by the Contractor, and no other compensation shall be due the Contractor for this Work.

The cost of providing and maintaining all necessary or required temporary structures, of making any necessary repairs, replacements, or similar operations, or furnishing indemnity or other bonds, if required, and all costs required by this Section shall be paid by the Contractor and shall be included in the prices bid in the schedule for other items of work.

2-1.13 **PRESERVATION AND CLEANING.** The Contractor shall clean up the Work at frequent intervals and at other times when directed by the Director. While finish Work is being accomplished, floors, Work areas and finished areas shall be kept clean, free of dust, construction debris and trash. Upon completion of the Work, the Contractor shall remove from the Premises its construction equipment and any waste materials not previously disposed of, leaving the Premises thoroughly clean and ready for final inspection.

2-1.14 **LIMITATIONS ON WORK SITE AND PREMISES.** The Contractor shall limit its construction operations to the Work Site unless otherwise shown on the Contract Drawings or specified. The Contractor shall perform no operation of any nature over or on the

Premises except such operations as are authorized by the Contract Documents or as authorized by the Director.

2-1.15 **DUST CONTROL.** During the performance of all Work under this Contract, the Contractor shall assume all responsibility for dust control and shall furnish all labor, equipment, and means required to carry out proper and efficient measures wherever and whenever dust control is necessary to prevent the operations from producing dust damage and nuisance to persons and property. Any claims resulting from dust damage or nuisance shall be borne solely by the Contractor. The Contractor shall comply with all applicable Air Quality Act requirements.

2-1.16 **SANITATION.** The Contractor shall provide sanitary facilities for all persons working on the Work.

2-1.17 **NIGHT WORK AND NORMAL WORKING HOURS.** Normal working hours at the construction site shall be between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday. Legal holidays are excluded. Certain utility connections and street operations are anticipated to require night Work by the Contractor during low usage periods. The Contractor may also be required to prosecute the Work at night if, at any time, the Director shall deem it necessary for the progress of the Work, or if emergencies arise. The Contractor shall promptly comply with any such requirements made in writing by the Director. The Contractor will also be permitted to Work at night if Contractor satisfies the Director of the need therefor, in order to maintain the required progress or protect the Work from the elements. Certain activities are required to be performed at night for nominal progress of the Work and/or are specified to be performed at night by other portions of the Supplemental Conditions. When required, ordered, or permitted to Work at night, the Contractor shall provide sufficient and

satisfactory lighting and other facilities therefor. The Contractor shall receive no extra payment for night Work, if specified or if required to be performed during the normal progress of the Work, but compensation shall be considered as having been included in the price stipulated for the Work.

If Contractor performs work during weekends, holidays or any non-normal work hours, Contractor shall pay for required City Inspectors.

2-1.18 **LINES AND GRADES.** Unless otherwise provided in the Supplemental Conditions, the Contractor shall lay out all Work, including structures and pipelines, and shall be responsible for any errors resulting therefrom. In all questions arising as to proper location of lines and grades, the Director's decision will be final.

As part of the bid price for the construction of the improvements, the Contractor shall provide and be responsible for the layout of all Work on this project. The Contractor shall provide all necessary surveys, field staking, and positioning for the construction of all components at the proper alignment, elevations, grades, and positions, as indicated on the Contract Drawings and as required for the proper operation and function. The Contractor shall stake its Work area limits. Contractor shall perform all construction staking using a land surveyor licensed in the State of California. Contractor shall provide a staking plan prior to commencement of Work for the City's review and maintain monuments, stakes, and marks, and shall update the plan as necessary. Director, or Director's designated representative, may verify the field condition. Errors or inconsistencies in the Contract Documents discovered by the Contractor shall be reported to the Director within twenty-four (24) hours and prior to constructive forms or related improvements. Any work Installed with this requirement shall be subject to removal and replacement at the Contractor's expense.

The Contractor's lay-out shall be based on existing structures, property lines, survey control, and bench marks established by the City. All structures and pipeline connections shall be Installed based on actual elevation of existing structures to which connections are made.

The Contractor shall supply such labor as required, at no extra charge, to aid and assist the Director in checking location and grades of the Work as set by the Contractor if the Director desires to perform this checking. This shall include moving materials and equipment located between monuments and the construction Work.

2-1.19 **ARCHEOLOGICAL DISCOVERIES.** Upon discovery of prehistoric or historic artifacts, or other indicators or examples of cultural resources discovered during the course of site preparation, grading, excavation, construction or other development activities, all operations within fifty feet (50') of the find shall cease until such time as the City provides the services of a qualified archeologist to evaluate the finds and recommend appropriate action.

Prehistoric materials can include flaked stone tools (e.g., projectile points, knives and choppers) or tool making debris of obsidian, chert, quartzite and other materials, culturally darkened soil (i.e., midden, which often contains heat affected rock, ash and charcoal, shellfish remains, and cultural materials), and stone milling equipment such as mortars, pestles and hand stones. Historic material may include wood, stone, concrete or adobe footings, walls and other structural remains; debris filled wells or privies; and deposits of wood, metal, glass, ceramics and other refuse.

2-1.20 **PRESERVATION OF MONUMENTS.** Any monuments or bench marks disturbed by construction operations shall be repaired per the City's standard and promptly re-established by a registered land surveyor or civil engineer. A plat for each monument shall be furnished to the Director after the plat has been recorded with the Placer

County Recorder's Office at no additional cost to the City. The recorded plat shall serve as a record of the re-establishment of said existing survey points.

2-1.21 **CONFORMITY WITH CONTRACT DOCUMENTS.** Work and materials shall conform to the lines, grades, cross sections, dimensions and material requirements, including tolerances, required by the Contract Documents. Although measurement, sampling and testing may be considered evidence as to such conformity, the City shall be the sole judge as to whether the Work or materials deviate from the Contract Documents. At its option, the City may elect to accept deviations from the Contract Documents with appropriate backcharge Assessments against the Contractor, and, if such an election is made, the City will provide written notice to the Contractor of such acceptance.

2-1.22 **FINAL CLEANUP.** Prior to final Acceptance of the Work, the Contractor shall thoroughly clean the Premises, remove all temporary structures built by or for the Contractor, and remove all equipment and surplus construction material and debris from the area. The entire project, before Acceptance by the City, shall be left in a neat and clean condition. All Work areas and temporary construction areas shall be returned to essentially the same conditions existing before the commencing of project construction.

2-1.23 **AS-BUILT DOCUMENTS AND DRAWINGS.** The Contractor shall maintain one set of the full size prints furnished by the City and mark thereon in color any deviations from plan dimensions, elevations, or orientations. Also, the Contractor shall locate on said prints, all underground facilities, such as piping, conduits and tanks by accurate field measurement from structure walls, corners, etc. The Contractor shall submit the prints and an electronic CD (searchable PDF or source file format such as AutoCAD) in good condition to the Director upon completion of the job as a condition of Acceptance of the project. Marked prints

shall be updated at least once each week and shall be available to the Director for review as to currency prior to developing partial payment estimates. After the completion of testing, but prior to Acceptance, the Contractor shall submit As-Built electrical drawings in color and an electronic CD showing all components and their wiring, and as specified in the Supplemental Conditions.

2-1.24 **SUPERINTENDENCE.** The Contractor shall supervise and direct the Work, which shall be performed in accordance with the requirements of the Contract Documents. The Contractor shall be solely responsible for implementation of all construction means, methods, techniques, sequences, and procedures and for coordination of all portions of the Work under the Agreement. The Contractor shall be solely responsible for the safety of its employees, Subcontractors of any tier, Suppliers, visitors to the Contractor, and other third parties associated with the Contractor.

The Contractor shall designate in writing before starting Work, an authorized representative who shall have the authority to represent and act for the Contractor.

When the Contractor is comprised of two (2) or more persons, firms, partnerships, or corporations functioning on a joint venture basis, said Contractor shall designate in writing before starting Work, the name of one authorized representative who shall have the authority to represent and act for the Contractor. Instances of misconduct, contract non-compliance, unsatisfactory performance, or incompetence by these personnel shall be grounds for the City to direct Contractor to dismiss them from the Project. Contractor shall immediately comply with the City's request for dismissal, at no cost to the City, and shall designate a replacement, which shall be subject to approval by the City.

Said authorized representative shall be present at the site of the Work at all times while Work is actually in progress on the Contract. When Work is not in progress and during periods

when Work is suspended, arrangements acceptable to the Director shall be made for any Emergency Work that may be required.

Whenever the Contractor or its authorized representative is not present on any particular part of the Work where it may be desired to give direction, orders will be given by the Director, which shall be received and obeyed by the superintendent or foremen who may have charge of the particular Work in reference to which the orders are given.

Any order given by the Director, not otherwise required by the Supplemental Conditions to be in writing, will on request of the Contractor, be given or confirmed by the Director in writing.

2-1.25 **CHARACTER OF WORKER.** If any Subcontractor or person employed by the Contractor shall appear to the Director to be incompetent or to act in a disorderly or improper manner, he or she shall be removed immediately on the requisition of the Director, and such person shall not again be employed on the Work.

2-1.26 **INSPECTION.** The Contractor shall at all times permit the Director to inspect the Work or any part thereof. The Contractor shall maintain proper facilities and provide safe access for such inspection by the Director to all parts of the Work, and to the shops where the Work is in preparation. Work shall not be covered up until authorized by the Director and the Contractor shall be solely responsible for notifying the Director where and when such Work is in readiness for inspection and testing. Should any such Work be covered without authorization, it shall, if so ordered, be uncovered at the Contractor's expense.

Unless otherwise designated as normal working hours, whenever the Contractor intends to perform Work on Saturday, Sunday, or a Legal Holiday, the Contractor shall give notice to the Director of such intention forty-eight (48) hours prior to performing such Work, or such longer

period as may be specified so that the Director may make necessary arrangements.

The observation and/or approval of the workmanship or materials by the City shall not relieve the Contractor of any obligations to fulfill the requirements of the Contract Documents. Workmanship and materials not meeting such requirements shall be corrected and unsuitable Work or material may be rejected, notwithstanding that such Work or materials have been previously observed and/or approved by the City, or payment therefor has been included in a progress estimate.

The City may order re-examination of questioned Work at any time before final Acceptance. If so ordered, the Contractor shall uncover the Work. If such work is found to be in accordance with the Contract Documents, the City will pay for the cost of uncovering, removing, recovering and replacing the parts removed; but if such Work so exposed or examined is not in accordance with the Contract Documents, the uncovering, removal, recovering and replacement shall be at the Contractor's expense. Work that has been covered prior to observation by the City does not qualify as re-examined work; the City may order such work uncovered for observation without payment of any costs.

2-1.27 **REMOVAL OF REJECTED AND UNAUTHORIZED WORK.** All Work which has been rejected shall be remedied, or removed and replaced by the Contractor in a manner acceptable to the Director and no compensation will be allowed the Contractor for such removal, replacement, or remedial Work.

Any Work done beyond the lines shown on the Contract Drawings or established by the Director, or any Work done without written authority will be considered as unauthorized Work and will not be paid for. Upon order of the Director, unauthorized Work shall be remedied, removed, or replaced at the Contractor's expense.

Upon failure of the Contractor to comply promptly with any order of the Director made under this section, the Director may cause rejected or unauthorized Work to be remedied, removed, or replaced, and the costs thereof will be deducted from any moneys due or to become due the Contractor.

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SECTION 3

CHANGES IN THE WORK

3-1.01 **CHANGES.** The Director, without invalidating this Agreement and without notice to Contractor's surety, may order changes in the Work, consisting of additions or deletions, or other revisions. The Contract Price and the Contract Time shall be adjusted accordingly. All such changes in the Work, including in the Contract Price and the Contract Time, shall be authorized only by Contract Change Order, signed by the Director.

If Contractor claims that performance of any work entitles it to additional compensation or to an extension of time for performance of the Work, Contractor shall provide written notice to the City of any such claim prior to undertaking such work. Contractor shall provide written notice of any anticipated impacts to the Contract Price or Contract Time within three (3) Days of discovering such impact, by submitting a Notice of Potential Claim described in Section 7-1.03 below, or notice of delay as described in Section 6-1.09 below. If the Director refuses to issue a Change Order for such work, Contractor shall perform that work if directed or obligated to do so and shall submit a complete and specific Claim for additional compensation and/or extension of time for performance within fifteen (15) Days after such work is performed, as described in Section 7-1.03 below. Failure to provide written notice of claims prior to undertaking such work, failure to provide a timely Notice of Potential Claim, or failure to submit timely complete and specific Claim for additional compensation and/or extension of the time for performance, shall be deemed a waiver and abandonment of any such Claim. No Claim dispute or controversy shall interfere with the progress or performance of the Work and the Contractor shall proceed with the Work as directed by the Director. Failure to so proceed shall amount to a

default under this Agreement.

3-1.02 **PROPOSED CHANGE ORDERS.** The Contractor will be notified in writing of a proposed Change Order describing the intended change. Within fifteen (15) Days after receipt of a written request, the Contractor shall submit its proposed price to be added or deducted from the Contract Price due to the change and its estimate of the extent of the adjustment in the Contract Time, if any. The Contractor's proposed price to be added to or deducted from the Contract Price shall be supported by a detailed estimate of cost prepared by the Contractor, vendor or Supplier. The Contractor's proposed price submittal shall be accompanied by a statement of the time necessary for the changed Work, together with a description of how this time will be incorporated into the current Construction Schedule. The Contractor shall upon request by the Director permit inspection of its original Contract estimate, subcontract agreements or purchase orders relating to the change.

If agreement is reached on the adjustment in compensation as provided in Section 3-1.05, "Contract Price Adjustment," of these General Conditions, the Contractor shall proceed with the Work as changed at the agreed price.

If the Contractor and the Director fail to agree as to the adjustment in compensation for the performance of the changed Work, the Contractor, upon written order from the Director, shall proceed immediately with the changed Work and the Contract Price shall be adjusted in accordance with Section 3-1.06, "Force Account Payment," of these General Conditions.

If the Contractor fails to submit its cost estimate within such fifteen (15) Day period, the Contractor shall commence the Work as changed immediately upon receipt of written order of the Director, and the Contract Price will be adjusted in accordance with the Director's cost estimate for the changed Work.

3-1.03

EMERGENCY AND INDETERMINATE TYPE CHANGE

ORDERS. Changes in the Work made necessary by an Emergency, as determined by the Director, or changes of a kind where the extent of the Work cannot be determined until completed, may be authorized by the Director in writing. The Change Order shall state that it is issued pursuant to this Section 3-1.03. Upon receipt of an authorized Change Order or other written order of the Director, the Contractor shall proceed with the ordered Work and the Director will maintain a daily job record containing a detailed summary of all labor, materials and equipment required for the changed Work.

Within fifteen (15) Days after receiving a written request, the Contractor shall submit a detailed estimate of cost for the change and any requested change in Contract Time in the same manner as required for proposed Change Orders in Section 3-1.02 of these General Conditions.

3-1.04

EXECUTED CHANGE ORDER.

A Contract Change Order signed by both the Director and the Contractor is an “executed Contract Change Order.” By signing the Contract Change Order, the Contractor agrees that the specified compensation constitutes full compensation for the changed Work, including payment for interruption, disruption, acceleration, extended Overhead, delay or any other “impact” claim or “ripple effect” claim. The Contractor specifically understands and agrees that its execution of the Contract Change Order shall constitute a waiver of any right for the Contractor to claim any additional compensation with respect to the subject matter of the Contract Change Order.

3-1.05

CONTRACT PRICE ADJUSTMENT.

If a Contract Change Order provides for an adjustment to the Contract Price, the amount of such adjustment shall be determined by one of the following methods, or a combination thereof, as determined by the City and in its sole discretion:

A. Lump sum. The Contractor and the City may agree on a lump sum amount for the Change Order. At the City's request, the Contractor will provide pricing for the work. Maximum markups for Contract Change Orders paid for using lump sum pricing shall be paid for in the same manner and in the same amounts as markups for Force Account work, as described in Section 3-1.06 below.

B. Unit Prices. The unit prices set forth in the Contractor's Schedule of Bid Prices will be utilized where they are applicable and acceptable to the City. The Contractor's unit prices shall remain firm and shall not be subject to adjustment unless and until the actual quantity of work is increased or decreased by Contract Change Order in an amount greater than twenty-five percent (25%) from the estimated quantity indicated for such item. No markups will be given for Contract Change Orders paid for using unit prices.

Unit prices for new items included in the Contract Change Order but not included in the original bid shall be as mutually agreed upon or, in the absence of agreement, as determined by the City in the same manner as if the work were to be paid for on a Force Account basis, as described in Section 3-1.06 below.

C. Force Account. Where the City and the Contractor are unable to agree on lump sum pricing and if the City does not elect to utilize the unit prices in Contractor's bid, or such unit prices are not applicable, the changed work will be performed and tracked by the Contractor as Force Account work, as described in Section 3-1.06 below. The City will pay for such work, including markups, properly attributable to the change in accordance with those Force Account provisions.

D. Eliminated Items. The City reserves the right to delete any bid item of Work in its entirety. The City makes no representation that any work under a bid item of Work

will be performed, and all work may be subject to a Contract Change Order that deletes such work. Bid items are distinct and severable from the other bid items, and the Contractor shall not be entitled to any anticipated profit, unabsorbed Overhead, or other indirect expense attributable to the deleted item, except as provided immediately below with regard to Force Account mark-ups on the direct and verifiable costs incurred prior to the City's order that deletes the work.

Should any bid item of Work be eliminated in its entirety and not accounted for as described immediately above and, in the absence of an executed Contract Change Order covering such elimination, payment will be made to the Contractor for actual direct and verifiable costs incurred in connection with such eliminated bid item if incurred prior to the date of notification in writing by the City of such elimination. If acceptable material is ordered by the Contractor for the eliminated item prior to the date of notification of such elimination by the City, and if orders for such material cannot be canceled, it will be paid for at the actual direct and verifiable cost to the Contractor. Actual direct costs shall include documented vendor shipping fees, Supplier restocking fees, if applicable, and Contractor handling costs directly related to the eliminated item(s). In such case, the material paid for shall become the property of the City and the actual cost of any further handling will be paid for by the City. If the material is returnable to the vendor and if the City so directs, the material shall be returned and the Contractor will be paid for the actual direct cost of charges made by the vendor for returning the material. The actual direct cost of handling returned materials will also be paid for by the City. The actual direct and verifiable costs to be paid by the City as provided herein will be computed in the same manner as if the work were to be paid for on a Force Account basis, including the application of Force Account mark-ups to said costs.

3-1.06 **FORCE ACCOUNT PAYMENT.** When work performed pursuant to a

Change Order is to be paid for on a Force Account basis, the Contractor's labor, materials and equipment used in the performance of such Work shall be subject to the approval of the City, and the compensation will be determined as set forth below in this section.

3-1.06A **LABOR.** The Contractor will be paid an amount based on the actual cost for the workers (including foremen when authorized by the Director) used in the actual and direct performance of the Work. All labor costs associated with Overhead, whether field or home office, are specifically excluded herein, as those labor costs are covered by the below mark-ups. The cost of labor, whether the employer is the Contractor, Subcontractor or other forces, shall include employer payments; assessment of benefits required by lawful labor union collective bargaining agreements; compensation insurance payments; contributions made to the State pursuant to the Unemployment Insurance Code; and for taxes paid to the Federal Government pursuant to the Social Security Act of August 14, 1935, as amended. No labor cost will be recognized at a rate in excess of the wages prevailing in the locality at the time the Work is performed, nor will the use of a labor classification, which would increase the cost, be permitted unless the Contractor establishes to the complete satisfaction of the Director the necessity for payment at a higher rate.

3-1.06B **MATERIALS.** Only materials furnished by the Contractor and necessarily used in the performance of the Work will be paid for. Such cost of materials may include the costs of procurement, transportation and delivery if necessarily incurred. If a cash or trade discount by the actual supplier is available to the Contractor, it shall be credited to the City. If materials are procured by the purchaser by any method which is not a direct purchase from and a direct billing by the actual supplier to such purchaser, the cost of such materials shall be deemed to be the price paid to the actual supplier plus the actual costs, if any, incurred in the

handling of such materials. If the materials are obtained from a supply or source owned wholly or in part by the purchaser, the cost of such materials shall not exceed the price paid by the purchaser for similar materials furnished from said source on Bid items or the current wholesale price for such materials delivered to the job site, less any discounts as provided herein, whichever is lower. If, in the opinion of the Director, the cost of materials is excessive, or if the Contractor fails to furnish satisfactory evidence of the cost to it from the actual supplier within sixty (60) Days after the date of delivery of the materials or within fifteen (15) Days after Acceptance of the Agreement, whichever occurs first, the cost of the materials shall be deemed to be the lowest current wholesale price at which similar materials are available in the quantities required, less any discounts provided herein. The Department reserves the right to furnish such materials required by the Change Order as it deems advisable, and the Contractor shall have no claim for cost or markups on material furnished by the Department.

3-1.06C **EQUIPMENT.** The Contractor will be paid an amount based on the actual cost for the use of equipment directly required and approved by the Director in the performance of the changed Work. No payment will be made for time while equipment is inoperative due to breakdowns or on Days when no Work is performed. In addition, the rental time shall include the time required to move the equipment to the Work from the nearest available source of such equipment, and to return it to the source. If such equipment is not moved by its own power, then loading and transportation costs will be paid. Moving time, loading and transportation costs will only be paid if the equipment is used exclusively on the changed Work during the time between move in and move out. Individual pieces of equipment having a replacement value of One Thousand Dollars (\$1000) or less shall be considered to be tools or small equipment, and no payment will be made therefor. For equipment owned,

furnished, or rented by the Contractor, no cost therefore shall be recognized in excess of the equipment rental rates published by Caltrans at the following website address:

<http://www.dot.ca.gov/hq/construc/equipmnt.html>. Equipment located at a Work Site and utilized on non-Force Account work shall not be eligible for standby payment, and shall be charged on a Force Account basis only when solely performing pre-approved Force Account work tasks.

3-1.06D **MARKUPS.** When a Change Order increases the cost of the Work, the Contractor may add the following maximum markups to its actual costs of labor, materials, or equipment rental:

15 percent for labor;

10 percent for materials; and

5 percent for equipment rental.

The above markups include full compensation, covering the costs of all supervision, bonds, profit, Overhead, and other general expenses not specifically designated as a direct cost in Sections 3-1.06A through 3-1.06C above. The total payment (i.e., direct cost plus applicable markups) shall be deemed to be the actual cost of such work and shall constitute full compensation therefor. The Contractor specifically understands and agrees that such payment shall include any Contractor costs for interruption, disruption, and acceleration, extended Overhead, Change Order management, delay or other “impact” claim or “ripple effect” claim.

When work paid for on a Force Account basis is performed by forces other than the Contractor’s own forces, the maximum allowable mark-ups for the Subcontractors’ costs shall be fifteen percent (15%) for the cost of labor, ten percent (10%) for the cost of materials, and five percent (5%) for the cost of rented equipment. In these situations where the work is being performed by Subcontractors, the Contractor will only be entitled to an additional five percent

(5%) mark-up and will not be entitled to receive the additional mark-ups specified in this section.

When a Change Order decreases the cost of the Work, the reduction in cost shall include a five percent (5%) markup on the estimated cost for furnishing the labor, materials and equipment, which would have been used on such Work, had the Change Order not been issued.

When a Change Order involves both added Work and deleted Work, the markup or markups to be used shall be as follows:

The actual costs of labor, materials, and equipment rental for added and deleted Work shall be calculated separately without adding markups. If the difference between the calculated costs for labor results in an increased cost, a markup of fifteen percent (15%) shall be applied to the increased cost. If the difference between the calculated costs of materials or equipment rental results in an increased cost, a markup of ten percent (10%) and five percent (5%) respectively, shall be applied to the increased costs of materials or equipment rental, as the case may be. If the difference between the calculated costs for labor, materials or equipment rental results in a decreased cost, a markup of five percent (5%) shall be applied to the decreased costs of labor, materials or equipment rental, as the case may be.

Contractor shall not add mark-ups on work performed and billed by City staff nor add mark-ups to successive iterations of proposed Change Order cost proposals returned to Contractor by the City due to incomplete or inaccurate information being originally submitted by the Contractor. If the Contract Price increases by the issuance of Change Orders, the penalty amounts of the bonds required shall increase accordingly.

3-1.06E **RECORDS.** The Contractor shall maintain its records in such a manner as to provide a clear distinction between the direct costs of extra work paid for on a Force Account basis and the costs of other operations.

From the above records, the Contractor shall furnish the City completed daily extra work reports, on forms acceptable to the City, for each Day's extra work to be paid for on a Force Account basis. The daily extra work reports shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the Contractor, Subcontractor, or other forces. The daily extra work reports shall provide names and identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment, and hours operated. Daily extra work and Force Account reports (actual or claimed) shall be signed by both the City's and the Contractor's representatives within twenty-four (24) hours of the performance of the work.

Valid copies of vendor's invoices shall substantiate material charges. Such invoices shall be submitted with the daily extra work reports, or if not available, they shall be submitted with subsequent daily extra work reports. Should said vendor's invoices not be submitted within sixty (60) Days after the date of delivery of the material or within fifteen (15) Days after the Acceptance of the Agreement, whichever occurs first, the City reserves the right to establish the cost of such materials at the lowest current wholesale prices at which said materials were available in the quantities, less any discounts.

The City will compare its records with the completed daily extra work reports furnished by the Contractor and make any necessary adjustments. When these daily extra work reports are agreed upon and signed by both parties, said reports shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit by the City.

The Contractor's cost records pertaining to Work paid for on a Force Account basis shall be open to inspection or audit by representatives of the City during the life of the Agreement and for a period of not less than three (3) years after the date of Agreement completion and the

Contractor shall retain such records for that period. Where payment for materials or labor is based on the cost thereof to forces other than the Contractor, the Contractor shall make every reasonable effort to insure that the cost records of such other forces will be open to inspection and audit by representatives of the City on the same terms and conditions as the cost records of the Contractor. If an audit is to be commenced more than sixty (60) Days after the date of Acceptance of the Agreement, the Contractor will be given fifteen (15) Days' notice of the time when such audit is to begin.

3-1.07 **COST REDUCTION PROPOSALS.** The City encourages the Contractor to submit Cost Reduction Proposals whenever the Contractor identifies areas and/or instances in which there can be savings to the Work. Contractor may submit to the City, in writing, proposals for modifying the plans, Specifications or other requirements of the Agreement for the sole purpose of reducing the total cost of construction, including the time for completion of the Work. The City may consider such Cost Reduction Proposals and, if accepted, the Agreement will be equitably adjusted. The City has no obligation to consider or accept Cost Reduction Proposals.

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SECTION 4

CONTROL OF MATERIALS

4-1.01 **MATERIALS.** The Contractor shall furnish all materials required to complete the Work, except materials that are designated in the Supplemental Conditions to be furnished by the City and materials furnished by the City in accordance with Section 3, “Changes in the Work,” of these General Conditions.

Unless otherwise specified in the Supplemental Conditions, materials furnished by the Contractor for incorporation into the Work shall be new. When the quality or kind of materials, articles, or equipment is not particularly indicated, then the quality or kind thereof shall be similar to those that are indicated.

Articles or materials to be incorporated in the Work shall be stored in such a manner as to insure the preservation of their quality and fitness for the Work, and to facilitate inspection.

All materials which do not conform to the requirements of the Contract Documents as determined by the Director, will be rejected whether in place or not. Rejected material shall be removed immediately from the site of the Work, unless otherwise permitted by the Director. No rejected material, the defects of which have been subsequently corrected, shall be used in the Work, unless approval in writing has been given by the Director. Upon failure of the Contractor to comply promptly with any order of the Director made under these provisions, the Director shall have the authority to cause the removal and replacement of rejected material and to deduct the cost thereof from any moneys due or to become due the Contractor.

Manufacturer's warranties, guaranties, instruction sheets and parts lists, which are furnished with certain materials incorporated in the Work, shall be delivered to the Director

before Acceptance of the Contract.

Unless otherwise designated in the Supplemental Conditions or Specifications, materials furnished by the City will be delivered to the job site. Materials furnished by the City that are designated in the Supplemental Conditions as available at locations other than the job site shall be hauled to the site of the Work by the Contractor at its expense, including any necessary loading and unloading that may be involved.

The Contractor will be held responsible for all materials furnished to it, and shall pay all demurrage and storage charges. City-furnished materials lost or damaged from any cause whatsoever shall be replaced by the Contractor. The Contractor will be liable to the Department for the cost of replacing City-furnished material and such costs may be deducted from any moneys due or to become due the Contractor.

4-1.02 **PRODUCT AND REFERENCE STANDARDS.** When descriptive catalog designations, including manufacturer's name, product brand name, or model number are referred to in the Contract Documents, such designations shall be considered as being those found in industry publications in effect on the day the Notice to Contractors for the Work is dated, except as may be otherwise stated.

When standards or test designations of the Federal Government, trade societies, or trade associations are referred to in the Contract Documents by specific date of issue, these shall be considered as part of the Contract. When such references do not bear a date of issue, the edition in effect on the day the Notice to Contractors for the Work is dated shall be considered as part of the Contract.

4-1.03 **SAMPLING AND TESTING OF MATERIALS.** Unless otherwise specified, all tests shall be performed in accordance with the methods used by the State

Department of Transportation (Caltrans) and shall be made by the Director or his or her designated representative.

The State Department of Transportation has developed test methods for testing the quality of materials and Work. These test methods are identified by a California Test followed by the serial number. Copies of individual tests are available at the State Department of Transportation Laboratory, Sacramento, California, and will be furnished to interested persons upon request.

Whenever a reference is made in the Supplemental Conditions to a California Test by number, it shall mean the California test in effect on the day the Notice to Contractors for the Work is dated.

Whenever the Supplemental Conditions provide an option between two (2) or more test methods, the Director will determine the test method to be used.

Whenever a Supplemental Condition, manual, or test designation provides for test reports (such as certified mill test reports) from the manufacturer, copies of such reports, identified as to the lot of material, shall be furnished to the Director. The manufacturer's test reports shall supplement the inspection, sampling and testing provisions of this Section 4-1.03 and shall not constitute a waiver of the City's right to inspect. When material which cannot be identified with specific test reports is proposed for use, the Director may at his or her discretion, select random samples from the lot for testing. Testing specimens from the random samples, including those required for retest, shall be prepared in accordance with the referenced Supplemental Conditions and furnished by the Contractor at its expense. The number of such samples and test specimens shall be entirely at the discretion of the Director.

When requested by the Director, the Contractor shall furnish, without charge, samples of

all material entering into the Work, and no material shall be used prior to approval by the Director, except as provided in Section 4-1.04, "Certificates of Compliance," of these General Conditions.

A. Inspection and Access for Testing. The Contractor shall provide safe access for the Director and his or her inspectors to adequately inspect the quality of Work and conformance with the General and Supplemental Conditions. The Contractor shall provide adequate lighting, ventilation, ladders and other protective facilities as may be necessary for the safe performance of inspections.

The Contractor shall submit samples or specimens of such materials to be furnished or used in the Work as the Director may require. The Contractor shall furnish the Director all necessary labor and facilities for such things as excavation in the compacted fill to depths required to take samples.

Inspections, tests, or favorable review by the Director or others shall not relieve the Contractor from its obligations to perform the Work in accordance with the requirements of the Contract Documents.

Work covered without the favorable review or consent of the Director shall, if required by the Director, be uncovered for examination at the Contractor's expense.

If the Engineer, Architect, or Director considers it necessary or advisable that covered Work be inspected or tested by others, the Contractor, at the Director's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Director may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of

satisfactory reconstruction. If, however, such Work is not found to be defective and the Work was not covered without favorable review of the Director, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to cover its costs directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction and an appropriate Change Order shall be issued.

Whenever the Contractor varies the period during which Work is carried on each Day, the Contractor shall give due notice to the Director so that proper inspection may be provided. Any Work done in the absence of the Director may be subject to rejection. Proper facilities for safe access for inspection to all parts of the Work shall at all times be maintained for the necessary use of the Director and other agents of the City. Authorized representatives and agents of the Director shall be permitted access to inspect all Work and materials wherever it is required for preparation of progress reports, and the Contractor shall provide proper facilities for such access and inspection.

It is the Contractor's responsibility to supervise the Work and complete the project in accordance with the Contract Documents. In the course of managing that effort, the Contractor shall generate its own punch lists as deemed necessary. The Director may prepare punch lists for the Director's own use in communicating with the Contractor; however, the Director shall be under no obligation to prepare punch lists for the Contractor. In general, the Director will prepare punch lists only after the Contractor has given the Director written notice that the subject Work is completed and tested in accordance with the Contract Documents and is ready for operation and/or use and/or occupancy. Failure of the Director to include an item in a punch list shall not relieve the Contractor of its duty to satisfactorily complete all Work required by the Contract Documents.

Upon Final Completion of the construction Work and request by the Contractor, the Director will conduct a final inspection as a basis for recommending to the City that the Work be accepted.

B. Field and Materials Testing. Where the Supplemental Conditions require Work to be specially field tested or approved, it shall be tested only in the presence of the Director after timely notice of its readiness for inspection and test, and the Work after testing shall be covered up only upon the consent thereto of the Director.

The results of any tests made are for the information of the Director. Regardless of any test results, the Contractor is solely responsible for the quality of workmanship and materials and for compliance with the requirements of the Contract Drawings and Supplemental Conditions.

Except as specifically required under the Supplemental Conditions, all tests by the Director of materials furnished by the Contractor will be done in accordance with commonly recognized standards of national organizations. The Contractor shall furnish such samples of all materials as required by the Director without charge. No material shall be used unless it has been favorably reviewed by the Director.

Where such inspection and testing are to be conducted by an independent Laboratory or agency, the sample or samples of materials to be tested shall be selected by such Laboratory or agency, or the Director, and not by the Contractor.

C. Costs of Testing.

1. Initial Services: The City shall furnish and pay for all initial testing services required by the Contract Documents. When initial tests indicate non-compliance with the Contract Documents, the cost of initial tests associated with that non-compliance will be

deducted by the City from the balance owed the Contractor. The Contractor shall furnish samples of materials for testing as may be required by the Director. Such samples shall be furnished without cost to the City.

2. Retesting: When initial tests indicate non-compliance with the Contract Documents, all subsequent retesting occasioned by the non-compliance shall be performed by the same testing Laboratory and the cost thereof will be deducted by the City from the balance owed the Contractor. Contractor shall be billed for each additional test.

3. Contractor Convenience Testing: Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

4. Additional Tests and Inspections: When in the opinion of the Director additional tests or inspections are required because of the manner in which the Contractor executes its Work, such tests and inspections shall be paid for by the City, but will be deducted from the Contract Price. Examples of such tests and inspections are tests of materials substituted for previously accepted materials or substituted for specified materials, retests made necessary by failure of material to comply with the requirements of the Specifications, load tests made necessary because of portions of the structure not fully meeting Specifications or plan requirements, etc.

4-1.04 **CERTIFICATES OF COMPLIANCE.** A Certificate of Compliance shall be furnished prior to the use of any materials for which the Supplemental Conditions require that such a Certificate be furnished. In addition, the Director may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance. The Certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved comply in all

respects with the requirements of the Supplemental Conditions. A Certificate of Compliance shall be furnished with each lot of such materials delivered to the Work and the lot so certified shall be clearly identified in the Certificate.

All materials used on the basis of a Certificate of Compliance may be sampled and tested at any time. The fact that material is used on the basis of a Certificate of Compliance shall not relieve the Contractor of responsibility for incorporating material in the Work which conforms to the requirements of the Contract Documents and any such material not conforming to such requirements will be subject to rejection whether in place or not.

The Department reserves the right to refuse to permit the use of material on the basis of a Certificate of Compliance.

The form of the Certificate of Compliance and its disposition shall be as directed by the Director.

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SECTION 5

LEGAL RELATIONS AND RESPONSIBILITY

5-1.01 **LAWS TO BE OBSERVED.** The Contractor shall keep informed of and observe, and comply with and cause all of its agents and employees to observe and comply with, all prevailing Federal and State laws, and rules and regulations made pursuant to said Federal and State laws, and county and municipal ordinances, and regulations, which in any way affect the conduct of the Contract. If any conflict arises between provisions of the Contract and any such law above referred to, the Contractor shall notify the Director at once in writing. To the fullest extent allowed by law, the Contractor shall defend, indemnify, and save and hold harmless the City or any of its officers, agents, employees, and volunteers against any claim or liability arising from or based on the violation of any such law, rule, or regulation, whether by itself or its agents or employees.

5-1.02 **HOURS OF LABOR.** Eight (8) hours labor constitutes a legal Day's work. The Contractor or Subcontractor shall, as a penalty to City, forfeit Twenty-five Dollars (\$25) for each worker employed in the execution of the contract by the respective Contractor or Subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one (1) calendar week in violation of the provisions of the Labor Code, and in particular, Section 1810 to Section 1815, thereof, inclusive, except that Work performed by employees of Contractors in excess of eight (8) hours per day, and forty (40) hours during any one (1) week, shall be permitted upon public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half (1-1/2) times the basic rate of pay, as provided in said

Section 1815. In addition, Contractor and/or its Subcontractors may be required to pay double the basic rate of pay for all hours worked in excess of twelve (12) hours in any workday and under other circumstances. (See California Code of Regulations, Title 8, Sections 16100(c)(6) and (16200(a)(3)(F) and applicable Department of Industrial Relations prevailing wage determinations.)

5-1.03 **NONDISCRIMINATION.**

A. Attention is directed to Labor Code Section 1735, which reads as follows:

“A contractor shall not discriminate in the employment of persons upon public works on any basis listed in subdivision (a) of Section 12940 of the Government Code, as those bases are defined in Sections 12926 and 12926.1 of the Government Code, except as otherwise provided in Section 12940 of the Government Code. Every Contractor for public works who violates this section is subject to all the penalties imposed for a violation of this chapter.”

B. During the performance of this Contract, Contractor and its Subcontractors shall not unlawfully discriminate against any employee or applicant for employment because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or military and veteran status. The Contractor and Subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free of such discrimination. The Contractor and Subcontractors shall comply with the provisions of the California Fair Employment and Housing Act (Government Code §12900, et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, §7285.0 et seq.) and other applicable State and Federal regulations and City

policies pertaining to nondiscrimination and affirmative action which are incorporated into this Agreement by reference and made a part hereof as if set forth in full. The Contractor and its Subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

C. Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform Work under the agreement.

5-1.04 **PREVAILING WAGE.** The Contractor and any Subcontractor shall comply with Labor Code Sections 1770 et seq. In accordance with said Section 1775 the Contractor and any Subcontractor under the Contractor shall, as a penalty, forfeit to the state or City not more than \$200 for each calendar day or portion thereof, for each worker paid less than the prevailing rate as determined by the Director of Industrial Relations for the work or craft in which such worker is employed for under the Contract by the Contractor or by any Subcontractor under the Contractor.

The amount of the penalty shall be determined by the Labor Commissioner based on consideration of both of the following: (a) whether the failure to pay the correct rate of per diem wages was a good-faith mistake and, if so, whether the error was promptly and voluntarily corrected when brought to the attention of the Contractor or Subcontractor; and (b) whether the Contractor or Subcontractor has a prior record of failing to meet its prevailing wage obligations.

The penalty may not be less than forty dollars (\$40) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, unless the failure of the Contractor or Subcontractor to pay the correct rate of per diem wages was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of the Contractor or Subcontractor.

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The penalty may not be less than eighty dollars (\$80) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the Contractor or Subcontractor has been assessed penalties within the previous three (3) years for failing to meet its prevailing wage obligations on a separate contract, unless those penalties were subsequently withdrawn or overturned.

The penalty may not be less than one hundred twenty dollars (\$120) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rate, if the Labor Commissioner determines that the violation was willful, as defined in subdivision (c) of Section 1777.1 of the Labor Code.

If the amount due under this section is collected from the Contractor or Subcontractor, any outstanding wage claim under Chapter 1 (commencing with Section 1720) of Part 7 of Division 2 of the Labor Code against the Contractor or Subcontractor shall be satisfied before applying that amount to the penalty imposed on that Contractor or Subcontractor pursuant to this section.

The determination of the Labor Commissioner as to the amount of the penalty shall be reviewable only for an abuse of discretion.

In addition to said penalty, the difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage shall be paid to each worker by the Contractor or Subcontractor.

If a worker employed by a Subcontractor on a public works project is not paid the general prevailing per diem wages by the Subcontractor, the Contractor is not liable for any penalties described above unless the Contractor had knowledge of that failure of the Subcontractor to pay

the specified prevailing rate of wages to those workers or unless the Contractor fails to comply with all of the following requirements:

1. The contract executed between the Contractor and the Subcontractor for the performance of work on the public works project shall include a copy of the provisions of Sections 1771, 1776, 177.5, 1813, and 1815 of the Labor Code.
2. The Contractor shall monitor the payment of the specified general prevailing rate of per diem wages by the Subcontractor to the employees, by periodic review of the certified payroll records of the Subcontractor.
3. Upon become aware of the Subcontractor's failure to pay its workers the specified prevailing rate of wages, the Contractor shall diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the Subcontractor for work performed on the public works project.
4. Prior to making final payment to the Subcontractor for work performed on the public works project, the Contractor shall obtain an affidavit signed under penalty of perjury from the Subcontractor that the Subcontractor has paid the specified general prevailing rate of per diem wages to its employees on the public works project and any amount due pursuant to 1813 of the Labor Code.

Pursuant to Section 1775 of the Labor Code, the Division of Labor Standards Enforcement shall notify the Contractor on a public works project within fifteen (15) Days of the receipt by the Division of Labor Standards Enforcement of a complaint of the failure of a Subcontractor on that public works project to pay workers the general prevailing rate per diem wages.

Pursuant to the provisions of California Labor Code Section 1773, the City has obtained

the general prevailing rate of wages applicable to the categories of workers the City anticipates will be utilized for this project for straight time, overtime, Saturday, Sunday, and holiday Work. The holiday wage rate listed shall be applicable to all holidays recognized in the collective bargaining agreement of the particular craft, classification or type of worker concerned or, if no collective bargaining applies, those holidays identified in Government Code Section 6700. These wage rates may be obtained from the State Department of Industrial Relations and/or the following website address: <http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm>, which is incorporated herein as a part of this Contract.

Pursuant to Labor Code Section 1773.2, the general prevailing wage rates set forth above, which forms a part of this Contract, shall be posted by the Contractor at a prominent place at the site of the Work.

Pursuant to Labor Code Section 1773.6 and California Code of Regulations Section 16204, Title 8, changes in general prevailing wage determinations shall apply to the project only if issued by the Director of Industrial Relations prior to the City's bid issuance date.

The City will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the prevailing wage rate set forth in the Contract. The possibility of wage increases is one of the elements to be considered by the Contractor in determining its Bid, and will not under any circumstances be considered as the basis of a claim against the City or Contract.

When both California and Federal prevailing wage rates apply, the Contractor and any Subcontractors shall pay their workers the higher of the two rates. The Contractor and any Subcontractors shall insert this clause in any lower tier contract.

5-1.05 **REGISTRATION REQUIRED AS QUALIFICATION TO BID.**

Pursuant to Labor Code Section 1771.1(b), notice is hereby given that a Contractor or Subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contractor for public work, as defined in Labor Code Sections 1720, et seq., unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. It is not a violation of Labor Code Section 1771.1 for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5.

5-1.06 **PAYROLL RECORDS.** The Contractor's attention is directed to the following provisions of Labor Code Section 1776. The Contractor shall be responsible for the compliance with these provisions by its Subcontractors.

A. The Contractor and each Subcontractor shall keep accurate and current payroll records, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by it in connection with the public work. Each payroll record shall contain or be verified by a written declaration that is made under penalty of perjury, stating both of the following:

1. The information contained in the payroll record is true and correct.
2. The employer has complied with the requirements of Section 1771.1, 1771.2, 1771.3, 1771.4, 1771.5, 1771.6, 1771.7, 1771.8, 1771.9, 1771.10, 1771.11, and 1815 for any work performed by his or her employees on the public works project.

B. The payroll records enumerated under subdivision (A) shall be available for inspection at all reasonable hours at the principal office of the Contractor on the following

basis:

1. A certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or his or her authorized representative on request.

2. A certified copy of all payroll records enumerated in subdivision (A) shall be made available for inspection or furnished upon request to a representative of the City, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations. The City reserves the right to withhold any progress payments to the Contractor in the event of noncompliance with the subsection.

3. A certified copy of all payroll records enumerated in subdivision (A) shall be made available upon request by the public for inspection or for copies thereof. However, a request by the public shall be made through either the City, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. The public shall not be given access to such records at the principal office of the Contractor.

C. The certified payroll records shall be on forms provided by the Division of Labor Standards Enforcement or shall contain the same information as the forms provided by the Division.

D. Each Contractor shall file a certified copy of the records enumerated in subdivision (A) with the entity that requested the records within ten (10) Days after receipt of a written request.

E. Any copy of the records made available for inspection as copies and furnished upon request to the public or any public agency by the City, the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement shall be marked or

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obliterated to prevent disclosure of an individual's name, address and social security number. The name and address of the Contractor awarded the Contract or Subcontractor performing the Contract shall not be marked or obliterated. Any copy of records made available for inspection by, or furnished to, a joint labor-management committee established pursuant to the federal Labor Management Cooperation Act of 1978 (Section 175a of Title 29 of the United States Code) shall be marked or obliterated only to prevent the disclosure of an individual's name and social security number. A joint labor-management committee may maintain an action in a court of competent jurisdiction against an employer who fails to comply with Section 1774. The court may award restitution to an employee for unpaid wages and may award the joint labor-management committee reasonable attorneys' fees and costs incurred in maintaining the action. An action under this subdivision may not be based on the employer's misclassification of the craft of a worker on its certified payroll records. Nothing in this subdivision limits any other available remedies for a violation of this section.

F. The Contractor shall inform the City of the location of the records enumerated under subdivision (A), including the street address, city and county, and shall, within five (5) business days, provide a notice of a change of location and address.

G. The Contractor shall have ten (10) Days in which to comply subsequent to receipt of written notice requesting the records enumerated in subdivision (A). In the event that the Contractor or Subcontractor fails to comply within the ten (10) Day period, the Contractor shall, as a penalty to the State or City, forfeit twenty-five (\$25) Dollars for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from any progress payment or final payment then due. A contractor

is not subject to a penalty assessment pursuant to this section due to the failure of a Subcontractor to comply with this section.

5-1.07 **SAFETY REQUIREMENTS.** It is the intent of the parties that the City is not an exposing, creating, controlling, or correcting employer under California Labor Code Section 6400. In accordance with generally accepted construction practices and State law, the Contractor shall have the authority and be solely and completely responsible for conditions on the Work Site, including safety of all persons and property during performance of the Work. Moreover, the Contractor shall be the controlling employer and has the authority and responsibility to enforce Work Site safety. The Contractor shall be responsible for conducting daily safety inspections and assuring all hazards and violations are abated. The Contractor is responsible for assuring that all Subcontractors adhere to the minimum Cal/OSHA safety requirements and that each Subcontractor has an effective Cal/OSHA IIPP (Illness and Injury Prevention Program) in place that specifically addresses all potential exposures, such as, but not limited to, fall protection, confined space, and trenching/shoring. These requirements shall apply continuously and not be limited to normal working hours. The Contractor shall be responsible for any delay costs or damages in the event the progress of Work is slowed or stopped due to a safety violation.

The Contractor shall designate a safety officer and have in place a health and safety plan in accordance with the laws of State of California and conduct safety meetings and document them in accordance with the law. The Contractor shall have the safety record available for inspection during working hours and shall submit job site safety meeting reports with each Application for Payment.

Prior to Contractor commencing construction project work on City property, Contractor

shall make available copies of its Health and Safety Plan (HASP) that meets or exceeds applicable Cal/OSHA regulations. The Contractor's HASP shall also meet or exceed the requirements of any applicable City-wide or departmental specific Injury and Illness Prevention Programs (IIPP) and other HASP programs, procedures, and plans. Potentially applicable HASP programs, procedures, and plans include, but are not limited to, the following:

1. Bloodborne Pathogens Exposure Control Plan;
2. Confined Space Entry Procedure;
3. Electrical Safety Program (Lockout/Tagout);
4. Emergency Action Plans (Site Specific);
5. Fire Prevention Plans (Site Specific);
6. Hazardous Waste Operations Emergency Response Plan (or Equivalent);
7. Hazard Communication Program (SDS's and Right-to-Know training);
8. Heat Illness & Prevention Plan;
9. Hearing Conservation Program;
10. Hot Work/Welding Procedure;
11. Job Hazard Analyses/Standard Operating Procedures;
12. Traffic Control & Flagging;
13. Excavation/Dig Safe Procedure;
14. Fall Protection Plan;
15. Personal Protective Equipment Plan;
16. Respirable Crystalline Silica Exposure Control Plan;
17. Respirator Program;
18. Soils Management Plan (for contaminated soils); and

19. Transite (Asbestos) Pipe Work Procedure.

Additionally, Contractor shall be responsible for complying with all City-wide and departmental specific safety requirements as identified in the Supplemental Conditions or presented at a pre-construction meeting.

Contractor shall inform City in advance of the quantity of chemical(s) to be used for the project and the total quantity of chemical(s) that will be brought onto City property. In addition, Contractor shall provide City with one copy of the Safety Data Sheet (SDS) for each chemical expected to be used to complete the project and for each chemical brought to the Work Site, regardless of whether such chemicals are ultimately used for the project.

The services of the Director in conducting construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's Work methods, equipment, bracing or scaffolding, or safety measures, in, on, or near the construction site. If a City employee observes a safety violation, the City employee will report the violation to the Contractor who is then responsible for assuring the violation is abated.

The Contractor is hereby informed that Work on this project could be hazardous. The Contractor shall carefully instruct all personnel working in potentially hazardous Work areas as to potential dangers and shall provide such necessary safety equipment and instructions as are necessary to prevent injury to personnel and damage to property. Special care shall be exercised relative to Work underground.

All Work and materials shall be in strict accordance with all applicable State, City, County, and Federal Rules, Regulations, and Codes, and attention is drawn to the requirements of Cal/OSHA. The Contractor shall be solely responsible for compliance with all City, County and State blasting requirements and for any damages caused by its operations.

To ensure compliance with California Labor Code Section 6705, the Contractor shall submit to the City, at least five (5) Days in advance of excavation of any trench five feet (5') or more in depth, Working Drawings to the Director showing the design of shoring, bracing, sloping and other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such Working Drawings vary from the shoring system standards established by the Cal/OSHA Construction Safety Orders of the Division of Industrial Safety, the plan shall be prepared and signed by a registered civil or structural engineer in the State of California. This in no way relieves the Contractor from the requirement of maintaining safety in all operations performed by the Contractor or the Contractor's Subcontractors and nothing in this section shall be deemed to allow the use of a shoring, sloping or protective system less effective than that required by the Cal/OSHA Construction Safety Orders of the Division of Industrial Safety Contractor's Working Drawings shall be subject to approval insofar as the details affect the character of the finished Work and for compliance with design requirements applicable to the construction when specified or called for, but details of the design will be left to Contractor who shall be responsible for the successful construction of the Work. The City shall approve Working Drawings before any Work involving such drawings is performed. Approval and/or acceptance by the City or its designated agent only constitutes acknowledgment of the submission and does not constitute review or approval of the designs, design assumptions or criteria, completeness of submissions, applicability to areas of intended use, nor implementation of the plans, which are solely the responsibility of the Contractor and its registered engineer.

The Contractor shall perform its Work as not to expose personnel to, or to discharge into the atmosphere from any source whatever, smoke, dust, asbestos, toxic chemicals or other air

contaminants in violation of the laws, rules, and regulations of the governmental entities having jurisdiction and shall bear full and exclusive responsibility for any release of hazardous or non-hazardous chemicals or substances during the course of the Work. The Contractor shall immediately report any such release to the City. The Contractor shall be solely responsible for all claims and expenses associated with the response to, removal and remediation of the release, including, without limitation, payment of any fines or penalties levied against the City by any agency as a result of such release and shall defend, indemnify, and save and hold harmless the City, its officers, agents, employees, and volunteers from any claims arising from such release. For purposes of this section only, the term "claims" shall include:

1. All notices, orders, directives, administrative or judicial proceedings, fines, penalties, fees, or charges imposed by any governmental agency with jurisdiction; and
2. Any claim, cause of action, or administrative or judicial proceeding brought against the City, its officers, agents, employees, and volunteers for any loss, cost (including reasonable attorneys' fees), damage or liability, sustained or suffered by any person or entity, including the City.

If the performance of the Work creates any hazardous wastes, those wastes shall be properly disposed of according to federal, state, and local laws, at the expense of the Contractor. The Contractor shall dispose of the wastes under its own EPA Generator Number. In no event shall the City be identified as the generator. The Contractor shall notify the City of any such hazardous wastes and the City reserves the right to a copy of the results of any tests conducted on the wastes, and, at its cost, to perform additional tests or examine those wastes, prior to disposition. The Contractor shall defend, indemnify, and save and hold harmless the City, its

officers, agents, employees, and volunteers from any claims arising from the disposal of the hazardous wastes, regardless of the absence of negligence or other malfeasance by the Contractor. Disposal of all Hazardous Materials must be done in accordance with all laws and regulations. Copies of required regulatory documentation including copies of final manifests shall be supplied to the City.

Contractors or Subcontractors removing one hundred or more square feet (100') of asbestos must be "Certified" in accordance with State law. All Work involving exposure to asbestos and all other hazardous materials shall be performed with protection of personnel in compliance with all applicable regulations and safety requirements including, but not limited to, California Code of Regulations Section 1529, Title 8.

Nothing in these General Conditions is to be construed to permit Work not conforming to governing codes. When Contract Documents differ from governing codes, the Contractor shall furnish and Install the higher standards called for without extra charge.

5-1.08 **SUBSURFACE EXCAVATIONS, NOTIFICATION.** The Contractor shall contact the regional notification center, "Underground Service Alert," and schedule its Work to allow ample time for the center to notify its members and, if necessary, for any member to field locate and mark its facilities. Without limiting the foregoing, the Contractor's attention is directed to Government Code Sections 4216 to 4216.9, and in particular Section 4216.2.

5-1.09 **PUBLIC SAFETY.** The Contractor shall assume all responsibility for public safety during the performance of its Work, and all costs arising therefrom shall be included in the Contract Price. Whenever the Contractor's operations create a condition hazardous to traffic or to the public, it shall furnish, erect and maintain, at its expense, such fences, barricades, lights, signs, and other devices and take such other protective measures as are

necessary to prevent accidents or damage or injury to the public. The Contractor shall establish the pedestrian detours with comparable lighting to the original pedestrian areas. The Contractor shall arrange for such flaggers as are necessary to give adequate warning to traffic or to the public of any dangerous conditions affecting traffic. For Work in a public right-of-way, the Contractor shall comply with the rules and regulations of the State, County, or local agency that owns the right-of-way.

The Contractor shall promptly and fully comply with and carry out, and shall without separate charge therefor to the City, all safety and first aid requirements prescribed by all applicable Federal, State, and local laws and regulations, rules, and orders. The Work shall be done in a safe manner; and the Contractor shall safeguard the safety and health of its employees, Subcontractors, and the people of local communities. The Contractor shall also be reasonable for ensuring that its Subcontractors comply with the provisions of this section.

Upon the failure of the Contractor to comply with any of the requirements of this section, the City shall have the authority, but not the duty, to stop the Work until such failure is remedied. The Contractor shall not be entitled to an adjustment of the Contract Time or an increase in the Contract Price due to any such suspensions.

When required by the Contract Documents, the Contractor shall construct, maintain, and remove detours for use of public traffic, without additional cost to the City, unless separate payment is specified in the Special Provisions.

The failure or refusal of the Contractor to construct and maintain detours at the proper time shall be sufficient cause for closing down the work until such detours are in satisfactory condition for use by public traffic.

Due care shall be exercised to avoid injury to existing improvements or facilities, utility

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facilities, adjacent property and trees, shrubs, and other plants that are not to be removed.

Trees, shrubs and other plants that are not to be removed, and pole lines, fences, signs, survey markers and monuments, buildings and structures, conduits, pipe lines, sewer and waterlines, highway facilities, and any other improvements or facilities, under or above ground, that are within or adjacent to the work limit line shall be protected from injury or damage, and the Contractor shall provide and Install suitable safeguards to protect such objects from injury or damage. If such objects are injured or damaged by reason of the Contractor's operations, they shall be replaced or restored at the Contractor's expense. The facilities shall be replaced or restored to a condition as good as when the Contractor entered upon the Work Site, or as good as required by the Contract Documents if any such objects are part of the Work. The City may make or cause to be made such temporary repairs as are necessary to restore to service any damaged facility. The cost of such repairs shall be borne by the Contractor, and the costs may be deducted from any monies due or to become due to the Contractor under the Agreement.

The fact that any underground facilities is not shown on the Contract Drawings shall not relieve the Contractor of its responsibility pursuant to "Utility Facilities" in Section 2-1.12 elsewhere in the Contract Documents. It shall be the Contractor's responsibility, pursuant thereto, to ascertain the location of such underground improvements or facilities, which may be subject to damage by reason of its operations.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the Work involved in protecting or repairing property as specified in this section, shall be considered as included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefor.

5-1.10 **EMERGENCIES.** In an Emergency affecting the safety of life, the

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Work, or adjoining property, the Contractor, without special instructions or authorization from the City, shall act at its discretion to prevent such threatened loss or injury. In such an Emergency, the Contractor may perform such additional work as is reasonably required. Any compensation claimed by the Contractor on account of Work performed to an Emergency shall be determined in accordance with the provisions relating to Force Account payment contained elsewhere in the Contract Documents.

5-1.11 **APPRENTICES.** Attention is directed to Labor Code Sections 1777.5, 1777.6 and 1777.7 and Title 8, California Code of Regulations Section 200 et seq. In accordance with Section 1777.5, the Contractor shall secure the necessary certificates and shall contribute to the apprenticeship fund or funds, as provided therein. The Contractor shall require each Subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the work to fully comply with Sections 1777.5 and 1777.6 of the Labor Code. To insure compliance and complete understanding of the law regarding apprentices, and specifically the required ratio thereunder, each Contractor or Subcontractor should, where some questions exist, contact the Division of Apprenticeship Standards, , or one of its branch offices prior to commencement of Work on the public works Contract. Responsibility for compliance with this section lies with the prime Contractor.

It is State and City policy to encourage the employment and training of apprentices on public works Contracts as may be permitted under local apprenticeship standards.

5-1.12 **FAIR LABOR STANDARDS ACT.** Attention is invited to the fact that the City has been advised by the Wage and Hour Division, U.S. Department of Labor, that Contractors engaged in construction Work are required to meet the provisions of the Fair Labor Standards Act of 1958 and as amended (52 Stat. 1060).

5-1.13 **WORKERS' COMPENSATION.** Pursuant to the requirements of Labor Code Section 1860, the Contractor will be required to secure the payment of workers' compensation to its employees in accordance with the provisions of Labor Code Section 3700.

Prior to the commencement of Work, the Contractor shall sign and file with the Director a certification in the following form:

“I am aware of the provisions of Labor Code Section 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the Work of this Contract.”

5-1.14 **AIR POLLUTION CONTROL AND ASBESTOS.** The Contractor shall comply with all air pollution control rules, regulations, ordinances and statutes which apply to any Work performed pursuant to the Contract, including any air pollution control rules, regulations, ordinances and statutes, specified in Government Code Section 11017.

In the absence of any applicable air pollution control rules, regulations, ordinances or statutes governing solvents, all solvents, including but not limited to the solvent portions of paints, thinners, curing compounds, and liquid asphalt used on the project shall comply with the applicable material requirements of the applicable Air Quality Management District. All containers of solvent, paint, thinner, curing compound, or liquid asphalt shall be labeled to indicate that the contents fully comply with said requirements.

Unless otherwise provided in the Supplemental Conditions, material to be disposed of shall not be burned, either inside or outside the Premises.

The Contractor shall also comply with all rules, regulations, statutes and ordinances

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regarding asbestos removal and disposal, including but not limited to, 42 U.S.C. Sections 7401, 7412 and 7601, 40 C.F.R. Part 61, Subpart M, and California Code of Regulations Section 1529, Title 8.

If the Contractor discovers that a building to be demolished or renovated contains asbestos containing material, the Contractor shall immediately cease Work and notify the City.

5-1.15 **USE OF PESTICIDES.** The Contractor shall comply with all local, state and federal rules and regulations of the Department of Food and Agriculture, the Department of Health, the Department of Industrial Relations and all other agencies which govern the use of pesticides required in the performance of the Work.

Pesticides shall include but shall not be limited to herbicides, insecticides, fungicides, rodenticides, germicides, nematocides, bactericides, inhibitors, fumigants, defoliants, desiccants, soil sterilants, and repellents.

Any substance or mixture of substances intended for preventing, repelling, mitigating, or destroying weed, insects, diseases, rodents, or nematodes and any substance or mixture of substances intended for use as a plant regulator, defoliant or desiccant shall be considered as pesticide.

5-1.16 **SOUND AND LIGHT CONTROL REQUIREMENTS.** The Contractor shall comply with all local sound control, light control, and noise level rules, regulations and ordinances which apply to any Work performed pursuant to the Contract. Work shall not begin before 7 a.m. nor occur after 7 p.m., unless otherwise permitted by the City.

Each internal combustion engine, used for any purpose on the Work or related to the Work, shall be equipped with a muffler, in good working order, of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without said

muffler.

5-1.17 **WEIGHT LIMITATIONS.** Unless expressly permitted elsewhere in the Contract Documents, the Contractor shall not operate construction equipment or vehicles of any kind which, laden or unladen, exceed the maximum weight limits set forth in Division 15 of the Vehicle Code over completed or existing base, surfacing, pavement or structures.

5-1.18 **ENVIRONMENTAL CLEARANCES; MITIGATION MONITORING PROGRAMS; AND REGULATORY AGENCY PERMIT REQUIREMENTS.** The Department will obtain all environmental clearances and other authorizations necessary for this project as set forth in the Contract Documents. The Contractor shall comply with the provisions, including giving notices during construction when required, of said authorizations. In the event the obtaining of said authorizations delays completion of all or any portion of the Work, an extension of time determined pursuant to the provisions in Section 6-1.08, "Liquidated Damages," of these General Conditions will be granted.

Contractor shall comply with: (1) all mitigation identified in the mitigation monitoring program (attached to and adopted as a component of the mitigated negative declaration or Environmental Impact Report) to mitigate impacts to protected natural resources; and (2) all related permit requirements issued by the regulatory agencies authorizing the project. Contractor shall defend, indemnify, and save and hold harmless the City, its officers, agents, employees, and volunteers from any fines, claims, suits, actions or regulatory sanctions of every name, kind and description brought forth, or on account of, damage to protected natural resources from or arising out of Contractor's negligence or willful misconduct in the performance of this Agreement.

5-1.19 **PERMITS AND LICENSES.** The Contractor acknowledges and agrees that, prior to the submission of its bid for the Work, it fully familiarized itself with the

requirements of all applicable federal, state, county and municipal laws, codes, rules, and regulations, as well as the conditions of any required licenses and permits.

The Contractor shall procure all permits and licenses, including any applicable building permits (except those procured or to be procured by the City which are listed elsewhere in the Contract Documents), in coordination with the Director, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the Work. Contractor shall be responsible for applying, paying all fees, and coordination for obtaining all permits for completion of the Work. All permits and licenses shall be obtained in sufficient time to prevent delays to the Work. Contractor will apply to the City for reimbursement for such permits costs. Accordingly, Contractor should not include the anticipated costs for permits in its bid, as the necessary permit costs will be reimbursed by the City.

The California Environmental Quality Act (Public Resources Code, Section 21000 to 21177) may be applicable to permits, licenses and other authorizations which the Contractor must obtain from State or local agencies in connection with performing the Work. The Contractor shall comply with the provisions of that Act in obtaining such permits, licenses and other authorizations, and all permits, licenses and other authorizations shall be obtained in sufficient time to prevent delays to the Work.

The Contractor shall maintain the applicable Contractor's license as identified in the Notice to Contractors and City business license for the duration of the Work.

5-1.20 **WATER POLLUTION.** The Contractor shall comply with all water pollution control rules, regulations, ordinances and statutes which apply to any Work performed pursuant to the Contract, including any water pollution control rules, regulations, and statutes, specified by the most current State of California NPDES General Permit for Stormwater

Discharges Associated with Construction Activity.

The Contractor shall take all necessary precaution to protect streams, vernal pools, ponds, reservoirs, and lakes from pollution with fuels, oils, bitumen, calcium chloride, and other harmful materials as consistent with the law. Also, the Contractor shall conduct and schedule operations so as to avoid discharging pollutants, such as but not limited to: sediment and silt to the storm drain system. The storm drain system consists of all facilities that are designed to convey stormwater to the Waters of the State as defined in the California Water Code. The storm drain system includes, but is not limited to, all streets, gutters, drain inlets, roadside ditches, streams, vernal pools, ponds, and lakes. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.

5-1.21 **PROTECTION AND USE OF PROPERTY.** The Contractor shall be responsible for and provide and maintain all proper temporary walkways, covered walkways, barriers, roads, guards, railings, lights, warning signs, and take precaution at all times to avoid injury or damage to any person or any property, and upon completion of the Work, or at other times as directed, restore Premises and adjacent property to a proper condition. In the event of such injury or damage, Contractor shall report such injury and damage to City within forty-eight (48) hours of occurrence.

The Contractor shall protect adjoining property and nearby buildings, including City buildings, City roads, and public streets or roads, from dust, dirt, debris, or the nuisance arising out of the Contractor's operations or storage practices, and, if ordered by the Director, the Contractor shall provide and Install suitable safeguards, approved by the Director, to protect such objects from damage. If such objects are damaged by reason of the Contractor's operations, they shall be replaced or restored at the Contractor's expense.

If the Contractor damages any buildings, roads, utilities, or other property which belong to the City, or any Department or agency thereof, then the Director, at his or her option, may retain from the money due under the Contract an amount sufficient to insure repair of the damage.

The Director may make or cause to be made such temporary repairs as are necessary to restore to service any such damaged facility. The cost of such repairs shall be borne by the Contractor and may be deducted from any moneys due or to become due the Contractor under the Contract.

5-1.22 **RESPONSIBILITY FOR DAMAGE AND INDEMNIFICATION.**

The City of Roseville, its officers, agents, employees, and volunteers, including but not limited to the Director and his or her designee, shall not be answerable or accountable in any manner: for any loss or damage that may happen to the Work or any part thereof; for any loss or damage to any of the materials or other things used or employed in performing the Work; for injury to or death of any person, either workers or the public; or for damage to property from any cause which might have been prevented by the Contractor, its workers, or anyone employed by the Contractor or the Contractor's Subcontractors.

The Contractor shall be responsible for any liability imposed by law and for injuries to, or death of, any person including, but not limited to, workers and the public, or damage to property resulting from defects or obstructions, or from any cause whatsoever during the progress of the Work or at any time before its completion and final Acceptance.

To the fullest extent allowed by law, the Contractor shall defend (through counsel acceptable to the City), indemnify, and save and hold harmless the City, and its respective officers, agents, Subcontractors, employees, and volunteers, and the successors and assigns of

any of them, (hereinafter referred to as “Indemnitees”) from and against all claims, demands, liability, suits, actions, costs or expenses for any and all loss or damage, including but not limited to, personal injury, property damage, or economic loss, arising out of or resulting from allegations of (1) Contractor’s use of the City’s property or any activities or Work performed hereunder by the Contractor; (2) the Contractor’s performance of the Work under the Agreement; or (3) the Contractor’s breach of any provision of the Agreement. The duty of the Contractor to indemnify and save harmless includes the duties to defend as set forth in Civil Code Section 2778. The only exception to these provisions is that the Contractor’s obligations under this section will not apply to the extent that the claims, demands, liability, suits, actions, costs or expenses are caused by Indemnitees’ active negligence, willful misconduct, criminal acts, or for defects in design furnished by the Indemnitees, misconduct, criminal acts, or for defects in design furnished by the Indemnitees.

The Contractor waives any and all rights to any type of express or implied indemnity against the City, its officers, agents, employees, or volunteers.

The Contractor’s responsibility for such defense and indemnity obligations shall survive the termination or completion of this Contract for the full period of time allowed by law. The defense and indemnity obligations of this Contract are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Contract. The parties intend that the defense and indemnity obligations in this Contract shall be broadly construed.

Any person, firm or corporation that Contractor authorizes to Work on the City’s property including Subcontractors, shall be deemed to be an agent of the Contractor for purposes herein, shall be subject to all the applicable terms herein, and shall be within the scope of the Contractor’s indemnity obligation described herein.

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In addition to any remedy authorized by law, so much of the money due the Contractor under and by virtue of the Contract as shall be considered necessary by the Department may be retained by the City until disposition has been made of such suits or claims for damages.

The retention of money due the Contractor shall be subject to the following:

A. The City will give the Contractor thirty (30) Days' notice of its intention to retain funds from any partial payment which may become due to the Contractor prior to Acceptance of the Contract. Retention of funds from any payment made after Acceptance of the Contract may be made without such prior notice to the Contractor.

B. No retention of additional amounts out of partial payments will be made if the amount to be retained does not exceed the amount being withheld from partial payments pursuant to Section 7-1.07, "Progress Payments," of these General Conditions.

C. If the City has retained funds and it is subsequently determined that the City is not entitled to be indemnified and saved harmless by the Contractor in connection with matter for which such retention was made, the Department shall be liable for interest on the amount retained at the legal rate of interest for the period of such retention.

5-1.23 **INSURANCE COVERAGE.**

A. Evidence of Maintenance Required. The Contractor shall, at its expense, procure and at all times maintain in full force and effect at a minimum the insurance required by this section on all of its operations; and the Contractor shall not allow any Subcontractor to commence work until similar insurance required of the Subcontractor has been obtained and filed. An original Certificate of Insurance, and copies of all required endorsements, all in a form approved by the Risk Manager, evidencing all required coverage or policies shall be filed after the award of the bid and prior to approval of the Contract by the City Council. Contractor shall

provide ten (10) days prior written notice to the City of any reduction of coverage limits or cancellation of the coverage or policies shall be given to the City of Roseville as Certificate holder.

B. Qualifying Insurers. With the exception of the State Compensation Insurance Fund, all required insurance policies shall be issued by companies acceptable to the City and licensed to do business in the State of California and who hold a current policy holders alphabetic and financial size category rating of not less than AVII according to the most recent issue of Best's Insurance Reports.

C. Insurance Required.

1. Commercial General Liability (CGL): Insurance Services Office Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations with limits of no less than Two Million Dollars (\$2,000,000) per occurrence for bodily injury, personal injury and property damage for projects under One Million Dollars (\$1,000,000) and limits of no less than Five Million Dollars (\$5,000,000) per occurrence for bodily injury, personal injury and property damage for projects over One Million Dollars (\$1,000,000). If a general aggregate limit applies, either the aggregate limit shall apply separately to this project or the general aggregate limit shall be twice the required occurrence limit.

The Commercial General Liability insurance shall include the following, copies of which shall be provided:

a. Inclusion of the City of Roseville, and its officers, agents, employees, and volunteers, as additional insureds (except for workers' compensation) as respects services or operations under the Contract. The additional insured endorsement for the general liability policy shall be at least as broad as the ISO CG 2010 00 01 combined with ISO CGL

Endorsement CG 2037 10 01. Any other endorsement must be approved in writing by the City. Endorsements must include coverage for on-going and completed operations, which coverage shall be maintained for four (4) years following completion of the Project. Endorsements shall cover the City of Roseville, its officers, agents, employees, and volunteers.

b. The insurance shall provide coverage for claims by one insured against another insured and the policies shall not contain any cross-suits exclusions, cross-liability exclusions, or insured versus insured exclusions. The policies shall not contain any classification exclusions purporting to deny coverage for any work to be performed by Contractor or any of its Subcontractors.

c. Stipulation that the insurance is primary and noncontributory, as evidenced by a separate endorsement (CG 20 01 04 13 or an equivalent) or section of the policy, and that neither the City nor its insurers will be called upon to contribute to a loss.

d. Such insurance shall specifically cover the contractual liability of the Contractor.

e. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

f. Waiver of subrogation endorsement.

g. The Contractor shall furnish a certificate for the period covered.

2. Automobile Liability: Insurance Services Office Form Number CA 0001 covering Code 1 (any auto), or if Contractor has no owned autos, Code 8 (hired) and Code 9

(non-owned), with limits of no less than One Million Dollars (\$1,000,000) per accident for bodily injury and property damage.

3. **Workers' Compensation:** In accordance with the provisions of the California Labor Code, Contractor is required to be insured against liability for Workers' Compensation or to undertake self-insurance. Statutory Workers' Compensation and Employers' Liability of at least One Million Dollars (\$1,000,000) shall cover all Contractors staff while performing any work incidental to the performance of this Agreement.

4. **Professional Liability:** Professional Liability (Errors and Omission) Insurance appropriate to Contractor's profession, with a limit of liability not less than One Million Dollars (\$1,000,000) per occurrence or claim and Two Million Dollars (\$2,000,000) aggregate to cover all design and engineering services rendered by Contractor pursuant to the Agreement. Coverage must commence from the first day that Contractor or any of its Subcontractors provided any design or engineering services in connection with the Project.

5. **Builder's Risk/Course of Construction Insurance (If Required by Risk Management):** The Contractor shall be responsible for all loss, damage or destruction whatsoever to the work called for by this Contract until the approval of a Notice of Completion or acceptance of the Work if no Notice of Completion is to be recorded.

The Contractor shall secure "All Risk" type of builder's Risk Insurance of the type covering one hundred percent (100%) of the value of the work performed under this Contract (the value is presumed to be the Contract amount unless otherwise stated in Supplemental Conditions) and all materials, equipment, or other items to be incorporated therein while the same are located at the construction site, a bonded warehouse, or its place of manufacture. At any time, the policy shall cover the value of the work completed. The policy shall cover hazards

including the losses due to fire, explosion, hail, rain, lightning, flood (separate insurance as needed), vandalism, malicious mischief, wind, collapse, aircraft, and smoke.

The policies providing such insurance shall name the City as a loss payee as its respective interests may appear, and certified copies of such policies shall be filed with the City. The maximum deductible allowable under the Builder's All Risk policy shall be five percent (5%) of the Contract amount.

Builder's Risk Insurance is not required for coverage of losses in excess of five percent (5%) of the Contract amount for damages resulting from earthquake in excess of a magnitude of 3.5 on the Richter scale, or tidal waves. Coverage in the amount of five percent (5%) of the Contract amount for such losses is required.

6. Pollution Coverage: Contractor shall procure pollution liability coverage or other insurance covering claims for bodily injury or property damage arising out of the abatement, removal, storage, transportation, or other exposure to hazardous materials or pollutants, in limits not less than Two Million Dollars (\$2,000,000). Contractor shall add the City and all parties required to be indemnified by Contractor as additional insured on all pollution liability policies.

7. Higher Coverage Limits: If Contractor maintains higher coverage limits than the amounts shown above, then the City requires and shall be entitled to coverage for the higher coverage limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City.

8. Claims Made Coverage: Liability insurance coverage may not be written on a "claims made" or modified occurrence basis. The Certificate of Insurance must clearly provide that the coverage is on an "occurrence" basis.

5-1.24 **OTHER INSURANCE PROVISIONS.**

A. The requirements of the Standard Specifications as to types and limits of insurance coverage to be maintained by the Contractor, and any approval of insurance by the City, are not intended to, and shall not in any manner limit or qualify the liabilities and obligations otherwise assumed by the Contractor pursuant to the Contract, including, but not limited to, the provisions concerning indemnification, nor preclude the City from taking any other action available to it under any other provision of the Contract or law.

B. The City acknowledges that some insurance requirements contained in these Standard Specifications may be fulfilled by self-insurance on the part of the Contractor. However, this shall not in any way limit liabilities assumed by Contractor under the Contract. Any self-insurance must be approved in writing by the City, in its sole discretion and shall not reduce the limits of liability. Any deductibles or self-insured retentions (“SIR”) must be declared on the certificate of insurance and approved by City in writing. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or City. City reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

C. The Contractor agrees to include in its contracts with all subcontractors the same requirements and provisions of this Contract, including the indemnity and insurance requirements, to the extent they apply to the scope of the subcontractor’s work. Furthermore, the Contractor shall require its subcontractors to agree to be bound to the Contractor and the City in the same manner and to the same extent as the Contractor is bound to the City under this Contract. Additionally, the Contractor shall obligate its subcontractors to comply with these

same provisions with respect to any tertiary subcontractor, regardless of tier. A copy of the City's indemnity and insurance provisions will be furnished to the subcontractor or tertiary subcontractor upon request. Alternatively, the Contractor may insure subcontractor(s) under its own policy.

D. The City, its officers, agents, employees, and volunteers are to be covered as insureds with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Contractor; and with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts or equipment furnished in connection with such work or operations. Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under California Insurance Code Section 11580.04.

E. The limits of insurance required in this Contract may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and noncontributory basis for the benefit of the City (if agreed to in a written contract) before the City's own insurance shall be called upon to protect it as a named insured.

F. The insurance procured by Contractor shall be subject to the approval of the City, but any acceptance of insurance certificates by the City shall in no way limit or relieve Contractor of its duties and responsibilities under the Agreement.

G. Contractor shall be responsible for all premiums, deductibles, and self-insured retention applicable to the insurance it is required to procure under the Contract. All deductibles or self-insured retentions over five hundred thousand dollars (\$500,000) must be approved by the City, in writing. Contractor shall be responsible for all deductibles, self-insured

retention payments, and/or increased premiums incurred if the City's policies of insurance are forced to cover damages or respond to claims for which Contractor or its Subcontractors were obligated to provide insurance under the Contract.

H. Failure of the City to enforce in a timely manner any of the requirements of these insurance provisions shall not act as a waiver to enforcement of any of these provisions at a later date.

I. Contractor's indemnity obligations shall not be limited by these insurance provisions and shall survive the expiration of the Contract and the insurance provisions of the Contract shall likewise not be limited by the indemnity provisions of the Contract.

J. THE CITY RESERVES THE RIGHT TO WITHHOLD ANY PROGRESS PAYMENTS TO THE CONTRACTOR IN THE EVENT OF NONCOMPLIANCE WITH ANY INSURANCE REQUIREMENTS.

5-1.25 **THIRD PARTY BENEFICIARY.** No provisions in the Contract Documents shall in any way inure to the benefit any third party (including the public at large or any member thereof) so as to constitute such person a third party beneficiary of the Contract, or of any term or condition or other provision of the Contract or otherwise give rise to any cause of action in any person not a party to the Agreement, except as expressly provided elsewhere in the Contract Documents.

5-1.26 **COORDINATION AND ACCESS.** The Contractor acknowledges that the City may award, or has already awarded, other construction contracts for additional work or may perform additional work with its own forces and that such work may affect the Work under this Agreement. Additionally, the Contractor acknowledges that the State and other public and private agencies may be granted a right-of-entry by the City for the purpose of constructing

facilities within and adjacent to the Work Site. It is the obligation of the Contractor to coordinate its Work with the work of others working within or adjacent to the City's property.

During performance of its Work, the Contractor shall not have exclusive access to or use of the work areas. The City may also require that certain facilities and areas be used concurrently by the Contractor and by other contractors working in the area. When two (2) or more contractors are employed on related or adjacent City work, each shall conduct its operations in such a manner as not to cause any unnecessary delay or hindrance to the other. Each contractor shall be responsible to the other for all damage to any work, to persons or property caused to the other by its operations, and for loss caused the other due to any unnecessary delays or failure to finish the work within the time specified for completion.

If any party of the Contractor's Work depends on the work of any other contractor and/or the City for proper execution and/or results, the Contractor shall promptly notify the City of any discrepancies and/or defects in said other work that would render its work unsuitable for proper execution and/or results prior to proceeding with the Contractor's own Work. If it becomes necessary, the City will resolve coordination and access problems.

The Contractor and its representative in charge of the Work shall familiarize themselves with the City's property and Work Site, and adjacent surroundings in the vicinity of said Work, and any private or public operations on adjoining properties.

5-1.27 **OCCUPANCY BY THE DEPARTMENT PRIOR TO**

ACCEPTANCE. The City may at any time notify the Contractor in writing that it intends to take Beneficial Occupancy of any portion of the Work even though the Work may not be substantially complete. Unless the reason for the City's taking Beneficial Occupancy is that the Contractor has not completed the Work (or portions thereof) in accordance with the Contract

Time, the City's Beneficial Occupancy shall relieve the Contractor from its responsibility for maintenance, loss or damage to that portion of the Work for which the City has taken Beneficial Occupancy other than that resulting from the Contractor's act or omission, negligence, willful misconduct or breach of warranty.

Should the Work (or portion thereof) not be completed in accordance with the Construction Schedule within the Contract Time (as adjusted under the terms of the Contract Documents), the City shall have the right, but not the obligation, to take Beneficial Occupancy of the Work. In such event, the Contractor shall not be entitled to any additional compensation on account of said occupancy by the City, nor shall the Contractor be relieved of any of its responsibilities under the Contract Documents, including, without limitation, Contractor's obligation to complete the Work in accordance with the Construction Schedule.

Beneficial Occupancy shall not be deemed an Acceptance by the City either of the Work or of any portion thereof, nor will it relieve the Contractor of full responsibility for correcting defective Work or materials found at any time before the formal written Acceptance of the entire Contract by the Director or during the full warranty period after such Acceptance, as provided in Section 7-1.12, "Warranty," of these General Conditions.

The City's Beneficial Occupancy shall not relieve the Contractor of its responsibility to maintain all insurance and bonds required under the Contract Documents until the entire project is accepted by the City.

5-1.28 **RIGHT TO OPERATE UNSATISFACTORY FACILITIES AND EQUIPMENT.** If, after Installation, the operation or use of the facilities or equipment to be furnished under this Contract proves to be unsatisfactory to the Director, the City shall have the right to operate and use such facilities or equipment until they can, without damage to the City,

be taken out of service for correction or replacement. Such period of use of the defective facilities or equipment, pending correction or replacement, shall in no way decrease the warranty period required for the acceptable corrected or replaced facilities or equipment.

5-1.29 **CONTRACTOR'S RESPONSIBILITY FOR THE WORK.** Except as otherwise provided herein, the Contractor shall have the charge and care of the Work and shall bear the risk of injury or damage to any part of the Work by the action of the elements or from any other cause whether arising from the execution or from the nonexecution of the Work until the Acceptance of the Contract by the Director. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the Work occasioned by any cause before its completion and Acceptance, and shall bear the expense thereof. In case of suspension of Work from any cause whatever, the Contractor shall be responsible for the Work and it shall also be responsible for all materials, and shall properly store them if necessary, and shall provide suitable drainage and erect temporary structures where necessary.

The Contractor will be relieved of responsibility for any injury or damage to the Work caused by the following:

A. An earthquake in excess of a magnitude of 3.5 on the Richter Scale or a tidal wave, when the effect of such has been proclaimed a disaster or state of emergency by the Governor of the State of California or by the President of the United States, or was of such magnitude at the site of the Work as to have been sufficient to have caused a proclamation of disaster or state of emergency, had it occurred in a populated area.

B. Occupancy and use by the Department or the public prior to the completion of the entire project.

C. Acts of the Federal Government or the public enemy.

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Not For Bidding

5-1.30 **RESPONSIBILITY FOR UTILITIES.** The Contractor shall be responsible at its own cost for any and all Work, expense or special precautions caused or required by the existence or proximity of utilities encountered in performing the Work, including without limitation, repair of any or all damage and all hand or exploratory excavation required. The Contractor is cautioned that such utilities may include communication cables or electrical cables which may be high voltage, and when working or excavating in the vicinity of such cables, or the ducts enclosing such cables, the Contractor shall undertake at its own cost any special precautions required. Suitable warning signs, barricades, and safety devices shall be erected as necessary or required.

However, if during the course of the Work the Contractor encounters utility Installations which are not shown or indicated in the Contract Documents or which are found in a location substantially different from that shown, and such utilities are not reasonably apparent from visual examination, then the Contractor shall promptly notify the Director in writing. Where necessary for the Work of the Contract, the Director shall issue a written order to the Contractor to make such adjustments, rearrangement, repair, removal, alteration, or special handling of such utility, including repair of the damaged utility. The Contractor shall perform the Work described in such written order, and compensation therefor will be made in accordance with Section 3 of these General Conditions relating to changes in the Work. Except for the items of cost specified in said Section 3, the Contractor shall receive no compensation for any other cost, damage, delay, interference, or hindrance to him or her due to the presence of such utility. If the Contractor fails to give the notice specified above and thereafter acts without instructions for the Director, then the Contractor shall be liable for any or subsequent to discovery thereof and the Contractor shall repair and make good such damage at its own cost.

The precise location of underground facilities can only be determined by careful probing or hand digging in compliance with Article 6 of the Cal/OSHA Construction Safety Orders which states in part:

“Prior to opening an excavation, effort shall be made to determine whether underground installations, i.e., sewer, water, fuel, electric lines, etc., will be encountered, and if so, where such underground installations are located. When the excavation approaches the approximate location of such an installation, the exact location shall be determined by careful probing or hand digging, and, when it is uncovered, adequate protection shall be provided for the existing installation.”

The location of known existing utilities and pipelines are shown on the Contract Drawings in their approximate locations. Some of the locations include multiple conduits. The Contractor shall exercise care in avoiding damage to those facilities which are to remain in service subsequent to the construction of the particular new facility involved and the Contractor will be held responsible for any repairs if damaged. The Contractor shall also exercise care in maintaining those pipes and facilities required for continuing operation of the existing facilities until such time as they can be abandoned. There is no guarantee that all utilities or obstructions are shown on the Contract Drawings or that the locations indicated are accurate.

The Contractor shall exercise extreme caution in working in the area adjacent to the existing pipelines and utility services. It is essential that all the existing facilities be maintained in service. Construction of the connections between the existing facilities and the new facilities shall be at times and during periods acceptable to the City. The Contractor shall advise the Director in writing of its proposed Construction Schedule for these connections at least forty-eight (48) hours in advance.

The Contractor shall uncover all piping and conduits, to a point one foot (1') below the pipe, where crossings, interferences, or connections are shown on the Contract Drawings, prior to trenching or excavating for any pipe or structures, to determine actual elevations. New pipelines shall be laid to such grade as to clear all existing facilities which are to remain in service. If the Contractor does not expose all required utilities, it shall not be entitled to additional compensation for Work necessary to avoid interferences nor for repair to damaged utilities. Excavations around underground electrical ducts and conduits shall be performed using extreme caution to prevent injury or damage to workers and to the electrical ducts or conduits.

5-1.31 **PROPERTY RIGHTS IN MATERIALS.** Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the Work or soil or after partial payment has been made as provided in Section 7-1.07, "Progress Payments," of these General Conditions for material delivered on the ground or stored subject to or under the control of the City and unused. All such material shall become the property of the City upon being so attached or affixed or upon payment for materials delivered on the ground or stored subject to or under the control of the City and unused, as provided in said Section 7-1.07.

5-1.32 **COURT ORDERED DELAY.** If, pursuant to court order, the Department temporarily suspends performance of all or any portion of the Work, an extension of time determined pursuant to the provisions in Section 6-1.08, "Liquidated Damages," of these General Conditions will be granted.

5-1.33 **NO PERSONAL LIABILITY.** Neither the Director, nor any other officer or authorized employee of the City, shall be personally responsible for any liability arising under or by virtue of the Contract.

For Council Approval
Not For Bidding

5-1.34 **RIGHTS IN LAND AND IMPROVEMENTS.** The Contractor shall make no arrangements with any person or entity to permit occupancy or use of any land, structure or building within the limits of the Work, for any purpose whatsoever, either with or without compensation, in conflict with any agreement between the City and any third party owner, former owner, or tenant of such land, structure or buildings. The Contractor shall not occupy City-owned property outside the limit of the Work shown on the Contract Drawings unless it obtains prior approval.

5-1.35 **ANTITRUST CLAIMS.** The Contractor's attention is directed to the following provision of Public Contract Code Section 7103.5(b), which is applicable to the Contractor and its Subcontractors:

“ In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the contractor or subcontractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 [commencing with Section 16700] of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgement by the parties.”

5-1.36 **RIGHTS TO DRAWINGS, TECHNICAL DATA PATENTS.** Shop

Drawings and Working Drawings submitted to the City by the Contractor, Subcontractor or any lower tier Subcontractor pursuant to the Agreement, are the property of the City and the City may use, and disclose in any manner and for any purpose, Shop Drawings and Working Drawings delivered under the Contract.

Technical Data including manuals or instructional materials, computer or microprocessor software which are delivered or submitted to the City by the Contractor, Subcontractor, or any lower tier Subcontract pursuant to the Contract are the property of the City, and the City may use or disclose same in any manner and for any purpose.

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the Work, and shall defend, indemnify and save and hold harmless the City, and its duly authorized representatives, from all suits at law, or in equity, and actions of every nature for, or on account of the use of any patented materials, equipment, devices or processes. In case some materials, equipment, devices or processes are held to constitute an infringement and their use enjoined, the Contractor, at its expense, shall:

1. Secure for the City the right to continue using said materials, equipment, devices or processes by suspension of the injunction or by procuring a license or licenses; or
2. Replace such materials, equipment, devices, processes; or
3. Modify them so that they become non-infringing or remove the enjoined materials, equipment, devices or processes and refund the sums paid therefor without prejudice to any other rights of the City.

5-1.37 **PAYMENT OF TAXES.** Contractor shall pay all taxes and duties applicable to and assessable against any Work, equipment, materials, services, processes, and

operations incidental to or involved in the Agreement, including but not limited to, retail sales and use, transportation, export, import, business, and special taxes. The Contractor is responsible for ascertaining and acquainting itself with such taxes and making all necessary arrangements to pay them. The Contractor will maintain records that are auditable records, and these records shall be subject to the City's review to verify that Contractor's tax payments are current at all times.

The Contract Price paid for the Work shall include full compensation for all taxes which the Contractor is required to pay, whether imposed by Federal, State or local government, including, without being limited to, Federal excise tax. No tax exemption certificate nor any document designed to exempt the Contractor from payment of any tax will be furnished to the Contractor by the Department, as to any tax on labor, services, materials, transportation, or any other items furnished pursuant to the Contract.

The Contractor shall withhold and pay any and all sales and use taxes, withholding taxes, whether Federal, State, or local, Social Security taxes, State Unemployment Insurance charges and all other taxes which are now or hereafter may be required to be paid or withheld under any laws.

5-1.38 **GRATUITIES AND CONFLICT OF INTEREST.** The Contractor shall not offer or provide gratuities in the form of gifts, entertainment, loans, meals, rewards, and/or services to representatives of the City, including but not limited to, officers, employees, agents, Engineering Service Consultants, Consulting Engineers and Architects, Inspectors and/or Testing Agencies retained by the City. If it is found that the Contractor has violated this provision, the Contract may be subject to termination for default as defined elsewhere in these General Conditions.

During the term of the Contract and until the final payment has been made to the Contractor, the Contractor shall not employ or compensate in any manner whatsoever, the City's officers, employees and authorized representatives, agents, and any Engineering Service Consultants, Consulting Engineers and Architects, Inspectors, and/or Testing Agencies retained by the City. Any exception to the employment or compensation to any of the above named parties must be made in writing by the City. If the Contractor offers or provides employment or compensation to those named above during the term of the Contract, the Contract may be subject to termination for default.

5-1.39 **COOPERATION.** Should construction be under way by City forces or other forces or by other Contractors within or adjacent to the limits of the Work or should Work of any other nature be under way by such forces within or adjacent to said limits, the Contractor shall cooperate with all such forces to the end that any delay, interference or hindrance to their Work will be avoided. The right is reserved to perform other or additional Work at or near the site at any time, by the use of such forces.

5-1.40 **DIGGING TRENCHES OR OTHER EXCAVATIONS.** In the event any work involves digging trenches or other excavations that extend deeper than four feet (4') below the surface, City and Contractor shall comply with the following:

A. The Contractor shall promptly, and before the following conditions are disturbed, notify City in writing of any:

1. Material that the Contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

2. Subsurface or latent physical conditions at the site differing from those made available to Contractor for inspection as provided in the project proposal.

3. Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract.

B. The City shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the Contractor's cost of, or the time required for, performance of any part of the Work shall issue a Change Order under the procedures described in the Contract.

C. In the event that a dispute arises between the City and the Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the Contractor's cost of, or time required for, performance of any part of the Work, the Contractor shall not be excused from any scheduled completion date provided for by the Contract, but shall proceed with all work to be performed under the Contract. The Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties. However, no claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required by this Section. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

5-1.41 **CONTRACTOR REGISTRATION.** No contractor or subcontractor may work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. During the performance of this Contract, the Contractor and its subcontractors shall have a continuing legal obligation to maintain current

registration with the Department of Industrial Relations. The Contractor is hereby notified that this project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

5-1.42 **CITY OF ROSEVILLE ENCROACHMENT PERMITS AND**

RIGHTS-OF-WAY. The Contractor need not obtain a separate encroachment permit from the City prior to construction within street rights-of-way or other City rights-of-way. Execution of the Contract by the City shall be deemed an encroachment permit for work required by the Contract within rights-of-way. All work shall conform to the rules and regulations of encroachment permits and shall be subject to the inspection and approval of the Director and City Engineer.

To the extent indicated in the Contract Drawings, the City will provide the rights-of-way over private lands or the site to enable the Contractor to perform its work. The Contractor shall be solely responsible for securing any additional rights-of-way desired by the Contractor. The City will not be a party to nor assume any liability for any separate agreements reached between the Contractor and any third parties with respect to these additional rights-of-way. The Contractor shall procure evidence that agreements are in place with said third parties before the Contractor uses those areas covered by the agreements. Any damage to such private lands caused by the Contractor's operations shall be the sole responsibility of the Contractor.

For Council Approval
Not For Bidding

SECTION 6

PROSECUTION AND PROGRESS

6-1.01 **SUBLETTING AND SUBCONTRACTING.** The Contractor shall be responsible for all Work performed under the Contract. The Contractor shall give its personal attention to the fulfillment of the Contract and shall keep the Work under its control. Nothing in the Contract Documents shall create any contractual relationship between the City and any Subcontractor. The Contractor is fully responsible to the City for the acts and omissions of its Subcontractors of any tier. When any Subcontractor fails to prosecute a portion of the Work in a manner satisfactory to the Director, that Subcontractor shall not again be employed on the Work. Although the sections of the Contract may be arranged according to various trades, or general grouping of the Work, the Contractor is not obligated to sublet the Work in such manner. The Director will not arbitrate disputes among Subcontractors or between Contractor and one or more Subcontractors concerning responsibility for performing any part of the Work.

The on-site production of materials produced by other than the Contractor's own forces shall be considered as subcontracted. The erection, establishment or reopening of on-site plants for production of materials and the operation thereof in the production of materials for use on the Work shall conform to the requirements relating to labor set forth in the Contract Documents.

The Contractor shall also be responsible for coordinating the Work performed by Subcontractors and Suppliers.

The Contractor shall not substitute any person as Subcontractor in place of a Subcontractor listed on its bid proposal without the written approval of the Director. Substitutions must be in accordance with the provisions of the "Subletting and Subcontracting

Fair Practices Act” beginning with Public Contract Code Section 4100. Violations of this Act by the Contractor may subject it to penalties which may include cancellation of Contract, Assessment of ten percent (10%) of the Subcontractor's bid, and disciplinary action by the Contractors State License Board.

The Contractor shall pay any Subcontractors approved by the City for work that has been satisfactorily performed no later than seven (7) Days from the date of Contractor’s receipt of progress payments by the City. Within seven (7) Days after receipt from the City of funds attributable to work performed by a Subcontractor, Contractor shall release any retainage payments withheld to the Subcontractor. In the event Contractor does not make progress payments or release retention to Subcontractors in accordance with the time period specified herein, Contractor may be subject to prompt payment penalties per statute.

6-1.02 **ASSIGNMENT.** The performance of this Contract may not be assigned, except upon the written consent of the City Council of the City of Roseville. Consent will not be given to any proposed assignment which would relieve the original Contractor or its surety of their responsibilities under the Contract nor will the City consent to any assignment of a part of the Work under the Contract.

The Contractor may assign moneys due or to become due to it under the Contract and such assignment will be recognized by the City, if given proper notice thereof, to the extent permitted by law, but any assignment of moneys shall be subject to all proper set-offs in favor of the City and to all deductions provided for in the Contract and particularly all money withheld, whether assigned or not, shall be subject to being used by the City for the completion of the Work in the event that the Contractor should be in default therein.

6-1.03 **BEGINNING OF WORK.** After the execution of the Contract by both

parties, the City will issue the Notice to Proceed upon its determination that it is appropriate for the Contract Time to commence.

The Contractor shall begin Work within fifteen (15) Days after receiving the Notice to Proceed from the Director, subject to the requirements stated elsewhere in the Contract Documents regarding, among other things, the submittal of Baseline Schedule, and shall diligently prosecute the same to completion within the time limit provided in the Supplemental Conditions. Contractor shall also achieve any and all Contract milestones as described elsewhere in the Contract Documents.

The Contractor shall notify the Director, in writing, of its intent to begin Work at least seventy-two (72) hours before Work is begun. The notice shall be delivered to the Director and shall specify the date the Contractor intends to start. If the project has more than one (1) location of Work, a separate notice shall be given for each location.

The Contractor is not authorized to perform any Work until it has received a Notice to Proceed from the City. Should the Contractor begin Work in advance of receiving notice that the Contract has been approved as above provided, any Work performed by it in advance of the said date of approval shall be considered as having been done by the Contractor at its own risk and as a volunteer unless said Contract is so approved thereafter.

6-1.04 **PROGRESS SCHEDULE.**

A. **Preliminary Progress Schedule.** The Contractor shall submit to the Director, within twenty (20) Days after date of the Notice to Proceed, a Preliminary Progress Schedule covering the Contractor's activities over the first three (3) months of operation in detail and the remainder of the project in summary. The Preliminary Progress Schedule shall schedule the project within the Contract Time for completion of the Work, and shall be subject to

favorable review by the Director.

B. CPM Schedule. The Contractor shall submit an acceptable Critical Path Method (CPM) Schedule to the Director within thirty (30) Days after the receipt of the Notice to Proceed. Subsequent revisions to said schedule shall be submitted as set forth hereinafter. The requirement for the CPM schedule is included to allow for adequate planning and execution of the Work, to determine the critical nature of delays, and to assist the Director in appraising the reasonableness of the proposed schedule and evaluating progress of the Work. The CPM schedule submitted under this Section shall utilize a CPM format, either the precedence or arrow diagramming method. The definitions of CPM terms and functions shall be as provided in the Associated General Contractors of America book *CPM in Construction, A Manual for General Contractors*, or a favorably reviewed alternative publication or reference. No progress payment will be made prior to submission and acceptance of the CPM Schedule.

1. The CPM schedule system shall consist of diagrams and accompanying mathematical analyses. The diagrams shall show elements of the project in detail and an entire project summary. Diagrams shall show the order and interdependence of activities and sequence in which the Work is to be accomplished as planned by the Contractor. The basic concept of a network analysis diagram shall be followed to show how the start of a given activity is dependent on the completion of preceding activities and its completion restricts the start of following activities. Detailed network activities shall include, in addition to construction activities, the submittal and favorable review of samples of material and Shop Drawings, the procurement of critical materials and equipment, fabrication of special material and equipment, and their Installation and testing. All activities of the City and the Director that affect progress and required Contract dates for completion of all or parts of the Work shall be shown. The

selection and number of activities shall be subject to favorable review by the Director. Summary networks shall be time scaled. Durations shall be in Days and shall not exceed fifteen (15) Days, except for submittal and delivery items. Where the duration of continuous Work exceeds fifteen (15) Days, Work items in the Construction Schedule shall be subdivided by location, approximate stationing or other sub-element of the Work.

The graphic network diagram shall include for each activity, the description, activity number, the estimated duration in Days, and all activity relationship lines. The network diagram shall be drawn for the early start of activities. All significant Submittals shall be scheduled along with manual Submittals and training on all large or critical pieces of equipment. If the precedence technique is utilized, the schedule project shall include a calendar in Work Days, a network report sorted by early start and a logic table report sorted by preceding Work item. If the arrow technique is utilized, the schedule report shall include a calendar in Work Days, a network report sorted by early start, a network report sorted by I-J numbers, and a network sorted by slack time and I-J numbers.

2. The critical path shall be shown on all reports and on the graphic network diagram. The activities which constitute the critical path shall be identified.

3. The mathematical analysis of the network diagram shall include a tabulation of each activity. The following information shall be furnished as a minimum for each activity:

- (a) preceding and following event numbers
- (b) activity description and number
- (c) estimated duration of activities
- (d) earliest start date (by calendar date)

- (e) earliest finish date (by calendar date)
- (f) actual start date (by calendar date)
- (g) actual finish date (by calendar date)
- (h) latest start date (by calendar date)
- (i) latest finish date (by calendar date)
- (j) slack or float
- (k) percentage of activity completed

4. The program shall be capable of accepting revised completion dates as modified by approved time adjustments and recomputations of all tabulation dates and float accordingly.

5. Submission and review of the system shall be as follows:

(a) The complete network analysis system, consisting of the detailed network mathematical analysis and network diagrams, shall be submitted within thirty (30) Days after receipt of the Notice to Proceed.

(b) The Contractor shall participate in a review and evaluation of the proposed network diagrams and analysis by the Director. Any revisions necessary as a result of this review shall be resubmitted for review by the Director within ten (10) Days. When completed, the favorably reviewed schedule shall then be the schedule to be used by the Contractor for planning, organizing and directing the Work and for reporting progress. If the Contractor thereafter desires to make significant changes in its method of operating and scheduling, the Contractor shall notify the Director in writing stating the reasons for the change.

(c) The Contractor shall submit at monthly intervals a report of the actual construction progress. Each monthly report shall cover a period of approximately thirty

(30) Days ending around the 20th of each month. The monthly reports shall be submitted within ten (10) Days of the end of the reporting period.

(1) If the project is proceeding on schedule, the monthly update report may consist of a marked-up copy of the graphical network diagram. This submittal shall clearly indicate the status of any minor shifts in sequence or schedule and the estimated completion date or percent complete of all activities currently in progress. The Contract completion date shall also be indicated. The Contractor shall submit a narrative report relating to status of construction, the schedule, and factors which may affect the remainder of the schedule. The report shall show the activities or portions of activities completed during the reporting period. The report shall state the percentage of the Work actually completed and scheduled as of the report date and the progress along the critical path in terms of Days ahead or behind the allowable dates.

(2) If, in the opinion of the Director, the project is behind schedule, the monthly report shall include a revised network diagram and/or mathematical analysis showing the Contractor's proposed revised schedule. An analysis of the effect that the delay has on progress along other paths shall also be included in the report. The Contractor shall also submit a narrative report with each updated analysis which shall include but not to be limited to a description of current and anticipated problem areas, delaying factors and their impact, and an explanation of corrective actions taken or proposed.

(3) Periodic report shall be submitted in sufficient copies to cover Contractor needs plus five (5) copies and an available electronic copy to be retained by the Director.

6. To the extent that the favorably reviewed initial Construction Schedule, or revisions thereto, indicate anything not jointly agreed upon, it shall be deemed to be not favorably reviewed by the Director. Any omission of Work from the detailed schedule, otherwise required for Contract compliance, will not excuse the Contractor from completing such Work within any applicable completion date. The CPM schedule shall be generated by computer methods.

C. Schedule Review. Once each month, on a date mutually agreed upon, but no later than seven (7) business days after the monthly schedule progress report date, a Work Site meeting will be held to review the Construction Schedule and job progress. The Contractor shall also attend weekly meetings scheduled by the Director to review the progress of the Work in the preceding week and in the subsequent week, coordinate the Work with public agencies or other Contractors as required, and allow the Director to plan his or her activities for testing, inspection, etc.

D. Schedule Revisions. The conditions under which the Director will require revisions of the Construction Schedule include the following:

1. When delay in completion of any Work item or sequence of Work items results in an estimated extension of project completion by either twenty (20) business days or by ten percent (10%) of the remaining duration of time to complete the Contract, whichever is less.

2. When delays in Submittals or deliveries make replanning or rescheduling of the Work necessary.

3. When the schedule does not represent actual prosecution and progress of the Work.

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4. When any change to the sequence of activities, the completion date for major portions of the Work, or when changes occur which affect the critical path.

5. When Contract Amendments or a Change Order necessitates schedule revision, the Contractor shall submit a schedule analysis of all Change Order Work with its proposal.

E. Cash Flow Projection. A cash flow projection shall be submitted with the Construction Schedule. This cash flow projection shall be revised and resubmitted when revisions of the Construction Schedule will result in changes to the projected cash flow.

F. Schedules showing project completion dates earlier than specified in the Supplemental Conditions will be rejected unless justification can be provided for early completion.

6-1.05 **SCHEDULE OF VALUES.** Prior to preparation of the first estimate for a progress payment, the Contractor shall submit for favorable review by the Director a detailed Schedule of Values or cost breakdown of the Work under each bid item awarded. The breakdown will then become the basis for partial payment determination. Elements of Work shall be grouped by structure, pipeline, system, etc. Within each grouping, Work should be itemized by readily measurable quantities of Work complete in place. For example, concrete should be in units of cubic yards including form Work and reinforcing steel. Move-on costs, bond and insurance costs, and Overhead costs shall not be considered an item of cost for this purpose but shall be prorated over items of Work. In the event the Schedule of Values is not favorable reviewed by the Director, another Schedule of Values shall be submitted that is mutually acceptable to the Contractor and the Director.

6-1.06 **CITY'S RIGHT TO STOP WORK.** The Director shall have the

authority to order the Contractor, in writing, to suspend the Work wholly or in part, for such period as the Director may deem necessary due to the failure on the part of the Contractor to correct Work that is not in accordance with the requirements of the Contract Documents or if Contractor persistently fails to carry out Work in accordance with the Contract Documents.

The Contractor shall immediately comply with the written order of the Director to suspend the Work wholly or in part. The suspended Work shall be resumed when conditions are favorable and methods are corrected, as ordered or approved in writing by the Director.

Any stoppage of work under this section shall be at the Contractor's sole expense, and the Contractor shall have no claim against the City based on the Contractor's failure to perform the Work in accordance with the Contract Documents.

In addition to the City's right to stop Work, the City may order the Contractor to submit to the City at no additional cost to the City, additional information concerning Contractor's planned Work if the Contractor fails to promptly correct Work that is not in accordance with the requirements of the Contract Documents or persistently fails to carry out Work in accordance with the Contract Documents. The additional information ordered by the City may include, but is not limited to, preparation of Submittals or Working Drawings not otherwise required to be submitted under the Contract Documents.

In the event the City discovers that the Contractor has created an unsafe condition the City may arrange for other work forces to remedy the condition. Such remedial work shall be at the sole discretion of the City. If this action is required, the City may unilaterally terminate Work under the Contract, and will pay only for the quantities of Work actually performed, less the cost of the City's remedial Work. In the event that Work is not halted, the Contractor must take immediate steps to correct the situation. There will be no extra payment for Work required

to correct unsafe conditions.

The right of the City to suspend the Work shall not give rise to a duty on the part of the City to exercise this right for the benefit of the Contractor or any other person or entity. This right shall be in addition to and not in restriction or derogation of the City's other rights under the Contract Documents.

In the event of a suspension of Work under any of the conditions set forth in this Section 6-1.06, such suspension of Work shall not relieve the Contractor of its legal responsibilities as set forth in these General Conditions.

6-1.07 **TIME OF COMPLETION.** The Contractor shall complete the entire Work, including Installation, repairs, startup, troubleshooting, painting, and touchup, training, submittal or record drawings, and manuals, cleanup, demobilization, and all other Work within the number of Days set forth in the Supplemental Conditions. The time for completion includes an allowance for working time lost due to normal inclement weather.

Extensions of time may be allowed for unusual inclement weather under the provisions hereinafter described. Unusual inclement weather is weather which adversely affects "controlling" operations or the critical path of construction and which meets one of the following criteria:

A. For the particular calendar month in question, the number of individual Days with rainfall exceeding 0.10 inches exceeds the average number of such Days for that month over the immediately preceding five (5) years of record by at least three (3) Days.

B. For the particular calendar month in question, the total cumulative rainfall for that month exceeds the average cumulative rainfall for that month over the immediately preceding five (5) years of record by at least two inches (2").

Rainfall shall be measured at a publicly operated, maintained, and reported station in reasonable proximity to the construction site. A claim for delay shall indicate the period of rainfall which is claimed as “unusual,” the specific dates during which the unusual rainfall and subsequent wet soil conditions prevented Work, and the specific critical path tasks adversely affected by such unusual weather. A claim for delay due to unusual inclement weather shall be filed within ten (10) Days of the apparent end of the unusual inclement rainfall period, whether or not the monthly totals are available at that time. The burden of proof that weather meets the criteria for unusual weather shall be solely the responsibility of the Contractor.

It is the responsibility of the Contractor to order materials required for the Work properly and promptly on a Notice to Proceed. If evidence presented demonstrates that, in spite of the Contractor's efforts, government-established priorities controls delay material deliveries, suitable extension of time will be made.

If performance of extra Work ordered by the City or failure of the City to provide the necessary site for Installation affects construction tasks which are “controlling” or which are on the “critical path” of the Construction Schedule, suitable extensions of time will be made.

The Contractor shall not be entitled to a time extension for delays in activities on non-critical paths of the favorably reviewed schedule unless the duration of the excusable delay exceeds the total float of the activities being delayed. If the duration of an excusable delay does exceed the total float of the activities affected by the delay, the Contractor shall be entitled to an extension equal to the difference.

C. Determination that a day is a non-working day by reason of inclement weather or conditions resulting immediately therefrom, shall be made by the Director.

6-1.08 **LIQUIDATED DAMAGES.** It is agreed by the parties to the Contract

that in case all the Work called for under the Contract in all parts and requirements is not completed within the number of Days as set forth in the Supplemental Conditions, damage will be sustained by the City and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the City will sustain in the event of and by reason of such delay; and it is therefore agreed that the Contractor will pay to the City, the monetary amount indicated in the Supplemental Conditions in dollars (U.S.) per day for each and every calendar day of delay in completing the Work in excess of the number of Days prescribed and the number of additional calendar days, if any, authorized by Contract Change Order; and the Contractor agrees to pay said Liquidated Damages herein provided for, and further agrees that the City may deduct the amount thereof from any moneys due or that may become due the Contractor under the Contract.

It is further agreed that in case the Work is not finished and completed in all parts and requirements within the number of Days specified, the City shall have the right to increase the number of Days or not, as it may deem best to serve the interest of the City, and if it decides to increase the said number of Days, it shall further have the right to charge to the Contractor, its heirs, assigns or sureties and to deduct from the final payment for the Work all of any part, as it may deem proper, of the actual cost of engineering, inspection, superintendence, and other Overhead expenses which are directly chargeable to the Contract, and which accrue during the period of such extension, except that cost of preparation of final statement shall not be included in such charges.

6-1.09 **DELAYS AND EXTENSIONS TO THE WORK.** The Contractor must complete all Work within the time specified in the Agreement. The Contractor will be granted an extension of time and will not be assessed with liquidated damages or the cost of engineering

and inspection for any delay in substantially completing the Work (or parts thereof) beyond the time set forth in the Agreement, provided that such delay was caused by unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include acts of public enemy, fire, floods, abnormal weather (as described below), earthquakes, epidemics, quarantine restrictions, strikes, labor disputes and freight embargoes, fire, changes made pursuant to the provisions of "Changes in the Work" under Section 3 of these General Conditions or acts or neglect of the City not contemplated by the Contract Documents. In all cases, any extension of time is conditioned on the following:

1. That the cause is not due to the fault or negligence of the Contractor, and the Contractor has taken reasonable precautions to prevent and minimize the effects thereof; and
2. That the Contractor notifies the Director in writing within three (3) Days from the beginning of such delay specifying the nature of the delay and the measures that have been or will be taken to prevent or minimize the delay. Failure to submit written notice within this time period shall constitute an absolute waiver of any claim for a time extension.

No extension of time will be granted for a delay caused by a shortage of materials, unless the Contractor furnishes to the City documentary proof that it has diligently made every effort to obtain such materials from all known sources within reasonable reach of the work and further proof, as acceptable to the Director, that the inability to obtain such materials when originally planned did in fact cause a delay in Final Completion of the entire Work which could not be compensated for by revising the sequence of the Contractor's operations. Only the physical shortage of material will be considered as a cause for extension of time, and no consideration

will be given to any claim that material could not be obtained at a reasonable, practical or economical cost or price, unless it is shown to the satisfaction of the City that such material could have been obtained only at exorbitant prices entirely out of line with current rates, taking into account the quantities involved and the usual practices in obtaining such quantities.

No extension of time will be granted for a delay caused by Contractor's staff turnovers, understaffing or insufficient quantity of qualified staff able to perform the necessary work.

The term "shortage of materials," as used in this section, shall apply only to materials, articles, parts or equipment which are standard items and shall not apply to materials, parts, articles or equipment which are processed, made, constructed, fabricated or manufactured to meet the specific requirements of the Contract Documents.

No extensions of time will be granted for delays that have no measureable impact on the completion of the Work (or parts thereof) under the Contract Documents. When extensions of time are granted, they will be limited to the period equivalent to the actual number of Days lost on the critical path or controlling operations of the Construction Schedule, taking into account the extent to which that delay could be decreased by reasonable mitigation measures by the Contractor. All requests for extensions of time must be supported with a critical path analysis showing the critical path and impacts to it. Contractor's failure to submit this analysis will be sufficient cause for denial of any request for a time extension.

Within a reasonable period of time after the Contractor submits the notice and information required by this section, the City will determine whether an extension of time is justified and, if so, the number of days for the extension.

Abnormal weather may be a valid basis for a time extension under the Agreement. "Abnormal Weather" occurs when the number of days of rain above 0.5 inches in a 24 hour

period exceeds the average for such rainfall in a particular month as determined by the National Weather Service. The Contractor will only be entitled to, at most, a time extension for the number of days of rain exceeding the average for that month in the locale where the Work is to be performed. If delays are caused by the Contractor or those for whom the Contractor is responsible, the Contractor will only be entitled to, at most, a time extension for the number of rain days exceeding the average for the month when the Work should have been performed.

In addition, before a time extension may be granted for abnormal weather, the Contractor must establish that the rain either significantly impacted at least sixty percent (60%) of the planned work of the controlling operations for a particular day or prohibited at least five (5) hours of work on the controlling operations planned for that day. Contractor shall employ reasonably methods to mitigate the impact of abnormal weather (i.e., dewatering, protection of site, etc.) The occurrence of rain during non-work hours or having minimal impact to work on the controlling operation shall not constitute a day of abnormal weather.

In the event that the project experiences favorable weather for a particular month (e.g., the number of actual rain days in a month less than that indicated above for allowable rain days per months), the additional float resulting from such favorable weather shall accrue to the project.

Any Contractor claim for damages or additional compensation based on delay shall be limited to only those circumstances where the Contractor has fulfilled each of the following three (3) requirements:

1. Contractor has established its entitlement to a time extension pursuant to the provisions described above regarding delay and extensions to the Work.
2. The delay was caused solely by the City's issuance of changes made pursuant to the

provisions of “Changes in the Work” under Section 3 of these General Conditions or by acts or neglect of the City.

3. The delay was unreasonable under the circumstances and not within the contemplation of the parties.

It is expressly understood and agreed that delays caused by the City will be non-compensable when there are concurrent delays caused by the Contractor. Also, the Contractor shall have no entitlement to additional compensation for any delay where there have been concurrent delays caused by non-compensable delays, including, but not limited to, fire, floods, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes, and freight embargoes.

Contractor’s damages and/or additional compensation for delays will consist solely of the extended costs of maintaining the Contractor’s Work Site presence. The Contractor will not be entitled to any extended home office overhead.

Compensation for idle time of equipment will be determined in the same manner as determinations are made for equipment used in the performance of extra work paid for on a Force Account basis with the following exceptions:

1. The time for which compensation will be paid will be the actual normal working hours during which such delay conditions exists, but in no case will exceed eight (8) hours in any one day.
2. The days for which compensation will be paid will be each calendar day of the work week (defined elsewhere in the Contract Documents) and Legal Holidays, during the existence of such delay, except that when rental of the equipment is paid for under the provisions in Section 3-1.06C, “Force Account Payment – Equipment,” of these General Conditions, no payment will be made for delays in accordance with the

provisions of this section.

Actual loss shall be understood to include no items of expense other than idle time of personnel, cost of extra moving of equipment, and cost of longer hauls. Compensation for idle time of equipment will be determined as provided in this section and compensation for idle time of personnel will be determined pursuant to Section 3-1.06A, "Force Account Payment – Labor," of these General Conditions. No markup will be added in either case for Overhead and profit. The cost of extra moving of equipment and the cost of longer hauls will be paid for as extra work as provided pursuant to "Changes to the Work" elsewhere in the Contract Documents.

6-1.10 **TERMINATION.**

6-1.10A **TERMINATION OF AGREEMENT – CONVENIENCE OF CITY.** The Department reserves the right to terminate the Contract at any time and for any reason if the Director determines that to do so would be in the best interest of the City. Any termination which is not based on the circumstances set forth in Section 6.1-10B below shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of Work under the Contract is terminated, and the date upon which such termination becomes effective.

Upon the Contractor's receipt of a written Notice of Termination for convenience, the Contractor shall cease Work as to those portions of the project so terminated and shall undertake the steps outlined in Section 6-1.10B below.

1. Acceptance of the Contract as hereinafter specified shall not relieve the Contractor of responsibility for damage to materials except as follows:
 - a. The Contractor's responsibility for damage to materials for which partial payment has been made as provided in Section 7-1.07, "Progress

Payments,” of these General Conditions and for materials furnished by the City for use in the Work and unused shall terminate when the Director certifies that such materials have been stored in the manner and at the locations he or she has directed.

- b. The Contractor's responsibility for damage to materials purchased by the City subsequent to the issuance of the notice that the Contract is to be terminated shall terminate when title and delivery of such materials has been taken by the City.
- c. When the Director determines that the Contractor has completed the Work under the Contract directed to be completed prior to termination and such other Work as may have been ordered to secure the project for termination, the Contractor will recommend that the City formally accept the Work, and immediately upon and after such Acceptance by the City, the Contractor will not be required to perform any further Work thereon and shall be relieved of its contractual responsibilities for injury to persons or damage to property which occurs after the formal Acceptance of the project by the City.

- 2. The total compensation to be paid to the Contractor shall be determined by the

Director on the basis of the following:

- a. The reasonable cost to the Contractor, without profit, for all Work performed under the Contract, including mobilization, demobilization and Work done to secure the project for termination. Reasonable cost will include a reasonable allowance for project Overhead and general

administrative Overhead not to exceed a total of seven percent (7%) of Direct Costs of such Work.

- b. A reasonable allowance for profit on the cost of the Work performed as determined under subsection (a), provided the Contractor establishes to the satisfaction of the Director that it is reasonably probable that it would have made a profit had the Contract be completed and provided further, that the profit allowed shall in no event exceed four percent (4%) of said cost.
- c. The reasonable cost to the Contractor of handling material returned to the vendor, delivered to the Department or otherwise disposed of as directed by the Director.
- d. A reasonable allowance for the Contractor's administrative costs in determining the amount payable due to termination of the Contract.

All records of the Contractor and the Contractor's Subcontractors, necessary to determine compensation in accordance with this Section, shall be open to inspection or audit by representatives of the Department at all times after issuance of the notice that the Contract is to be terminated and for a period of three (3) years, and such records shall be retained for that period.

After Acceptance of the Work by the Director, the Director may make payments on the basis of interim estimates pending issuance of the Final Statement, when in his or her opinion the amount thus paid, together with all amounts previously paid or allowed, will not result in total compensation in excess of that to which the Contractor will be entitled. All payments, including payment upon the Final Statement, shall be subject to deduction for prior payments and amounts, if any, to be kept or retained under the provisions of the Contract.

In the event that the City terminates this Contract under Section 6-1.10B below and it is determined for any reason that there was not sufficient cause to do so, the City's termination automatically will convert to a termination for convenience under this section and the terms and conditions outlined in this section automatically will be applied to effectuate the Contract termination. Thus, damages to which a Contractor may be entitled as a result of an improper default termination will be limited to the amounts provided for in this section.

The provisions of this section shall be included in all subcontracts.

6-1.10B **TERMINATION OF AGREEMENT - FOR CAUSE.** An

"Event of Default" as referred to in this section shall occur if the Contractor:

1. Fails to maintain progress of the Work in accordance with the requirements of the Contract Documents; or
2. Fails to prosecute the Work or any of its components in accordance with the Contract Documents; or
3. Persistently or repeatedly fails or refuses to supply sufficient properly skilled workers or proper material to permit the performance of the Work in accordance with the Contract Documents; or
4. Fails to make prompt payment to Subcontractors or Suppliers in accordance with the respective agreements between the Contractor and the Subcontractor and Contractor and Supplier; or
5. Fails to comply with applicable laws, ordinances or rules, regulations or orders of a public authority having jurisdiction over the Work; or
6. Abandons, assigns or sublets the Contract without approval of the City; or
7. Becomes bankrupt or is subject to appointment of a receiver on behalf of the

Contractor; or

8. Otherwise is guilty of a substantial breach of a provision of the Contract Documents.

Upon the City's reasonable belief that there has been an Event of Default by the Contractor, the City may elect to give the Contractor written notice thereof. The Contractor thereafter shall cure the default as soon as possible and in no event after ten (10) Days from the Contractor's receipt of the City's written notice.

If the Contractor does not timely cure its default, the City may, without waiver of any of its other rights and remedies, elect to terminate the Contract, or portion thereof.

Upon the City's election to terminate the Contract, or portion thereof, the City shall have the right to complete the Work, or portion involved, by whatever means and methods it deems expedient, including the hiring of others on such terms as the City deems advisable. The City shall have the right to take possession of the Contractor's materials, plant, tools, equipment and property of any kind provided by or on behalf of the Contractor for the purpose of the Work, or a portion of them, without being responsible to the Contractor for wear and tear. The Contractor shall have no rights in such property during its use by the City. The City shall not be required to obtain the lowest prices for completing the Work or a portion of it but shall make such expenditures as, in the City's sole judgment, best accomplish such completion.

The expense of completing such Work or portion thereof, together with a reasonable charge for engineering, managerial and administrative services, as certified by the City, shall be charged to the Contractor, and the expense so charged shall be deducted by the City out of such monies as may be due or may at any time thereafter become due to the Contractor. In case such expense is more than the sum which otherwise would have been payable to the Contractor under the Agreement, then the Contractor or its surety or sureties shall promptly pay the amount of

such excess so due. When the City terminates the Contract under this section, the Contractor shall not be entitled to receive any further payments until the Work is completed and there has been a final settlement of costs of completing the Work covered by such notice of default.

The City will issue to the Contractor a written notice specifying that the Contract, or portion thereof, is terminated. Upon receipt of said written notice and, except as otherwise directed in writing by the City, the Contractor shall:

1. Stop all Work under the Contract; or if partial termination, stop Work relating to the terminated portion of the Agreement;
2. Perform Work the City deems necessary to secure the Work Site for termination including measures to leave the Work Site in a safe condition;
3. Remove equipment from the site of Work, as specified by the City;
4. Take such action as is reasonably necessary to protect materials from damage;
5. Notify all Subcontractors and Suppliers that the Contract or portion thereof is being terminated and that their contracts or orders are not to be further performed unless otherwise authorized in writing by the City;
6. Provide the City with an inventory list of all materials previously produced, purchased or ordered from Suppliers for use in the Work and not yet used in the Work, including its storage location, and such other information as the City may request;
7. Dispose of materials not used in the Work as directed by the Director. It shall be the Contractor's responsibility to provide the City (a) with good title to all materials purchased by the City hereunder, including materials for which partial payment has been made by the City and (b) with bills of sale or other documents of title for such

materials;

8. Subject to the prior written approval of the City, settle all outstanding liabilities and all claims arising out of Subcontractors or orders for materials terminated hereunder. To the extent directed by the City, the Contractor shall assign to the City all rights, title and interests of the Contractor under subcontracts or orders for materials terminated hereunder. The City shall be at liberty to negotiate with and engage any Subcontractors who had contracted with the Contractor for the Work;
9. Furnish the City with the documentation required to be furnished by the Contractor under the provisions of the Contract Documents, including, on projects as to which Federal funds are involved, all documentation required under the Federal requirements included in the Agreement; and
10. Take such other actions as the City may direct.

If only a portion of the Work has been terminated, the Contractor shall perform the remainder of the Work in conformity with the Contract Documents and in such a manner as not to interfere with the City or others in their performance and completion of the portion of the Work which was terminated.

The City may recover from the Contractor the amount of any loss or damage, including consequential damages, suffered or incurred as a result of the Contractor's default.

For Council Approval
Not For Bidding

SECTION 7

ACCEPTANCE AND PAYMENT

7-1.01 **ACCEPTANCE.** When the Contractor believes that the entire Work is fully and finally completed, including the satisfactory completion of inspections, tests, and documentation specified in the Contract Documents and completion of all punch list and clean-up items, the Contractor shall submit to the City a written request for final Acceptance within fifteen (15) Days thereafter, specifying that the Work is fully and finally completed and the date on which it was completed. Within thirty (30) Days after receipt of the request for final Acceptance, the City will inspect the Work and will either:

1. Reject the request for final Acceptance, specifying the defective and/or uncompleted portions of the Work; or
2. Notify the Contractor that the Work will be accepted by Resolution of the City Council of the City of Roseville, and a Notice of Completion will be caused to be recorded by the City Clerk; or
3. Notify the Contractor that the Work has been accepted by the City but no Notice of Completion will be recorded.

If the City rejects the request for final Acceptance, the Contractor shall promptly remedy the defective and/or uncompleted portions of the Work. Thereafter, the Contractor shall again submit a written request for final Acceptance of the Work, specifying a new date based on the date the defective and/or uncompleted portions of the Work were corrected. Thereafter, the foregoing procedure shall apply successively until the City has verified that the Work is fully and finally completed and accepted the Work by Resolution of the City Council or by written

notification from the Director. Immediately upon such Acceptance, the Contractor shall be relieved of the duty of maintaining the Work as a whole.

All warranties commence upon final Acceptance of the Work. The City's final Acceptance of the Work shall not be construed as an acceptance by the City of any latent defects discovered with regard to the Contractor's work. Furthermore, Contractor's obligations under Section 5-1.22 "Responsibility for Damage and Indemnification" shall still remain applicable after the City's grant of final Acceptance of the Work.

Prior to final Acceptance, the Contractor shall submit to the City the Record Documents and Operation and Maintenance Manuals as specified in the Contract Documents.

7-1.02 **SCOPE OF PAYMENT.** The Contractor shall accept the compensation provided in the Contract as full payment for furnishing all labor, materials, tools, equipment, and incidentals necessary to the completed Work and for performing all Work contemplated and embraced under the Contract; also for loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the Work until the Acceptance by the Director and for all risks of every description connected with the prosecution of the Work, also for all expenses incurred in consequence of the suspension or discontinuance of the Work as provided in the Contract; and for completing the Work according to the Contract. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective Work or material.

No compensation will be made in any case for loss of anticipated profits.

7-1.03 **NOTICE OF POTENTIAL CLAIM.** The Contractor shall not be entitled to the payment of any additional compensation for any act or failure to act by the City,

including failure or refusal to issue a Change Order, or for the happening of any event, thing, occurrence or other cause unless the Contractor has given the City due written Notice of Potential Claim as hereinafter specified, provided, however, that compliance with this Section 7-1.03 shall not be a prerequisite as to matters within the scope of the notice provisions in Section 6-1.07, "Time of Completion," or the notice provisions in Section 6-1.08, "Liquidated Damages," of these General Conditions, nor to any claim which is based on differences in measurement or errors of computation as to correct quantities.

The written Notice of Potential Claim shall set forth the reasons for which the Contractor believes additional compensation will or may be due, the nature of the costs involved, and, insofar as possible, the amount of the potential claim. The said Notice as above required must have been given to the Director prior to the time that the Contractor shall have performed the Work giving rise to the potential claim for additional compensation, if based on an act or failure to act by the Director, or in all other cases within seven (7) Days after the happening of the event, thing, occurrence or other cause giving rise to the potential claim.

If the Notice of Potential Claim does not include complete information about the claim or the parties do not execute a Contract Change Order in connection with the Notice of Potential Claim, Contractor shall submit complete information about its claim for additional compensation and/or extension of time for performance within fifteen (15) Days after such work is performed. Failure to provide written notice of claim prior to undertaking such work or failure to timely submit a complete and specific information about the claim for additional compensation and/or extension of the time for performance shall be deemed a waiver and abandonment of such claim.

If there is a dispute over any claim, the Contractor shall continue to Work during the dispute resolution process in a diligent and timely manner as directed by the City, and shall be

governed by all applicable provision of the Agreement.

The Contractor shall maintain cost records of all Work that is the basis of any dispute. On a daily basis, Contractor shall submit to City completed daily forms, the format of which will be acceptable to the City, with respect to the Contractor's costs of performing the disputed work. These daily forms shall itemize all of Contractor's costs in performing the disputed work, including, but not limited to, all costs relating to materials, labor and equipment with respect to the disputed work. These daily forms shall provide names or identification and classification of affected workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment and hours operated. Said daily work forms shall be duly signed and verified by the Contractor or its authorized representative. The City's receipt of the Contractors' daily forms shall not constitute an approval of the Contractor's claim. Contractor's failure to submit the daily forms on a daily basis shall constitute a waiver of the Contractor's right to claim any additional compensation for the disputed work.

Each Contractor claim shall include full and complete information concerning the Claim. Contractor shall provide a clear, concise recital of the basis, upon which the claim is asserted, including a designation of the provisions of the Contract Documents upon which the claim is based. Contractor shall also include a statement as to the amount of time and/or compensation sought pursuant to the claim; if Contractor's claim arises from an ongoing occurrence, Contractor shall so state in its claim, including a description of the specific Work activities affected by the claim. All costs, expenses or damages and extensions of time claimed shall be described in reasonable detail under the circumstances together with complete supporting documentation.

The City will review any timely Notice of Potential Claim and supporting information

submitted by Contractor. In conducting this review, the City shall have the right to require the Contractor to submit such additional or supporting documents, data and other information as the City may require.

If an agreement can be reached which resolves the Contractor's claim, the parties will execute a Contract Change Order to document the resolution of the claim. If the parties cannot reach agreement with respect to the Contractor's claim, the Contractor shall still be obligated to comply with the claim identification provisions identified in these General Conditions, including but not limited to Section 7-1.04.

It is the intention of this Section 7-1.03 that differences between the parties arising under and by virtue of the Contract be brought to the attention of the Director at the earliest possible time in order that such matters may be settled, if possible, or other appropriate action promptly taken. The Contractor hereby agrees that it shall have no right to additional compensation for any Claim that may be based on any such act, failure to act, event, thing or occurrence for which no timely written Notice of Potential Claim as herein required was filed.

7-1.04 **CLAIMS.** Contractor must submit all Claims, for which it has previously submitted a Notice of Potential Claim, prior to Acceptance of the Work. Each such Claim must be sent to the City by registered mail or certified mail with return receipt requested and must contain reasonable documentation to support the Claim.

Upon receipt of a Claim, the City shall conduct a reasonable review of the Claim and, within a period not to exceed forty-five (45) Days, or such further time as mutually agreed upon or necessary pursuant to Public Contract Code Section 9204, the City shall provide the Contractor a written statement identifying what portion of the Claim is disputed and what portion is undisputed. If the City does not respond to a Claim from the Contractor within the time

specified herein, such Claim shall be deemed rejected in its entirety.

Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) Days after the City issues its written statement.

If the Contractor disputes the City's written response, or if the City does not respond within the time specified herein, the Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the City shall schedule a meet and confer conference within thirty (30) Days for settlement of the dispute.

Within ten (10) business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the City shall provide the Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the Claim shall be processed and made within sixty (60) Days after the City issues its written statement. Any disputed portion of the Claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the City and the Contractor sharing the associated costs equally. The City and the Contractor shall mutually agree to a mediator within ten (10) business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the Claim remaining in dispute shall be resolved in accordance with Section 7-1.05 below.

7-1.05 **DISPUTE RESOLUTION PROCEDURE.** All Claims not resolved

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pursuant to Section 7-1.04, shall be resolved pursuant to Public Contract Code Section 10240, et seq.

7-1.06 **STOP PAYMENT NOTICES.** The City, by and through the Department or other appropriate office or officers, may at its option and at any time retain out of any amounts due the Contractor, sums sufficient to cover claims, filed pursuant to Civil Code Section 9350, et seq., including an amount to provide for the reasonable cost of any litigation thereunder.

7-1.07 **PROGRESS PAYMENTS.** Within fifteen (15) Days after the effective date in the Notice to Proceed, but in any event prior to Contractor's first Application for Payment, the Contractor shall submit to the City a detailed Schedule of Values.

Upon its approval, the Schedule of Values will form a basis for determining the compensation payable to the Contractor based on its actual progress of Work with respect to each Lump Sum bid item. The City, prior to any progress payment being made, must approve the Schedule of Values.

At the Director's discretion the approved Schedule of Values may be used as the basis for calculating the adjustment in compensation for a lump sum bid item due to changes ordered by the Director. When an ordered change increases or decreases the quantities shown in an approved Schedule of Values, at the Director's discretion, the adjustment in compensation may be determined in the same manner specified for increases and decreases in the quantity of a bid item of work in accordance with Section 3-1.05(B), "Contract Price Adjustment," of these General Conditions.

The Contractor once in each month shall submit an Application for Payment, for approval by the Director. Contractor's Applications shall be based on the Schedule of Values submitted to the City. These applications shall be supported by: (1) documentation requested by the City to

substantiate the payment request; (2) statutory releases from Contractor and all Subcontractors and suppliers pursuant to Civil Code Sections 8132 and 8138; and (3) certified payroll records for the period for which payment is requested. Specifically, the Contractor will submit conditional waivers upon progress payment executed by all contractors and suppliers that will be receiving sums sought in the instant payment request and also submit unconditional waivers upon progress payment executed by all contractors and suppliers that have been paid to the date of the payment request. The Contractor shall certify that the Work for which payment is requested has been accomplished. When requested by the City, the Contractor shall submit receipts, invoices and other documentation that the City requires to be furnished for purpose of evaluating the application.

The City will pay the Contractor within thirty (30) Days after its receipt of an undisputed and properly submitted Application for Payment, after deducting all previous payments, retention, and other sums as described in the Contract Documents. Within seven (7) Days of its receipt of the Contractor's Application for Payment, the City will determine whether it complies with the provisions of the Contract Documents. As appropriate, the City will return the application to the Contractor accompanied by a document prepared by the City setting forth the reasons for the rejection. Thereafter, the Contractor shall correct and resubmit the Application for Payment. Progress payments may be withheld for Work that is not performed in accordance with the Contract Documents.

The City may deduct the following from each progress payment:

1. An amount equal to one hundred and twenty-five percent (125%) of the amount claimed under any stop payment notice or other lien filed against the Contractor, which includes an amount to provide for the reasonable cost of any litigation

thereunder.

2. Any Liquidated Damages or Assessments that have accrued as of the date of the Application for Payment.
3. Any sums expended by the City in performing any of the Contractor's obligations under the Agreement that the Contractor has failed to perform.
4. Any other sums that the City is entitled to recover from the Contractor under the terms of the Contract including damages to the City's property.
5. The failure of the City to deduct any of the above identified sums from a progress payment shall not constitute a waiver of the City's right to such sums.

No such estimate or payment shall be construed to be an acceptance of any defective Work or improper materials.

Under no circumstances will the City make payment to unlicensed Contractors. As a condition of payment, the Contractor is required to maintain the applicable Contractor's license as identified in the Notice to Contractors for the duration of the Work.

7-1.08 **PAYMENT FOR MATERIALS AND EQUIPMENT ON HAND.**

Partial payments may be made to the extent of seventy-five percent (75%) of the cost of materials and equipment plus delivery to be incorporated in the Work, provided that such materials and equipment meet the requirements of the Contract Documents and are delivered to acceptable sites on the plant site or at other sites in the vicinity that are acceptable to the City and only with the prior written approval by the City. Such delivered costs of stored or stockpiled materials and equipment may be included in the next progress payment after the following conditions are met:

- A. Equipment and materials will only be eligible if given conditional or final

Acceptance by the Director and are in apparent compliance with favorably reviewed Submittals.

B. Only equipment or materials which have received favorable review of Shop Drawings will qualify.

C. The material or equipment has been stored or stockpiled adequately protected against damage in a manner acceptable to the Director at an approved site.

D. The Contractor has furnished the Director with acceptable evidence of the quantity and the quality of such stored or stockpiled materials or equipment with identification of where they will be incorporated into the project with Specification reference.

E. The Contractor has furnished the Director with satisfactory evidence that the material or equipment and transportation costs have been paid.

F. The Contractor has furnished the City legal title (free of liens or encumbrances of any kind) and lien releases to the material or equipment so stored or stockpiled.

G. The Contractor has furnished the City evidence that the material or equipment so stored or stockpiled is insured against loss by damage to or disappearance of such materials at any time prior to use in the Work.

It is understood and agreed that the transfer of title and the City payment for such stored or stockpiled materials or equipment shall in no way relieve the Contractor of its responsibility for furnishing and placing such materials or equipment in accordance with the requirements of the Contract Documents.

In no case will the amount of progress payments for materials or equipment on hand exceed the Contract Price for such materials or equipment or the Contract Price for the Contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant

materials.

The Contractor shall bear all costs associated with the progress payment of stored or stockpiled materials or equipment in accordance with the provisions of this Section.

7-1.09 **RETENTION ON PROGRESS PAYMENTS.** From each progress payment estimate, five percent (5%) will be deducted and held in retention by the City. The remainder, less any deductions described in Section 7-1.07, "Progress Payments," of these General Conditions, will be paid to the Contractor as progress payments.

Pursuant to Public Contract Code Section 22300, the successful Bidder may submit Securities in lieu of retention payments by the City. Upon the Contractor's request, the City will make payment of funds withheld from progress payments, pursuant to the requirements of California Public Contract Code Section 22300, if the Contractor deposits in escrow with the City or with a bank acceptable to the City, securities eligible for investment under California Government Code Section 16430, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the City, upon the following conditions:

1. The Contractor shall bear the expenses of the City and the escrow agent in connection with the escrow deposit made.
2. Securities or certificates of deposit to be placed in escrow shall be of a value at least equivalent to the amounts of retention to be paid to the Contractor pursuant to this section.
3. Contractor shall enter into an escrow agreement satisfactory to the City, which agreement shall be substantially similar to the form provided in California Public Contract Code section 22300.

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4. The Contractor shall obtain the written consent of the surety to such agreement.

7-1.10 **FINAL PAYMENT.** Final payment will be made only after Contractor has achieved Final Completion of the Work pursuant to the provisions of Section 7-1.01, “Acceptance,” of these General Conditions. Before final payment can be made, the Contractor shall have furnished the City with the following:

1. All Record Documents, catalogues, instruction sheets and information as required by the Contract Documents.
2. Conditional Waivers and Releases Upon Final Payment executed by Contractor and all Subcontractors and Suppliers, as provided by Civil Code Section 8136. Unconditional Waivers and Releases Upon Final Payment, as provided in Civil Code Section 8138, executed by Contractor and all Subcontractors and Suppliers, must be provided for all Subcontractors and Suppliers that have been paid in full.

Within thirty (30) Days of the date of the City’s Acceptance of the Work, the Contractor shall prepare and submit a Final Invoice, showing the proposed total amount due the Contractor, segregated by Bid item quantities, Change Order Work, and other basis for payments; deductions made or to be made for prior payment; and amounts previously retained. Prior invoices and payments shall be subject to correction in the proposed Invoice for Final Payment. Payments to the Contractor will be made only for actual quantities of the Contract items of work constructed in accordance with the Contract Documents.

The City will review the Contractor’s proposed Final Invoice and necessary changes or corrections will be forwarded to the Contractor. Within ten (10) Days thereafter, the Contractor

shall submit a revised proposed Final Invoice incorporating changes or corrections made by the City together with any new claims resulting therefrom. Upon approval by the City, the corrected proposed Final Invoice will become the approval Final Invoice.

If agreements are reached on all questions regarding the Final Invoice, the City will pay the entire sum found due on the approved application. However, the City will withhold sums sufficient to pay all unsettled claims for which stop payment notices have been filed pursuant to Section 9350, et seq. of the California Civil Code, together with the reasonable cost of any litigation thereunder.

Final payment will be made within thirty (30) Days after receipt of an approved Final Invoice and other required Submittals referenced above or within sixty (60) Days after Acceptance of the work by the City, whichever is later, provided, however, that if an approved Final Invoice has not been submitted within sixty (60) Days after Acceptance of the Work by the City, the City may elect to make payment of sums not in dispute without prejudice to the right of either the City or the Contractor in connection with such disputed sums. Notwithstanding the foregoing, if a Notice of Completion is recorded, final payment shall not be made prior to the expiration of the thirty-five (35) calendar day lien period. The start of this lien period is the date the Placer County Recorder's Office records the Notice of Completion.

The City may withhold from the Final Payment an amount not to exceed one hundred fifty percent (150%) of any amount in dispute between the City and the Contractor.

The making of Final Payment shall not operate to release the Contractor or its sureties from obligations arising under the Contract, the Contract bonds and warranties as herein provided. Specifically, the making of final payment shall not constitute a waiver and release of claims by the City arising from:

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1. Unsettled or future liens;
2. Failure of the Work to comply with the requirements of the Contract Documents;
3. The terms of any warranties required by or contained in the Contract Documents;
4. The right to any insurance proceeds or the right to make any insurance or bond claims;
5. Any claims with respect to Contractor's obligations of indemnity with respect to claims asserted by third parties; or
6. Any latent deficiencies with the Work or Contractor's fraud.

7-1.11 **CLERICAL ERRORS.** Notwithstanding the provisions of Section 7-1.10, "Final Payment," of these General Conditions, for a period of three (3) years after Acceptance of the Work, all estimates and payments made pursuant to said Section 7-1.10, are subject to correction for clerical errors in the calculations involved in the determination of quantities and payments. The Contractor and the City agree to pay to the other any sum due under the provisions of this Section 7-1.11, provided, however, if the total sum to be paid is less than \$100, no such payment shall be made.

7-1.12 **WARRANTY.** Notwithstanding inspections and Acceptance by the City of Work furnished under the Contract Documents, the Contractor hereby unconditionally guarantees that all materials and equipment furnished will be of good quality and new, that the Work will be free from defects in workmanship and materials and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.

This warranty by the Contractor is in addition to any warranties or guarantees required elsewhere in the Contract Documents. This warranty shall be in effect notwithstanding any disclaimers, or limiting or conditional terms contained in such separate warranties furnished by manufacturers or suppliers.

The Contractor hereby agrees to repair or replace any and all Work, together with any other adjacent Work which may be displaced in so doing, that may prove to be not in accordance with the requirements of the Contract or that may be defective in its workmanship or material during the greater of a period of one (1) year after Acceptance of the Work by the City or the period specified in the Special Conditions, without any expense whatsoever to the City, ordinary wear and tear and unusual abuse or neglect excepted.

The Contractor further agrees, that within ten (10) Days after being notified in writing by the Department of any Work not in accordance with the requirements of the Contract Documents or of any defects in the Work, the Contractor will commence and prosecute with due diligence all Work necessary to fulfill the terms of this warranty, and to complete such Work within a reasonable period of time. In the event Contractor fails to comply, it does hereby authorize the Department to proceed to have such Work done at the Contractor's expense and the Contractor will honor and pay the cost and charges therefore upon demand. The Department shall be entitled to all costs and expenses, including reasonable attorneys' fees, necessarily incurred upon the Contractor's refusal to honor and pay the above costs and charges.

All warranties set forth in the Contract Documents shall be deemed cumulative and not alternative or exclusive. Nothing contained in this section shall be construed to establish a period of limitation with respect to any other obligation, which Contractor has under the Contract Documents or under any separate warranty or guaranty required thereby. The establishment of a

specific warranty period relates only to the specific obligation of Contractor to correct defective Work, and it has no relationship to the time within which its obligation to comply with the Contract Documents or applicable provision of law may be sought to be enforced, nor to the time within which proceedings may be commenced to establish Contractor's liability with respect to its obligations other than specifically to correct the Work. Without limiting the foregoing, it is understood and agreed that Contractor shall remain responsible for latent defects with its work, regardless of the expiration of any warranty period set forth in the Contract Documents.

7-1.13 **WARRANTY OF TITLE.** No material, supplies, or equipment for the Work under this Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants good title to all material, supplies, and equipment Installed or incorporated in the Work and agrees upon completion of all Work to deliver the Premises, together with all improvements and appurtenances constructed or placed thereon by it, to the City free from any claim, liens, security interest, or charges, and further agrees that neither the Contractor nor any person, firm, or corporation furnishing any materials or labor for any Work covered by this Contract shall have any right to a lien upon the Premises or any improvement or appurtenances thereon. Provided, that this shall not preclude the Contractor from Installing metering devices and other equipment of utility companies, the title of which is commonly retained by the utility company. In the event of the Installation of any such metering device or equipment, the Contractor shall advise the City as to the legal owner thereof. Nothing contained in this paragraph, however, shall defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection or any rights under any law permitting such persons to look to funds due the Contractor in the hands of the City.

The provisions of this paragraph shall be inserted in all subcontracts and material Contracts, and notice of its provisions shall be given to all persons furnishing materials for the Work when no formal Contract is entered into for such materials.

[END OF GENERAL CONDITIONS]

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SUPPLEMENTAL CONDITIONS

Project: Cresthaven Tennis Court Renovation

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Scope of Supplemental Conditions

1. The Work shall be performed in accordance with the General Conditions and Department Standards, except as the General Conditions may be modified by the following additional City Standards, incorporated herein by this reference, if so indicated.

	COMMUNITY DESIGN GUIDELINES 311 Vernon Street, Roseville, CA 95678
	SPECIFICATIONS FOR COMMERCIAL CONSTRUCTION (ELECTRIC) 2090 Hilltop Circle, Roseville, CA 95747
X	PARKS CONSTRUCTION STANDARDS 316 Vernon Street, Suite 400, Roseville, CA 95678
X	DESIGN AND CONSTRUCTION STANDARDS 311 Vernon Street, Roseville, CA 95678
	OTHER

Above documents are available at: www.roseville.ca.us.

2. Numbering in these Supplemental Conditions conforms to that in the General Conditions. The existence of a section in these Supplemental Conditions means that the corresponding section in the General Conditions is modified in some respect. Unless otherwise specified, the modified General Condition is deleted entirely and the provisions of these Supplemental Conditions are substituted.

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SECTION 1. DEFINITIONS AND TERMS

1-1.24 **DEPARTMENT.** Section 1-1.24 of the General Conditions is amended to include the following:

The Department for Contract Administration is the PARKS, RECREATION & LIBRARIES Department of the City of Roseville.

1.1.56 **QUALIFIED BIDDERS.** A Class "A" General Engineering license is preferred. A Class "B" General Building or Class "C27" Landscaping license is allowed if, 1) a majority of work is performed by the general contractor; 2) the general contractor has successfully completed other park work equal to the size and scope of the current project within the last three years; and 3) qualified subcontractors for specialties are used.

1.1.57 **QUALIFIED SUBCONTRACTOR.** A licensed contractor in good standing whose trade is required in order to complete the project outline in the plans and specifications and with a minimum of three years experience for work of similar size and scope.

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SECTION 2. CONTROL AND SCOPE OF THE WORK

2-1.08 **SUBMITTALS.** Section 2-1.08 of the General Conditions is amended to include the following:

The time allowed for review of each submittal is 14 Days after receipt of the submittal by the Director.

2.1.28 **PROJECT DOCUMENTS.** Potential bidders are advised to obtain all documents and specifications related to this project directly from the City of Roseville. The City of Roseville does not guarantee the accuracy of any forms, plans, or project manuals obtained through outside sources other than the City of Roseville. Furthermore, the City does not guarantee the distribution of any addendums or the accuracy of their content if obtained from a third party. Bidders expressly assume the risk that their bid will be rejected from the use of plans and manuals obtained from third parties other than the City of Roseville

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SECTION 3. CHANGES IN THE WORK

There are no amendments to the General Conditions.

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SECTION 4. CONTROL OF MATERIALS

There are no amendments to the General Conditions.

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SECTION 5. LEGAL RELATIONS AND RESPONSIBILITY

5-1.14 **AIR POLLUTION CONTROL AND ASBESTOS.** Section 5-1.14 of the General Conditions is amended to include the following:

To the best of the City's knowledge, asbestos is not present in the vicinity of the Project. Additional information shall be made available to Contractor upon request.

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SECTION 6. PROSECUTION AND PROGRESS

6-1.04 **PROGRESS SCHEDULE.** Section 6-1.04F of the General Conditions is amended to include the following:

Progress schedules showing project completion dates more than 0 Days earlier than specified in Section 6-1.07 shall be rejected.

6-1.07 **TIME OF COMPLETION.** Section 6-1.07 of the General Conditions is amended to include the following:

The Contractor shall begin Work within 10 business days after receiving a Notice to Proceed and shall diligently prosecute the Work to completion. The Work shall be completed within 50 business days of the Notice to Proceed.

If landscaping plants require an establishment period, that period will be 90 calendar days. Start of the establishment should be as outlined in the Specifications.

6-1.08 **LIQUIDATED DAMAGES.** Section 6-1.08 of the General Conditions is amended to include the following:

The amount of Liquidated Damages is the sum of \$ 800 per Day.

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SECTION 7: ACCEPTANCE AND PAYMENT

There are no amendments to the General Conditions.

[END OF SUPPLEMENTAL CONDITIONS]

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SPECIFICATIONS

Project: Cresthaven Tennis Court Renovation

SPEC

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SECTION 01 10 00 SUMMARY OF WORK

PART 1 - GENERAL

1.01 General

- A. The requirements set forth in the General Conditions shall be in addition to the standards provided herein.
- B. The requirements set forth in the Special Conditions shall be in addition to the standards provided herein.

1.02 Project Description

- A. Project Name and address:

Cresthaven Tennis Court Renovation Project
Jack Wallace Park at Cresthaven
401 Community Drive
Roseville, CA 95678

- B. Project description/scope of work:

The scope of this project includes, but is not limited to removal and replacement of the existing tennis court asphalt and surfacing, new striping to include one tennis court and two pickleball courts with nets, and new seating. The project also includes new chain link fence and windscreen.

- C. The Contractor, prior to submission of his bid, shall visit the site and become familiar with the physical site conditions, the plans and specifications. All existing site conditions, apparent in a detailed, on-site inspection, shall be a part of the project. Submission of a bid shall represent the Contractor's acknowledgment of the existing site conditions and its effect on the implementation of the contract documents.

1.03 Engineering

- A. Field Engineering, as a part of this contract, shall include:
 - 1. Layout of the work and establishment of lines and grades.
 - 2. Said work to be performed by a California Registered Civil Engineer or a California licensed Land Surveyor.
 - 3. When discrepancies between the drawings and actual site conditions are discovered, notify the Inspector for instruction on how to proceed.
 - 4. All work shall:

- a) Establish indicated layout in relation to the property survey and existing reference points.
- b) Establish and preserve permanent reference points during the course of construction.
- c) Set locations and elevations of all site elements as required for proper completion of the work.

1.04 Permits, Fees and Notices

- A. The Contractor and/or his assigned Subcontractors shall obtain any and all required permits (beyond those provided in the Appendix) from all governing authorities, including other City Departments, prior to start of construction.

1.05 Construction Plans

- A. Any discrepancies or omissions found in the Contract Documents shall be reported to the City's project manager immediately. The City's project manager will clarify discrepancies or omissions, in writing, within a reasonable time.
- B. In resolving inconsistencies among two or more sections of the Contract Documents, precedence shall be given in the following order:
 - 1. Notice to Contractors
 - 2. Special Provisions
 - 3. City of Roseville Parks Construction Standards
 - 4. City of Roseville Design and Construction Standards
 - 5. Drawings

Addenda shall take precedence over all sections referenced therein. Figure dimensions on Drawings shall take precedence over scale dimensions. Detailed Drawings shall take precedence over general Drawings.

1.06 Definitions

- A. The term "accepted" where used within, shall mean accepted in writing by the City of Roseville's Project Manager.
- B. The term "Inspector", where noted, shall mean the project representative, appointed by the City of Roseville, who will oversee the project on a day-to-day basis.
- C. The term "Project Manager", where noted, shall mean the project representative appointed by the Parks Department.
- D. The term "Consultant", where noted, shall mean the prime Consultant listed on the cover sheet of these Specifications.
- E. The term "accepted equal", where used herein, shall mean the equal in the opinion of the Project Manager, in consultation with the Consultant, when necessary, and as accepted in writing by the Project Manager.

- F. The term "Project Owner", where used herein, shall mean the landowner or developer.
- G. The term "provide", where used herein, shall mean furnish and install complete.
- H. The term "as selected", where used herein, shall mean as selected by the Consultant and as accepted by the Project Manager.
- I. The term "substantially complete", where used herein, shall mean the state of which the project can be used in the manner of which it is intended with the exception of minor items as determined by the Project Manager.
- J. See Section 1 of the General Conditions for additional definitions and terms.

1.07 Standards

- A. Numerous standards are referenced in these contract documents. The referenced standards shall be the current edition as of the date of these contract documents. Also, see Section 4 - 1.02 of the General Conditions.
- B. The codes adopted by the City, County, State and federal agencies shall govern minimum requirements for this project. Where codes conflict with these Specifications, the more stringent shall apply, and such conflicts shall be brought to the attention of the Project Manager. Caltrans Standards shall be applied where specifically referenced. In the absence of specific reference requirements in the contract documents, the applicable codes shall govern.
- C. In addition to the standards noted in individual sections of these Specifications, standards of the following organizations shall be noted by initials only.
 - 1. ANSI: American National Standards Institute.
 - 2. ASTM: American Society for Testing and Materials.

1.08 Submittals

- A. All submittals shall be submitted at one time within ten (10) working days from issuance of Notice to Proceed. The review time for submittals shall be as noted in Section 2 - 1.04 of the Special Conditions. Items returned for re- submittal shall be returned to the City within two weeks
- B. The Contractor shall include a cover sheet indicating the following (A sample is provided in Section 5: Forms):
 - 1. Drawing sheet or specification section reference (by section, paragraph and sub-paragraph numbers);
 - 2. Item description;
 - 3. Indication whether this item is "as specified" or "proposed substitution" and
 - 4. A space for itemized response summary, e.g. "reviewed" or "resubmit".
- C. Contractor shall submit a minimum of two copies/samples of each submittal. It shall be the Contractor's responsibility to ensure that the summary sheet and the appropriate number of copies are included in the submittal package.

Incomplete submittal packages (i.e., the lack of a summary sheet or lack of the appropriate number of copies) will not be reviewed.

- D. Proposed substitution requests must include a comparison between the originally specified item and the proposed substitute. The burden of proof of compliance for proposed substitutions with project requirements rests with the Contractor. Coordination of the installation of accepted substitutions, including incidental changes/modifications to accommodate proposed products shall be at no additional cost to the Owner.
- E. Where required in specified Section of these Specifications, submittals shall include proof of order of site furnishings, play equipment or other materials within two weeks (ten working days) from issuance of Notice to Proceed. Submittals of orders shall be made at one time. Exceptions will be considered, with justification.

1.09 Tests

- A. In addition to Section 4 - 1.03 of the General Conditions, testing and inspections may be performed by a private testing laboratory. The testing laboratory, provided by the City, shall be under the direction of a California registered civil engineer. All work shall conform to requirements set forth by ASTM B329, and shall be acceptable to the City.
- B. Copies of the laboratory reports/results of each test or inspection shall be provided to the Project Manager, Inspector and Contractor.

1.10 Temporary Facilities

- A. Sanitary provisions shall be the responsibility of the Contractor. Existing restroom facilities shall be not utilized by the Contractor, his Sub-contractors, or employees thereof, unless specifically accepted by the Project Manager. Provide chemical toilets or water closets and urinals connected to the sewer in a location accepted by the Project Manager.
- B. Barricades shall be the responsibility of the Contractor and shall be erected as necessary to protect the property, the construction and the public from hazards due to construction.
- C. Signs, other than those identified in these Specifications, shall be prohibited. Notices, required by law, shall be posted and maintained.

1.11 Utilities

- A. All utility connection fees, meters, and cost of utilities used during the course of construction and establishment are considered a direct cost and are the responsibility of the Contractor until project acceptance.

1.12 Dust/Noise Control Requirements

- A. Dust and other air pollution nuisances on or adjacent to the site shall be abated, per Section 2 - 1.07 of the General Conditions. Dirt shall not be allowed to accumulate on streets or sidewalks nor be washed into sewer. The Contractor shall install silt basin, silt fences or other physical means to prevent winter run-off or dry season flow passing through the site.
- B. Noise from construction operations shall be kept to a minimum. Allowable hours of operations shall be from 7 a.m. to 7 p.m. Monday through Friday. Work on weekends and holidays must be approved by the project manager. Work on weekends and holidays shall not begin before 8 a.m. and must be completed by 8 p.m.

1.13 Tree Replacement Schedule

- A. Trees damaged or removed without prior approval shall be replaced at an inch per inch basis on-site, except otherwise accepted. New stock shall follow the table provided:

Plant Size	Inch Value
3 Five Gallon Stock	One Inch
1 Fifteen Gallon Stock	One Inch
1 24" Box Stock	Two Inches
1 36" Box Stock	Three Inches

1.14 Inspection of Construction

- A. In addition to the routine inspections performed by the Parks Inspector, portions of work may be inspected by the other city departments. Notify the Parks Inspector and Project Manager a minimum of 48 hours prior to date of inspection.
- B. The Parks Inspector shall be the main line of communication between the site superintendent, the project manager and other City department inspectors. Changes in scope of work or standards shall be approved by the project manager.
- C. Refer to the parks inspection record. This shall be issued at the Pre-Construction meeting and shall be utilized by the Contractor throughout the course of construction. A completed "hard card" shall be submitted to the Project Manager along with required turn in items (See 1.15 this section) upon final acceptance of the project. The Notice of Completion shall not be filed until all record documents have been received and accepted.

1.15 Adverse Impacts to Site Conditions Due to Construction

- A. Impacts that affect the site conditions to the detriment of the park or streetscape
Impacts that affect the site conditions to the detriment of the park or streetscape
construction or long term viability of the site shall be mitigated by the contractor

prior to acceptance of the project. Such impacts shall include, but are not limited to:

1. Soil compaction in non-structural areas;
2. Diesel or gas fuel leaks/spillage;
3. Buried concrete or other construction debris;
4. Hazardous material contamination;
5. Lime treatment in planting areas;
6. and more.

1.16 Pre-final (Punch List) Review

- A. Notify, in writing, to the Parks Construction Inspector, that the work is substantially complete. Substantially complete is defined as “the state of work where it may be used in a suitable and intended manner with exception of minor corrections”. Partial acceptances will not be granted. Items to be reviewed as a part of substantial completion include:
 1. All construction items
 2. Installation of all site furnishings, including lights and signs
 3. Seeding or sodding of all turf areas
 4. All planting, including weeding of planted areas
 5. The irrigation system is fully functioning as designed and as confirmed by the landscape irrigation audit.
- B. Upon field confirmation by the Parks Construction Inspector regarding substantial completion, a pre-final (punch list) walk-through will be conducted within seven (7) calendar days of receipt of notification. A formal punch list will be developed at that time. Performance of the pre-final (punch list) review shall not automatically trigger the start of establishment.
 1. If at any point during this review that it becomes apparent that the Contractor has not properly prepared for the site review, the inspection shall immediately be terminated and re-scheduled at such a time as the site has been readied for a review. Any costs for the re-scheduling of the review shall be the responsibility of the Contractor. Lack of site preparation could delay start of the establishment period.
- C. The pre-final (punch list) review shall occur within one (1) business week after the project has been determined as “substantially complete”. Concurrently, the City will make a formal request for all required turn-in items to be submitted to the City. All turn-in items shall be submitted to the City (single point of contact), at one time and only by appointment. Do not drop off the turn-in items at the front counter and without an appointment.
- D. Once all turn-in items have been confirmed to be complete and accurate, the establishment period may be considered to begin. The City shall have sole discretion in determining the appropriateness of the commencement of the

establishment period and shall notify the developer/contractor in writing of the start and end dates. Portions of the project will not be accepted for establishment prior to the substantial completion of the entire project.

1.17 Establishment Period

- A. Not applicable.

1.18 Final Review

- A. One (1) week prior to the end of the establishment period, a final on-site review shall be conducted to review project readiness for final turn-over. All punch list items must be satisfactorily addressed prior to the final review.
- B. The project shall be prepared and cleaned per Section 2 - 1.12 of the General Conditions; the turf shall be mowed; and the irrigation heads shall be adjusted appropriately one day prior to the scheduled final review.
- C. Acceptance of the project shall be considered "field accepted" and a recommendation will be forwarded to the City Council for "final acceptance" per Section 7 - 1.01 of the General Conditions.
- D. An unaccepted project shall extend the establishment period until such time as the unaccepted portions of the project have been reviewed and field accepted by the Inspector and Project Manager.
- E. Turn over for City maintenance shall occur only after:
 - 1. The specified duration of the establishment period has been successfully completed.
 - 2. If required, the deed transferring property ownership, has been recorded at the County.
 - 3. A Certificate of Compliance (COC) for streetscapes or Notice of Completion (NOC) for city built parks has been approved by the City Council.
- F. Contractor shall provide a written guarantee covering all improvements associated with this project. See 1.19 – Warranties and Guarantees.

1.19 Record Documents

- A. Record documents or as-built plans shall be maintained on-site and updated routinely as specified in Section 2 - 1.13 of the General Conditions. Record documents shall include **all items under the contracted scope of work.**
- B. Record documents shall be submitted:
 - 1. one full size set of final as-built drawings (verified/initialed by the Parks Inspector during the establishment period)
 - 2. one set of 11 x 17 reductions of the complete as-built package; and
 - 3. two sets 11 x 17 laminated reductions of the irrigation plan illustrating with colors the individual controller stations; and

4. one USB containing PDF scanned images (in color) of the verified as-built drawings.
5. For City of Roseville CIP projects, SWPP binder.

1.20 Warranties and Guarantees

- A. Warranties are required under various Sections of these Specifications. Prior to final acceptance, the Contractor shall assemble all warranties into a single, bound or stapled package. All warranties shall be clearly labeled and the number of years highlighted. Also, see Sections 7 - 1.10 and 7 - 1.11 of the General Conditions.
1. Warranties for equipment shall be submitted in the manufacturer's standard form and shall be countersigned by the subcontractor or supplier and the Contractor.
 2. All other warranties shall be provided in the following format, written on subcontractor's or supplier's letterhead, signed by the subcontractor or supplier and countersigned by the Contractor:

WARRANTY FOR _____ YEARS

"We hereby warrant that the product which we have installed at project name has been done in accordance with the contract documents, and that the work, as installed will fulfill the warranty requirements included in the Specifications.

We agree to repair or replace any or all of our work, together with any other adjacent work which may be displaced by so doing, that may prove to be defective in its workmanship or material within the warranty period stated above commencing from the date of final acceptance of the above named project by the City of Roseville's City Council, without additional expense to the City, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of failure to comply with the above conditions within thirty (30) days of notification by the City, we collectively or separately do hereby authorize the City to proceed with the repairs or replacement of such defects at our expense. Payment of said costs and charges will be forwarded to the City upon demand.

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Signed: _____
Subcontractor or Supplier _____ Date

Countersigned: _____
Contractor _____ Date

- B. Guarantees shall be a minimum of one (1) year for all plant material, including trees and shrubs. The guarantee shall state that plant materials (trees & shrubs) to be free of all defects or disease and all plants are in a healthy and thriving condition at the completion of the contract. Deciduous plant material shall be warranted beyond the time of contract completion until such time as growth becomes evident.

PART 2 - PRODUCTS

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PART 3 - EXECUTION

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SECTION 01 57 23

STORM WATER POLLUTION CONTROL

PART 1 - GENERAL

1.01 General

- A. The requirements set forth in the General Conditions shall be in addition to the standards provided herein.
- B. The requirements set forth in the Special Conditions shall be in addition to the standards provided herein.

1.02 References

- A. State Water Resources Control Board Order No. 2009-0009-DWQ National Pollutant Discharge Elimination System General Permit No. CAS0000002, for Storm Water Discharges Associated with Construction and Land Disturbance Activities.
- B. CASQA California Stormwater BMP Handbook – Construction, November 2009

1.03 Definitions

- A. NOI: Notice of Intent
- B. NOT: Notice of Termination
- C. QSP: Qualified SWPPP Practitioner
- D. QSD: Qualified SWPPP Developer
- E. SWPPP: Storm Water Pollution Prevention Plan
- F. SWRCB: State Water Resources Control Board
- G. NPDES: National Pollutant Discharge Elimination System General
- H. WDID: Waste Discharger Identification number
- I. BMP: Best Management Practices

PART 2 - PRODUCTS

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PART 3 - EXECUTION

3.01 SWPPP

- A. Comply with State Water Resources Control Board Order No. 2009-0009-DWQ National Pollutant Discharge Elimination System General Permit No.

CAS0000002, for Storm Water Discharges Associated with Construction and Land Disturbance Activities.

- B. A SWPPP has been developed for this project. The SWPPP is a dynamic document and will change as conditions (weather or construction phases) warrant.
- C. Implementation of the SWPPP is the responsibility of the Contractor and a part of this project. Costs associated with implementation and maintenance of the BMPs per the SWPPP shall be included in the lump sum base bid.
- D. Major changes to the SWPPP shall be reviewed by the City's QSD prior to implementation. Cost associated with the major changes will be paid for using the unit cost listed in the Additions or Deletions Sheet of the Proposal
- E. The City's QSP will perform weekly inspections of the jobsite. Implementation of and minor changes to the SWPPP as directed by the City's QSP shall be incidental to the Work. Contractor shall start all inspection corrective actions within 72 hours of observation, and complete as soon as possible.
- F. All BMPs installed will be inspected by the City's QSD/QSP for compliance with the SWPPP and BMP Fact Sheets. BMPs that are not in compliance shall be brought into compliance by the Contractor at no cost to the City.
- G. Keep one copy of the SWPPP and amendments at the project site.
- H. The SWPPP shall be readily available throughout the course of construction and until the NOT has been accepted by SWRCB. The SWPPP shall be made available upon request by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or City's storm water staff.
- I. At the end of the establishment period, the Contractor shall submit the project site copy of the SWPPP including copies of all inspections, Rain Event Action Plans (REAPs), reports, and sampling and analysis results to the City's Project Manager.

3.02 Schedule

- A. Contractor shall develop a Water Pollution Control Schedule that describes the timing of grading or other work activities that could affect water pollution. The schedule shall be updated by the Contractor to reflect changes in the Contractor's operations that would affect the necessary implementation of water pollution control practices. The typical sequence of work shall be adjusted by the Contractor based on weather conditions and forecasted rain events. The schedule is considered an appropriate and applicable BMP.

3.03 Penalties and fines

- A. Contractor is responsible for all penalties and fines assessed to or levied on the project related to the implementation of the SWPPP.

- B. In an effort to maintain compliance with the General Permit, the Contractor may be asked to make changes to the BMPs. If the Contractor is unable to perform these services in a timely manner the City reserves the right to address any areas of concern and deduct the cost from the contract.

3.04 Inlet Filters

- A. Drain inlet filters may be employed in lieu of straw bales. Horizontal mesh filters attached to the top of or below the drain inlet grate shall not be allowed. Only high flow volume, bag type filters or others as accepted by the Public Works Inspector shall be used.

3.05 Silt Fence and Straw Wattles

- A. Silt fences and straw wattles may be employed in lieu of, and are preferred to straw bales.

3.06 Slope Protection/Erosion Control

- A. All slopes greater than 10:1 shall be covered with broadcast straw at a rate of 50 bales or 4,000 pounds per acre. Slopes exceeding 4:1 shall have straw pressed in place or a tackifier shall be applied.
- B. All slopes along building frontages (from the building setback line to the City right-of-way) exceeding 4:1 shall have erosion netting installed (jute or as accepted by the Public Works Inspector).
- C. Slopes steeper than 4:1 and adjacent to City of Roseville right-of-way, flood plains, natural drainages, park land or designated open space shall require broadcast seeding and shall be covered with straw matting.
- D. Hydroseed shall not be used on slopes where broadcast straw, erosion netting or straw matting are specified above, except as an additional measure to them. Within a site, protection of bare and/or disturbed slopes which are isolated from areas requiring erosion protection shall be addressed on the plans. Hydroseeding may be an acceptable alternative in isolated expanses regardless of slope.
- E. From the back of City sidewalk to 25 feet back, all disturbed, bare slopes of less than 10:1 shall be hydroseeded. Broadcast straw as specified above for 10:1 or steeper slopes is an acceptable option.

3.07 Straw Bales

- A. Straw bales shall be stockpiled on the site at a rate of 1.5 bales per acre by October 1. Measures shall be provided to keep straw dry.

3.08 Silt Controlling Devices

- A. Use of alternative silt controlling devices will be review and accepted at the discretion of the City's QSD.

3.09 Cleaning

- A. Thoroughly clean all areas where work has occurred. Remove from the site excess material, debris and rubbish.
- B. Take all precautions to protect completed work. Immediately repair or replace all damaged areas due to tire ruts, erosion, compaction failure, etc. Keep all erosion control measures intact.

END OF SECTION

**For Council Approval
Not For Bidding**

SECTION 09 91 00 PAINTING AND FINISHES (GENERAL)

PART 1 - GENERAL

1.01 Conditions

- A. The general provisions of the Contract, including General Conditions and Special Provisions apply to the work specified in this Section.

1.02 Description

- A. Work includes, but is not limited to the following:
 - 1. Provide all materials, tools, equipment, appliances, labor and supervision required to paint and finish all surfaces and/or components as specified herein and as indicated on the Drawings, including all miscellaneous items and labor required to complete the Work of this Section.
 - 2. Surface preparation, priming and painting of all metal surfaces as indicated on Drawings or as follows:
 - a) Miscellaneous surfaces.
 - 3. All surfaces that are left unfinished by the requirements of other sections shall be painted or finished as part of this contract.
- B. Definition: The term "paint", as used herein, shall mean all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime intermediate or finish coats.

1.03 Work Not Included

- A. Pre-Finished Items: Unless otherwise specified or indicated on the Drawings, do not include the painting of items that are specified to receive manufacturer's factory finish, i.e. such items as site furnishings, irrigation equipment, electrical equipment, etc. See applicable Sections.
- B. Finished Metal Surfaces: Unless otherwise specified, all metal surfaces or anodized aluminum, stainless steel, chromium plate, copper, bronze or similar finished materials do not require painting.

1.04 Submittals

- A. Provide in accordance with the General Conditions prior to ordering material, a complete, detailed list of materials proposed for use on work. Include affidavit from manufacturer stating that proposed materials are the best of their respective kinds and suitable for intended purpose. Submit in ample time to avoid delays in work if the list, or portions thereof are rejected.

- B. Painter shall prepare and submit color samples to match color chips in 12- inch square size and must receive approval from Project Inspector before applying final paint coats to finish surfaces. Approved samples shall be retained at the Project Inspector's office for record.

1.05 Paint Coordination

- A. Provide prime coats which are compatible with finish paints used. Review other Sections of these specifications in which prime paints are to be provided to ensure compatibility of total painting system for various surfaces. Upon request from other trades, furnish information and specifications for finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Project Inspector in writing of any anticipated problems using specified painting systems with surfaces primed by others.

1.06 Job Conditions

- A. Applicator shall examine areas, surfaces and conditions under which painting Work is to be applied and notify the Project Inspector in writing of conditions detrimental to proper and timely completion of Work. Do not proceed with Work until unsatisfactory conditions have been corrected in a manner acceptable to Project Inspector and Applicator, or Applicator shall assume responsibility for and rectify any unsatisfactory finish resulting.
- B. Starting of painting Work shall be construed as Applicator's acceptance of surfaces and conditions.

1.07 Weather Conditions

- A. Apply water base paints only when temperature of surfaces to be painted and surrounding air temperature are between fifty (50) degrees F (10 degrees C) and ninety (90) degrees F (32 degrees C), unless otherwise permitted by paint manufacturer's printed specifications.
- B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between forty-five (45) degrees F (7 degrees C) and ninety-five (95) degrees F (35 degrees C), unless otherwise permitted by paint manufacturer's printed specifications.
- C. Do not apply paint in rain, fog or mist; or when relative humidity exceeds eighty-five (85) percent; or to damp or wet surfaces.

1.08 Delivery and Storage

- A. Deliver materials to job site in original, new and unopened packages or containers bearing manufacturer's name and label, and the following information:

1. Manufacturer's Name
 2. Manufacturer's stock number and date of manufacture
 3. Special color mix: name and number
 4. Contents by volume for major pigment and vehicle constituents
 5. Thinning instructions
 6. Application instructions
- B. Store materials and equipment as approved by applicable codes and enforce good housekeeping practices. Any soiled or used rags waste, etc., shall be removed from the site every night and every precaution shall be taken to avoid the danger of fire. No paint materials shall be washed or emptied on the site or into any sewer drains, storm drains or street gutters.

1.09 Protections

- A. Protection Work of other trades, whether to be painted or not, against damage by painting and finishing Work. Provide suitable covering or other methods of protection during progress of this Work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to the Project Inspector.
- B. Provide "Wet Paint" signs as required to protect newly painted surfaces. Remove all protective materials upon completion of the Work and touch-up and restore all damaged or defaced surfaces, including the removal of paint spots from other surfaces.

1.10 Guarantee

- A. Adhesion: All materials applied shall be guaranteed for a period of two (2) years against failure due to surface conditions, materials, or application. There shall be no evidence of fingerprints blisters, running, peeling, scaling, chalking, streaks or stains.

PART 2 - PRODUCTS

2.01 Color Schedule

- A. Project Inspector shall furnish to the Contractor a color schedule of paints to be used based on one of the approved manufacturer's color charts or requirements for specially mixed colors. Use of one of the other approved manufacturer's requires the Contractor to match the color schedule provided by the Project Inspector.
- B. Manufacturers names used to designate colors of color schedule is not intended to imply that products names are required to the exclusion of equivalent products of other manufacturers.
- C. All colors and manufacturers shall be approved and authorized by the Project Inspector before commencing work.

2.02 Materials Quality

- A. Provide best quality grade of various types of paints as regularly manufactured by acceptable paint materials manufacturer. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable. Acceptable paint manufacturers include:
 - 1. Kelley-Moore
 - 2. Benjamin Moore Company
 - 3. The Glidden Company
 - 4. Pratt and Lambert, Inc.
 - 5. Dunn and Edwards
 - 6. Sherwin-Williams
 - 7. W.P. Fuller Company
 - 8. Tiger Drylac
- B. Provide primer and undercoat paint produced by the same manufacturer as finish paint. Use only thinners approved by paint manufacturer, and use only within recommended limits.

2.03 Metal Primer

- A. Primer for metal surfaces shall be Red Oxide Primer, conforming to Federal Specification TT-P-31 for metal surfaces and Federal Specification TT-P-64b for galvanized surfaces.

PART 3 - EXECUTION

3.01 Surface Preparation

- A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions, and as herein specified, for each particular surface condition.
- B. Paint no items fitted with finish hardware or other similar items until hardware has been removed or provided with surface-applied protection prior to surface preparation and painting operations. Install hardware or remove surface-applied protection after paint has dried.
- C. Metal Surfaces: Clean all metal surfaces, which are not galvanized or shop-painted, of scale, dirt, rust and other deleterious materials before priming. Clean metal in accordance with Steel Structures Painting Council (SSPC) Specifications.
 - 1. SP-2: Hand Tool Cleaning
 - 2. SP-3: Power Tool Cleaning
 - 3. SP-7: Brush-off Blasting CleaningRemove oil, grease, and similar contaminants in accordance with:
 - 1. SP-1: Solvent Cleaning

- D. Galvanized Surface: Clean all galvanized surfaces of oil and other surface contaminants with a crystalline zinc phosphate pretreatment (phosphoric acid etch). Remove pretreatment solution by thoroughly washing with clean water and wipe dry.

3.02 Materials Preparation

- A. Mix and prepare painting materials in accordance with manufacturer's specifications.
- B. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into materials. Remove film and if necessary, strain materials before using.

3.03 Application of Primer Coat

- A. Apply primer coat to all surfaces which are required to be painted or finished, and which have not been prime coated or shop-painted by others. For metal surfaces, touch up shop-painted coats as required.
- B. Immediately after surface preparation brush or spray on primer in accordance with manufacturer's instructions at a rate to provide uniform dry film thickness of two (2.0) mils for each coat. Use painting methods which shall result in full coverage of joints, corners, edges and exposed surfaces.
- C. All primer coats shall be free from runs, sags, and other defects. All coats shall be thoroughly dry before applying succeeding coats.
- D. Apply one (1) coat of metal primer for metal surfaces, as specified and/or as recommended by manufacturer's instructions.

3.04 Application of Paint

- A. Apply paint in accordance with manufacturer's instructions. Use applicators and techniques best suited for each surface and type of materials being painted.
- B. All painting Work shall be done by skilled workman in a professional manner. All coats shall be evenly spread and shall be free from run, sags and other defects. All coats shall be thoroughly dry before applying succeeding coats.
- C. All individual coats of paint shall be inspected and approved by the Project Inspector before application of the succeeding specified coat; otherwise no credit for the coat applied shall be given, and the Applicator shall automatically assume responsibility to recoat the Work. The applicator shall provide the Project Inspector a report of each coat applied when completed for inspection and approval to comply with the above.
- D. Where coverage is incomplete, not uniform, or not to the required dry film thickness, provide an additional coat at no extra cost to the Developer.
- E. Apply finish coats of paint to all exposed surfaces as follows:

1. For primed metal surfaces, apply two (2) coats of 100% acrylic latex base paint, per manufacturer's recommendations. Apply first coat of paint within 72 hours of primer application. If first coat of finish paint cannot be applied within the specified application time, the contractor shall re-clean and re-primer all exposed metal surfaces prior to start of metal painting operations.
- F. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
- G. Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practical after preparation and before subsequent surface deterioration's.
- H. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- I. Apply all coating without reduction, except as specifically required by label directions, or required by this Section.
- J. Sand carefully between all coats on smooth surfaces for good adhesion of subsequent coats.
- K. Paint all exposed surfaces and anything inaccessible after installation prior to installation, if required to be painted.

END OF SECTION

**For Council Approval
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SECTION 09 91 50 OUTDOOR SPORTS COURT MARKINGS

PART 1 - GENERAL

1.01 General Description

- A. Textured acrylic surfacing for asphalt concrete tennis courts.

1.02 Related Sections

- A. Related Work
 - 1. Asphalt Concrete Paving (Section 32 12 16)
 - 2. Miscellaneous Site Amenities (Section 12 93 00)
- B. References
 - 1. National Asphalt Paving Association
 - 2. United States Tennis Association (USTA)
 - 3. International Tennis Federation (ITF)
 - 4. American Sport Builders Association (ASBA)

1.03 Quality Assurance

- A. Surfacing shall conform to the guidelines of the ASBA for planarity.
- B. Asphalt concrete shall have a vapor barrier in accordance with ASTM E-1745.
- C. All surface coatings products shall be supplied by a single manufacturer.
- D. The contractor shall record the batch number of each product used on the site and maintain it through the warranty period.
- E. The contractor shall provide the inspector, upon request, an estimate of the volume of each product to be used on the site.
- F. The manufacturer's representative shall be available to help resolve material questions.

1.04 Submittals

- A. Manufacturer specifications for components, color chart and installation instructions.
- B. Authorized Applicator certificate from the surface system manufacturer.
- C. ITF classification certificate for the system to be installed.
- D. Reference list from the installer of at least 3 projects of similar scope done in the past 3 years, including at least 4 site photos and current references.
- E. Current Material Safety Data Sheets (MSDS).
- F. Product substitution: If other than the product specified, the contractor shall submit at least 7 days prior to the bid date a complete type written list of proposed substitutions with sufficient data, drawings, samples and literature to demonstrate to the owners satisfaction that the proposed substitution is of equal quality and utility to that originally specified. Information must include a QUV test of at least 1000 hours illustrating the UV stability of the system.

Test method similar to ASTM G53. The color system shall have an ITF pace rating in Category 2. Under no circumstances will systems from multiple manufacturers be considered.

1.05 Material Handling and Storage

- A. Store materials in accordance with manufacturer specifications and MSDS.
- B. Deliver product to the site in original unopened containers with proper labels attached.
- C. All surfacing materials shall be non-flammable.

1.07 Installer Qualifications

- A. Installer shall be regularly engaged in construction and surfacing of acrylic tennis courts, play courts or similar surfaces.
- B. Installer shall be an Authorized Applicator of the specified surface system.
- C. Installer shall be a builder member of the ASBA.

1.08 Manufacturer Qualifications

- A. System manufacturer shall provide documentation that the surface to be installed has been classified by the ITF as a medium pace surface.
- B. System manufacturer shall be a US owned company.
- C. System manufacturer shall be a member of the ASBA.

PART 2 - PRODUCTS

2.01 Multi-part acrylic color and surfacing system, consisting of multiple products designed and manufactured to be used together to comprise a complete surfacing system. All products used must be manufactured by the same company.
Systems/Manufacturers:

- A. Plexipave System as manufactured by California Sports Surfaces., Andover, MA. 01810. Contact Dan Brown, 602-639-3900.
- B. Laykold Colorcoat System, as manufactured by Advanced Polymer Technology Corporation, 109 Conica Lane, P.O. Box 160, Harmony PA 16037, 724.452.1330.
- C. Novacrylic 4-Coat Color System, as manufactured by Nova Sports U.S.A., Inc., 6 Industrial Road, building #2, Milford MA, 01757, 508-473-6540.
- D. SportMaster Color Plus System, as manufactured by SportMaster, P.O.Box 2277, Sandusky, OH 44870, 800.395.7325.
- E. Substitutions: Submit requests at least 7 days prior to the bid date with a complete type written list of proposed substitutions with sufficient data, drawings, samples and literature to demonstrate to the owner's satisfaction that the proposed substitution is of equal quality and utility to the specified product. Information must include a QUV test of at least 1000 hours illustrating the UV stability of the system. The system shall have an ITF pace rating in Category 2.

2.02 Materials

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- A. Patching Mix - for use in patching cracks, holes, depressions and other surface imperfections.
- B. Crack Filler - for use in filling fine cracks.
- C. Adhesion Primer – a two component water based epoxy primer for uncoated asphalt concrete surfaces.
- D. Acrylic Filler Course – for use as a filler for new or existing asphalt concrete surfaces. The 100% acrylic filler shall be blended with approved silica sand
- E. Acrylic Color Playing Surface – for use as the finish color and texture.
- F. Line Paint – for use as the line marking on the court/play surface.
- G. Water – for use in dilution/mixing shall be clean and potable.

2.03 Material Specifications

- A. Court Patch Binder – 100% acrylic resin blended with Portland cement and silica sand.
 - 1. Percent solids by weight (minimum) 46%
 - 2. Weight 8.7-8.9 lbs./gallon
- B. Plexipave Crack Filler – 100% acrylic resin heavily filled with sand.
 - 1. Percent solids by weight (minimum) 85%
 - 2. Percent solids by weight (minimum) 15 lbs./gallon
- C. California TiCoat – 2 component epoxy primer
 - 1. Percent solids by weight (minimum) 34.6-34.8%
 - 2. Weight 8.55-8.70 lbs./gallon
- D. Acrylic Resurfacer – 100% acrylic resin (no vinyl copolymerization constituent). The product shall contain not less than 3.5% attapulgite.
 - 1. Percent solids by weight (minimum) 26.7%
 - 2. Weight 8.7-8.9 lbs./gallon
- E. Colored Acrylic Coating – 100% acrylic resin (no vinyl copolymerization constituent) with selected light fast pigments. Green shall contain not less than 8% chrome oxide.
 - 1. Percent solids by weight (minimum) 36.5%
 - 2. Weight 10.0-10.2 lbs./gallon
- F. Colored Texture Base – 100% acrylic resin containing no vinyl copolymerization constituent. Contains not more than 63% rounded silica sand.
 - 1. Percent solids by weight (minimum) 74%
 - 2. Weight 13.1-14.1 lbs./gallon
- G. Line Paint – 100% acrylic resin containing no alkyds or vinyl constituent. Texturing shall be rounded silica sand.
 - 1. Percent solids by weight (minimum) 60.5%
 - 2. Weight 12-12.3 lbs./gallon

All surfacing materials shall be non-flammable and have a VOC content of not less than 100g./ltr. Measured by EPA method 24.

Local sands are not acceptable in the color playing surface. Sands must be incorporated at the manufacturing location to insure quality and stability.

PART 3 - EXECUTION

3.01 General

A. Weather Limitations

1. Do not install when rainfall is imminent or extremely high humidity prevents drying.
2. Do not apply unless surface and air temperature are 50°F and rising.
3. Do not apply if surface temperature is in excess of 140°F.

C. Manufacturer's Directions

1. Follow all manufacturers' directions for specific products and system used. The following is listed as a guide to the work. Minor differences between manufacturers' instructions may exist and shall be accommodated at no additional cost to the City.
2. New Asphalt- Asphalt base should be installed to the specifications as laid out in the American Sports Builders Association Asphalt Guidelines. CSS requires a minimum cure time of 14 days on new asphalt. Surface variation should not exceed 1/8 inch in ten feet when measured in any direction with a straightedge and a slope of 1 inch in 10 feet, all in one plane.

3.02 Preparation for Acrylic Color Playing System

A. Clean surfaces of loose dirt, oil, grease, leaves, and other debris in strict accordance with manufacturer's directions. Pressure washing will be necessary to adequately clean areas to be coated. Any areas previously showing algae growth shall be treated with Clorox or approved product to kill the organisms and then be properly rinsed.

B. Holes and cracks: Cracks and holes shall be cleaned and a suitable soil sterilant, as approved by the owner, shall be applied to kill all vegetation 14 days prior to use of Court Patch Binder according to manufacturer's specifications.

C. Depression: Depressions holding enough water to cover a five cent piece shall be filled with Court Patch Binder Patching Mix. 3 gallons of Court Patch Binder, 100 lbs. 60-80 silica sand, 1 gallon Dry Portland Cement (Type I). This step shall be accomplished prior to the squeegee application of Acrylic Resurfacer. The contractor shall flood all the courts and then allow draining. Define and mark all areas holding enough water to cover a nickel. After defined areas are dry; prime with tack coat mixture of 2 parts water, 1 part Court Patch Binder. Allow tack coat to dry completely. Spread Court Patch Binder mix true to grade using a straight edge (never a squeegee) for strike off. Steel trowel or wood float the patch so that the texture matches the surrounding area. Never add water to mix. Light misting on surface and edges to feather in is allowed as needed to maintain work ability. Allow to dry thoroughly and cure.

NO WORK FROM THIS STAGE ON SHALL COMMENCE UNTIL AN INSPECTOR HAS ACCEPTED THE SURFACE.

- D. Primer: primer shall be applied to all uncoated asphalt concrete surface prior to application of filler materials. Apply at an application rate of .025-.03 gallon per square yard.
1. Mix component A with Component B at a ratio of 1:1. Let stand for 20-30 minutes prior to use.
 2. Apply with a short nap phenolic core roller.
 3. Allow the primer to dry for approximately 1-3 hours until the surface is slightly tacky to the touch. In no case shall the surface be left overnight before receiving an application of Acrylic Resurfacer.
- E. Filler Course. (Acrylic Resurfacer): On the properly applied primer coat the filler course shall be applied to the clean underlying surface in one application to obtain a total quantity of not less than .06 gallon per square yard based on the material prior to any dilution. Acrylic Resurfacer may be used to pre-coat depression and crack/hole repairs to achieve better planarity prior to filler course application.
1. Over a properly repaired surface of asphalt concrete on existing courts, apply one coat of Acrylic Resurfacer according to the following mix:

Acrylic Resurfacer	55 gallons
Water	20 - 40 gallons
Sand	600-800 pounds / 60-80 mesh
Liquid Yield	112-138 gallons

On new asphalt concrete, two coats of Acrylic Resurfacer may be used to properly fill all voids in the asphalt surface. Use clean, dry 50-60 mesh sand and clean, potable water to make mixes. The quantity of sand and water in the above mix may be adjusted within above limits to complement the roughness and temperature of the surface.

2. Mix the ingredients thoroughly using accepted mixing devices and use a 70 Durometer rubber bladed squeegee to apply each coat of Acrylic Resurfacer as required.
3. Allow the application of Acrylic Resurfacer to dry thoroughly. Scrape off all ridges and rough spots prior to any subsequent application of Acrylic Resurfacer or subsequent cushion or color surface system.

3.03 Application of Acrylic Color Playing Surface

- A. All areas to be color coated shall be clean, free from sand, clay, grease, dust, salt or other foreign matters. The Contractor shall obtain the Engineer's approval, prior to applying any surface treatment.
- B. Blend textured color base and acrylic coating with a mechanical mixer to achieve a uniform Fortified mixture. The mix shall be:
- | | |
|-----------------|------------|
| Color Base | 30 gallons |
| Colored Coating | 20 gallons |
| Water | 20 gallons |
- C. Application shall be made by 50 durometer rubber faced squeegees. The Fortified Plexipave mixture should be poured on to the court surface and

spread to a uniform thickness in a regular pattern.

- D. A total of 3 applications of Fortified mixture shall be made to achieve a total application rate of not less than .15 gal./sy. No application should be made until the previous application is thoroughly dry.

3.04 Line Painting

- A. Line shall be 2" wide unless otherwise noted on the drawings. Lines shall be carefully laid out in accordance with ASBA and USTA guidelines. The area to be marked shall be taped to insure a crisp line. The Line Paint shall have a texture similar to the surrounding play surface. Application shall be made by brush or roller at the rate of 150-200 sg./gal. (3/4 gal. per tennis court).

3.05 Protection

- A. Erect temporary barriers to protect coatings during drying and curing.
- B. Lock gates to prevent use until acceptance by the owner's representative.

3.06 Clean Up

- A. Remove all containers, surplus materials and debris. Dispose of materials in accordance with local, state and Federal regulations.
- B. Leave site in a clean and orderly condition.

END OF SECTION

For Council Approval
Not For Bidding

SECTION 12 93 00 SITE FURNISHINGS

PART 1 - GENERAL

1.01 General Requirements

- A. The requirements set forth in the General Conditions shall be in addition to the standards provided herein.
- B. The requirements set forth in the Supplemental Conditions shall be in addition to the standards provided herein.

1.02 Description

- A. Furnish all labor, materials and equipment for the complete installation of all site furniture, including play equipment and play surfacing, as shown on the Plans and as specified herein.

1.03 References

- A. All play equipment shall meet or exceed the standards set forth by the Consumer Product Safety Commission (CPSC), comply with the Americans with Disabilities Act (ADA), meet all current ASTM standards and be consistent with State and local codes.
- B. The play area surfacing shall meet or exceed the fall absorption/impact rates set forth by the CPSC guidelines and ASTM standards. The surfacing shall be an accessible surface and manufactured specifically for play areas.
- C. Nothing in the Plans or Specifications is to be construed to permit work not conforming to regulating codes and standards. The Contractor shall furnish without extra charge any material and labor, when required, by the compliance with these rules and regulations, even though the work was not mentioned in these particular Specifications or shown on the Plans.
- D. The product manufacturer shall supply complete Specifications for the installation of all site furnishings, including play equipment and play surfacing.

1.04 Submittals

- A. Submittals for specified items are required. The Contractor shall submit a materials summary sheet indicating which items will be installed as specified and which items are proposed for substitutions. The Contractor shall submit proof of order within ten (10) working days of the Notice to Proceed, indicating all specified materials have been ordered, noting "as specified" or "substitution proposed". For the following items, also provide:
 - 1. Benches with color samples

2. Line Paint
3. Tennis Net Posts
4. Tennis Net Ground Anchors
5. Pickleball Net Posts

- B. On the date of the Notice to Proceed, the Contractor shall immediately place the order to purchase all site furnishings, including the play equipment and play surfacing as specified on the Plans and as outlined herein. **Proof of all orders shall be submitted to the Project Manager within ten (10) working days of the Notice to Proceed.**
- C. The Contractor shall submit a Certificate of Compliance from a third party certified playground inspector which verifies that the entire playground, including individual components, and surfacing meets or exceeds regulated requirements as described in Section 1.03 above.

1.05 Record Drawings

- A. The Contractor shall keep an accurate record of the as-built conditions of the miscellaneous site amenities. These records shall be updated daily and kept at the construction site. At any time, the Inspector may examine the conditions of the “as-builts” to ensure compliance of the above.

PART 2 - PRODUCTS

2.01 Materials

- A. Benches shall be as shown on the Plans and as specified herein. The benches shall be as distributed by Miracle Play Group, (916) 317-0545, and as manufactured by Wabash Valley or accepted equal. Color as selected by the City.
- B. Line Paint: See Outdoor Sports Court Markings, Section 09 91 50.
- C. Tennis Net System: Posts shall be Model #2205-BLK; Net shall be Model #8352; Ground anchor shall be Model #8371-20; Tennis Net Tie Down Strap shall be Model #8371-30; all components manufactured by Patterson Williams and distributed by Miracle Play Group, (916) 317-05454, or approved equal. Color as selected by the City.
- D. Pickleball Net System: Posts shall be Model #2202-20P; Net shall be Model #8354; all components manufactured by Patterson Williams and distributed by Miracle Play Group, (916) 317-05454, or approved equal. Color as selected by the City.

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PART 3 - EXECUTION

3.01 Installation

- A. Contractor to provide experienced workers or subcontractors to install all site furnishings, including the play equipment and play surfacing described in these Specifications. The workers or subcontractor must demonstrate that at least five (5) similar play structures and five (5) play surface applications similar to that specified for this project have been installed in the last three (3) years.
- B. All site furnishing, including play equipment shall be installed per manufacturer's instructions.
- C. Heights of tables and benches shall be as follows, unless otherwise required by ADA; California Title 24 or other code requirements:

Description	Height Above Finish Grade
Table Surface Height	34" Maximum
Knee Space Height	27" Minimum Clear Space
Knee Space Depth	17" Minimum from edge of table to nearest obstruction under table top
Width of Knee Space	30" Minimum clear width beneath table
Bench Surface Height	16" Minimum, 18" Maximum

- D. All footings shall be Class A concrete with 3/4" maximum size aggregate, unless otherwise noted. Footings shall be in accordance with Caltrans Standard Specifications, Section 90. Install all footings below finish surface. In paved areas, install paved surface over footing for a clean finished surface as shown on the Plans.
- E. Carefully install all furnishings and equipment without disturbance to adjacent finishes. Contractor shall be responsible for the damage and subsequent repairs of damaged finished product.

3.02 Cleaning

- A. Thoroughly clean all areas where work has occurred. Remove from the site excess material, debris and rubbish.
- B. Take all precautions to protect completed work. Immediately repair or replace all damaged areas due to tire ruts, erosion, compaction failure, etc. Keep all erosion control measures intact.

PART 4 - WARRANTY

4.01 General

- A. Contractor shall warranty all site amenities included under this Section.
- B. Contractor shall also provide a written warranty covering all materials, equipment and workmanship furnished by him to be free of all defects after installation is accepted, including all defective parts that may have been found.

- C. Submit written warranty on company letterhead addressed to the City when providing As-built drawings.
- D. Attach cut sheets of installed items to the warranty.

END OF SECTION

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SECTION 31 10 00 CLEARING AND GRUBBING

PART 1 - GENERAL

1.01 General Requirements

- A. The requirements set forth in the General Conditions shall be in addition to the standards provided herein.
- B. The requirements set forth in the Supplemental Conditions shall be in addition to the standards provided herein.

1.02 Description

- A. Preserve and protect existing site amenities to remain, including, but not limited to, trees, shrubs, underground utilities and other improvements as shown on the Plans. Protection of work shall include affected improvements on adjoining properties.
- B. Scope of work includes: site preparation, removal of debris, staging of equipment and materials and securing the site for construction.

1.03 Related Work

- A. Section 31 20 00: Earthwork
- B. Section 01 57 23: Storm Water Pollution Control

1.04 Protection/Replacement

- A. Prior to demolition, erect protective fencing a minimum of one foot (1') beyond the canopy of all trees to remain. The radius of the canopy shall be measured from the longest branch furthest from the trunk. Refer to the environmental document for additional requirements for protective fencing on other existing natural features. For work within or near protected trees, a tree permit may be required.
- B. If public use is to be maintained on unaffected portions of the project site, the Contractor shall be responsible for directing pedestrian and vehicular traffic safely around the construction zone. Utilization of temporary fencing, barricades, signage, etc. shall be the responsibility of the Contractor. Safe detours shall be available to the general public at all times during the course of construction.
- C. Protection of existing site improvements shown to remain, including, but not limited to, fencing, signs, benches, picnic tables, play structures, shade structures, drinking fountains, concrete paving, concrete wall and curbs,

- decomposed granite paving, asphalt concrete paving, recreational site improvements, etc. are to be protected and preserved.
- D. The Contractor shall be responsible for any damage to and maintenance of all existing street improvements, drainage facilities and irrigation systems and to re-establish these improvements to their original condition as soon as possible after completion of the work in the area, to the complete satisfaction of the Project Manager and Inspector. Realignment or modifications to the existing facilities as shown on the plans are accepted.
 - E. Survey monuments and markers either shown on the Plans or encountered during the course of construction shall be protected and preserved. The Contractor shall notify the Inspector upon discovery of an unmarked monument, at which time, arrangements for the relocation or adjustment of the monument will be determined. All costs associated with the relocation or adjustment of these monuments shall be the Contractor's responsibility.
 - F. Burning or burying removed material on-site is prohibited.
 - G. Where the removal of specific material creates an open hole, pit, trench or other depression, the Contractor shall immediately backfill and compact the areas consistent with requirements outlined in Section 31 20 00 of these Specifications.
 - H. All items identified in the Plans to remain or identified in the field to remain, removed in error by the Contractor, shall be repaired or replaced to match in equal or better construction, at no cost to the City. The quality of the repair or replacement shall be measured as that existing at contract award.

PART 2 - PRODUCTS

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PART 3 - EXECUTION

3.01 Pre-Construction Site Review

- A. Contractor shall review existing site conditions with the Inspector prior to start of construction and document any conditions which adversely affect the satisfactory execution of the work and final acceptance of the project.
- B. Commencement of work constitutes acceptance of existing conditions. The Contractor shall, at his expense, be responsible for correcting all unsatisfactory and defective work.

3.02 Clearing

- A. Completely remove trees, shrubs, stumps, vines, rubbish/debris, undergrowth, deadwood, structures, and other elements identified to be removed and/or which interfere with the construction as shown on the Plans and as specified.

- B. Obtain verification from the Project Manager for non-identified items scheduled to be removed prior to actual removal.

3.03 Grubbing

- A. Remove all stumps, roots, grasses and weeds in its entirety. Apply systemic weed killer. Confirm weed kill prior to removal.
- B. Once surface material is removed, the Contractor shall stockpile the top twelve inches (12") of topsoil for use during the final grading phase of work. This soil shall be free of rocks, debris, roots and other undesirable material.

3.04 Utilities

- A. Contact USA Alert (800) 642-2444 prior to commencement of any demolition or excavation work. Provide a minimum of 48 hours' notice. Verify all utilities entering into and their locations within the project site.
- B. Where utilities lie within the project site, but are not a part of the project, the Contractor shall cooperate with the agency or utility company having jurisdiction to maintain its use and the integrity of the structure.
- C. Where utilities enter into the project site and taps, connections to or extensions of the utility are identified in the Plans, the Contractor shall coordinate all work with the agency or utility company having jurisdiction to minimize or eliminate disruption of use by the adjacent properties.
- D. Verify that all utilities, shown to be removed on the Plans, are inactive and turned off prior to disconnection and/or re-routing, prior to demolition.

3.05 Debris Removal

- A. All materials removed as a part of this contract shall become the property of the Contractor and shall be legally disposed of off-site, unless otherwise noted on the Plans.
- B. Where a portion of a concrete slab, curb or wall and asphalt concrete paving or curb is to be removed, the concrete shall be cut with a concrete saw at a 90 degree angle so that the edge of the remaining concrete shall form a neat, straight line. Conform to the City of Roseville Design and Construction Standards, latest edition.

END OF SECTION

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SECTION 31 20 00 EARTHWORK

PART 1 - GENERAL

1.01 General Requirements

- A. The requirements set forth in the General Conditions shall be in addition to the standards provided herein.
- B. The requirements set forth in the Supplemental Conditions shall be in addition to the standards provided herein.
- C. The standards set forth in the Caltrans Standard Specifications, latest edition, shall be in addition to the standards provided herein.
- D. The requirements set forth by CAL OSHA shall be in addition to the standards provided herein.

1.02 Description

- A. Provide all labor, operations and materials necessary for earthwork, including, but not limited to, staking and surveying, grading; excavating; installation of facilities necessary to perform excavation and subsequent removal of such facilities upon completion of work; subgrade preparation; backfilling; and other incidental items necessary for a complete project.
- B. This project is a balanced cut and fill project.
- C. The intent of the plan is to provide positive drainage and to maintain slopes on walkways as required by the Americans with Disabilities Act and California Title 24 throughout the project site. The Project Manager shall be notified immediately of any discrepancies between the Plans and actual field conditions and/or conflicts between the design and code requirements.

1.03 Related Work

- A. Section 31 10 00: Clearing and Grubbing
- B. Section 33 00 00: Utilities
- C. Section 01 57 23 Storm Water Pollution Control

1.04 Quality Assurance

- A. All work shall conform to local codes and regulations, including standards set forth in the Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation (Caltrans), Chapter 70 of the Uniform Building Code and ASTM.
- B. Relative compaction shall be the in-place dry density of soil denoted as a percentage of the maximum dry density of the same material. This shall be as

determined by ASTM 1557. The optimum moisture is measured by the water content which corresponds to the maximum dry density.

- C. Upon discovery of unforeseen subsurface site conditions, the Contractor shall notify the Inspector immediately.
- D. Upon discovery of hazardous materials, cease all activity and immediately contact the Fire Department.

1.05 Protection

- A. Provide and install all supports, shoring, bracing, underpinning, sheet piling and other methods for the sides of excavations necessary for ensuring safe working conditions for the workmen and to protect adjacent improvements to remain.
- B. Provide any and all protection measures necessary to ensure the protection of the workmen, the general public, including children and the project site. These protection requirements remain the Contractor's sole responsibility throughout the duration of the project, including non-working hours.
- C. Do not obstruct vehicular, bicycle or pedestrian thoroughfares, unless previously accepted by the City. Provide safe and adequate detours around the construction as required by City and State regulations.
- D. Trenches shall be covered at all times when work directly associated with the trenches is not occurring, including non-work hours.
- E. During the course of construction, the Contractor shall ensure that surface drainage does not create a nuisance onto adjacent properties.

1.06 Erosion Control Measures

- A. Construction sites shall have required erosion and sediment control measures in place as required by the SWPPP. If construction is in progress, the Contractor shall ensure that the construction site is prepared prior to the onset of any storm. At a minimum, erosion control measures shall include:
 - 1. Broadcast seed
 - 2. Drainage area protection
 - 3. Dust/mud control
 - 4. Drain inlet filters
 - 5. Silt fence and straw wattles
 - 6. Slope protection
 - 7. Straw bales
 - 8. Silt controlling devices

PART 2 - PRODUCTS

2.01 Base Rock

- A. Class 2 aggregate base per Caltrans Standard Specifications, latest edition.

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2.02 Drain Rock

- A. Drain rock shall be Class 2 permeable, washed, unbroken stone or gravel. Material gradation shall conform to the following:

Sieve Size	Percent Passing
1 inch	100
No. 4	20-50
No. 50	0-10
No. 200	0-5

2.03 Pea Gravel

- A. Pea gravel shall be natural stone, free of clay, shale or organic matter, and shall conform to the following:

Sieve Size	Percent Passing
3/8 inch	100
No. 4	47
No. 8	2
No. 16	1

2.04 Fill

- A. Structural Fill shall conform to Caltrans Standard Specifications or the accepted site-specific geotechnical report generated for the project.
- B. Fill for non-structural areas shall conform to the following standards:
1. Plasticity: ASTM D4318-84
 2. Expansion Index: No greater than twenty (20)
 3. Testing: UBC 29-9 and ASTM D422-72
 4. Particle Size: No greater than one inch (1")

2.05 Topsoil

- A. The top eight to ten inches (8" – 10") of native soil containing more than three percent (3%) organic material. Topsoil shall be free of rocks no larger than one inch (1") in diameter, free from subsoil, roots, heavy or stiff clay, coarse sand, destructive seeds, noxious chemicals, brush, debris, litter and other undesirable materials.
- B. For any import soil to be used in turf/planting areas, submit a soils analysis with soil amendment recommendations (for plant growth) for review and acceptance prior to placement on-site. Soils test information shall be as outlined in Section 32 90 00: Planting – 1.06.

2.06 Soil Sterilant

- A. Sterilizer shall be standard, quick-acting, short-lived and non-selective weed and grass killer, commonly used under roadway/transportation projects.

Application of the sterilant shall pose no short or long term health threats to the installer or the general public. Submit analysis for approval prior to applying.

2.07 Sand

- A. Granular, fine, free of organic matter, mica, loam or clay material.

PART 3 - EXECUTION

3.01 Construction Staking

- A. The layout of all work shall be performed by a California State licensed land surveyor provided by the Contractor.
- B. Notify the Inspector immediately of any discrepancies between actual field conditions and the Plans. Minor field adjustments may be necessary in order to fulfill the intent of the Plans.
- C. Non-notification of discrepancies between actual field conditions and the Plans by the Contractor, in writing, shall indicate his acceptance of such field conditions. Adjustments/modifications to the construction to accommodate the inconsistencies (without notification) shall be at no additional cost to the City.

3.02 Excavation

- A. All excavations shall be as noted on the Plans. Excavations shall include accommodation of base material.
- B. Do not over-excavate. Excavations shall provide appropriate space to install shoring, bracing, formwork, etc, as needed to ensure the safe and proper construction of the work.
- C. Take every precaution to prevent water from entering, softening, and undercutting excavated areas, including, pits, footings, trenches, etc.
- D. Notify the Inspector immediately upon discovery of unsatisfactory soils materials or unforeseen site conditions. Excavation shall include the complete removal of the unsatisfactory material and its legal disposal thereof.

3.03 Site Grading

- A. A grading permit is required to be obtained by the Contractor prior to commencing any earthwork.
- B. Grading shall include adjacent transition areas, new elevations/contours as shown on the Plans. All subgrade areas shall be graded parallel to the finish grades and contours and shall be uniform in slope. Transition areas shall provide a smooth connection between new and existing grades and shall not create additional drainage or ponding onto adjoining properties.
- C. Surface grades shall provide for positive drainage away from structures and footings, and shall be uniformly smooth throughout.
- D. Rough grading shall:

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1. Be graded to a tolerance of 0.10 feet, plus or minus for planted and turf areas.
2. Be graded with a tolerance less than .04' from specified grade and cross section for subgrade in which pavement, curbs and other structural elements are to be placed immediately above.
3. Provide a subgrade surface free of exposed rocks, stones and boulders.
4. Provide a subgrade surface free of depressions, pits, etc., with proper backfill and compaction. See paragraph 3.04 below.

3.04 Placement of Fill Material

- A. Prior to placement of fill material, the Contractor shall:
 1. Obtain approval of the subgrade surface from the Inspector.
 2. Scarify, dry and compact soft and/or wet areas.
 3. Remove and replace unsuitable subgrade material to the satisfaction of the Inspector.
 4. Take all necessary corrective action.
- B. Do not use topsoil as fill or backfill material, unless otherwise accepted in writing.
- C. Fill shall be placed in the following manner:
 1. Accepted engineered fill material for structural slabs and areas to be paved shall be placed in six-inch (6") loose thickness, uniform layers over the entire area.
 2. Fill material in planted areas shall be placed in twenty-four inch (24") maximum loose thickness throughout the areas to receive fill.
- D. Aerate or water each lift to obtain the required compaction rate indicated on the Plans. Thoroughly mix material to ensure proper moisture content for compaction. Repeat the operations until grades, as shown on the Plans, are obtained. Jetting of trenches shall be reviewed and accepted by the Inspector prior to performance of work.
- E. Do not place fill when the subgrade is frozen, muddy or wet. Allow conditions to thaw and dry out before resuming operations.
- F. Use hand tampers or vibrating compactors around foundations walls, retaining walls and other structural elements. Do not use large equipment in these areas and do not begin compaction operations until the bearing surfaces have reached its design strength.
- G. Fill around existing trees to remain shall not exceed twelve inches (12").
 1. Minor fill (6" or less) shall utilize topsoil and shall be placed by hand. Do not cover crown of trunk. Feather grades to the extent possible.
 2. Fills between 6" and 12" shall utilize 3/4" pea gravel on grade, placed up to three inches (3") below finish grade. Apply topsoil, by hand, to meet finish grade elevations. Feather grades to the extent possible.

- H. Construct mounds from on-site material. The core of the mound (1' below finish elevations) shall be compacted to 90%. The top twelve inches (12") shall be compacted to 85%. Place topsoil in the top twelve inches (12").
- I. Place topsoil in all turf and planting areas a minimum of twelve (12) inches deep. See Section 31 10 00, 3.03-B: Clearing and Grubbing.

3.05 Trenching, Backfilling and Compacting

- A. For trenches greater than five feet (5') in depth, submit an OSHA permit related to the work.
- B. All trenches shall be straight, true and cut vertical at 90 degrees to the surface plane.
- C. For trenches through existing paved surfaces, use a concrete saw or other tool to achieve straight, clean lines. Replace paved surface to the same or better condition as existing prior to cut.
- D. Do not over-excavate. Maintain bearing surfaces true, level and undisturbed to the extent possible.
- E. Trenches shall be kept dry and frost-free. Do not allow standing water to collect.
- F. Do not allow trenches to remain exposed at any time when work directly related is not occurring. Cover all trenches during non-work hours.
- G. Bedding for all trenches to receive pipes shall be as follows:
 - 1. Bedding material shall be consistent with the City of Roseville Design and Construction Standards, latest edition.
 - 2. Pipe shall lie completely on bedding. Pipe fittings or joints shall not bear weight.
 - 3. Bedding shall be uniform throughout the length of pipe.
- H. Initial backfill for storm drains, sewer lines and electrical conduit shall conform the applicable City standard set forth by the Department having jurisdiction.
- I. Backfill beyond the initial operations shall be native soil, placed in twelve-inch (12") lifts. Compaction for trenched areas shall be 95% for parking lot, driveway and roadway areas; 90% for hardscape (i.e. walkways, picnic pads basketball and tennis courts); and 85% in areas to be planted. Place topsoil over trenches in planted areas. Upon completion, all trenches shall be filled flush with adjacent finish grades.
- J. Compaction tests shall be required for trenched areas, hardscape areas and areas where fill over two feet in depth will be placed. The Inspector shall determine the number of tests and the locations. Re-tests shall be the Contractor's responsibility.
- K. Potholing shall be required in areas where existing utilities are indicated. Hand digging may be required.

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3.06 Soil Sterilant

- A. Soil sterilant shall be applied to areas where paving is to be installed. The worker applying the sterilant shall take every precaution to avoid overspray of sterilant onto areas to be planted. The sterilant shall be placed no further than six inches (6") beyond the edge of pavement.
- B. Soil sterilant shall not be applied in inclement weather and windy days.

3.07 Drainage Areas

- A. All bare areas, regardless of slope, within 50 feet of natural drainages shall be covered with straw and pressed in place.
- B. No grading or trenching, except as required for erosion or sediment control, shall occur within 35 feet from the centerline of perennial and intermittent drainage swales between October 5 and April 1 unless approved by the Engineering Division, as well as any other governmental agency which may have additional jurisdiction and/or requirements.

3.08 Dust/Mud Control

- A. Adjacent Streets: Adjacent street frontages shall be swept at least once a day to remove silt and other dirt which is evident from construction activities.
- B. Construction Vehicles: The Contractor is responsible for cleaning construction vehicles leaving the site on a daily basis to prevent dust, silt, mud and dirt from being released or tracked offsite. Adjacent streets shall be swept clean daily.
- C. Grading Spoils: Dry stockpiles of soil shall be watered to prevent the generation of airborne dust. Trucks transporting dry soil shall be covered with tarpaulins.
- D. Water: Water shall be sprayed on all exposed earth surfaces during clearing, grading, earth moving and other site preparation activities. The exposed earth shall be watered throughout the day to minimize dust. The Contractor shall obtain a hydrant permit from the Environmental Utilities Department.
- E. Wind Allowances: Grading activities shall be restricted or halted when winds exceed 15 miles per hour as deemed necessary by the Public Works Inspector.

END OF SECTION

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SECTION 32 12 16 ASPHALT CONCRETE PAVING

PART 1 - GENERAL

1.01 General Requirements

- A. The requirements set forth in the General Conditions shall be in addition to the standards provided herein.
- B. The requirements set forth in the Supplemental Conditions shall be in addition to the standards provided herein.
- C. The standards set forth in the City of Roseville Design and Construction Standards and the City of Roseville Parks Construction Standards, latest editions, shall be in addition to the standards provided herein.
- D. The standards set forth in the State of California, Title 24, Americans with Disabilities Act, latest edition, shall be in addition to the standards provided herein.

1.02 Description

- A. Furnish all labor, materials and equipment for the complete installation of asphalt concrete paving, as shown in the City Standard, as shown on the Plans and as specified herein.

1.03 Related Work

- A. Section 09 91 50: Outdoor Sports Court Markings

1.04 References

- A. Caltrans Standard Specifications for asphaltic concrete, latest edition.
- B. American Sport Builders Association (ASBA)

1.05 Tolerances

- A. All surface areas shall drain. Ponding, puddling or birdbaths are not acceptable.
- B. Surface grades shall conform to the following:

Description	shall not exceed, ... from indicated line, grade or thickness
Base Course	0.1 foot +/-
Finish Surface	0.05 foot +/-
Thickness of finished pavement	0.01 foot less

- C. Flatness: Surface variation should not exceed 1/8 inch in ten feet when measured in any direction with a straightedge and a slope of 1 inch in 10 feet, all in one plane.

1.06 Testing

- A. Testing shall occur during the installation of pavement. The number and frequency of tests shall be as determined by the Inspector.

PART 2 - PRODUCTS

2.01 Aggregate Base

- A. Conform to Caltrans Standard Specification, Section 26 paragraph 1.02B, Class 2.

2.02 Asphalt Concrete

- A. Conform to Caltrans Standard Specification, Section 39 and the City of Roseville Design and Construction Standards, latest edition.

2.03 Soil Sterilant

- A. Sterilizer shall be standard, quick-acting, short-lived and non-selective weed and grass killer, commonly used under roadway/transportation projects. Application of the sterilant shall pose no short or long term health threats to the installer or the general public. Submit analysis for approval prior to applying.

2.04 Striping

- A. Refer to Section 09 91 50 Outdoor Sports Court Markings

2.05 Header

- A. Per City of Roseville Parks Construction Standards, latest edition.

PART 3 - EXECUTION

3.01 Preparation

- A. Upon completion of grading operations, compact the subgrade at the required elevation to a relative compaction density of 95%, unless otherwise noted on the Plans. A load or performance test shall be conducted in the presence of the Inspector prior to the placement of AC.
- B. Apply soil sterilant per manufacturer's directions. Limit the work zone of the sterilant application to the area to receive paving plus three feet (3') on each side.
- C. Completely install redwood header as shown in the City of Roseville Parks Construction Standards, latest edition, if shown on the Plans.
- D. No material shall be placed in muddy conditions, nor shall any material be placed during or immediately after inclement weather, i.e. rain storms, temperatures below 35 degrees F, etc.

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- E. In areas where soil conditions are less than optimal, geotechnical tests shall be performed to verify compaction rates. The Inspector shall determine the number of tests necessary in order to verify conditions. Initial tests will be provided by the City. Re-tests shall be the Contractor's responsibility.

3.02 Installation

- A. Asphalt base should be installed to the specifications as laid out in the American Sports Builders Association Asphalt Guidelines. CSS requires a minimum cure time of 14 days on new asphalt.
- B. Spread aggregate base material in six-inch (6") lifts.
- C. Compact base surface to a relative compaction of 95% and in accordance to the Caltrans Standard Specifications, Section 26.
- D. Spread asphalt concrete material in accordance to the Caltrans Standard Specifications, Section 39.
- E. Upon completion, apply water to the finished surface and allow water to run-off. All areas of ponding, puddling or birdbaths shall be filled with asphalt and fine aggregate. Conform fill surface with adjacent surface to the point edges are not visible.
- F. Take every precaution to protect adjacent amenities or structures from material spillage or damage. In case of spillage or damage, the Contractor shall immediately repair or replace the damaged area to the satisfaction of the City.
- G. Clean and oil all manhole covers, grates and other surface structures within the pavement area.
- H. All new asphalt concrete paving shall receive a fog seal at a rate of 1/12 to 1/10 gallon of undiluted emulsion per square yard. All work shall conform to Caltrans Standard Specifications, Section 37. **Once sealed, parking of vehicles and/or equipment or stockpiling of material on the finished surface is prohibited.**
- I. Clean all surface structures that lie within the asphalt concrete area.

3.03 Striping

- A. Refer to Section 09 91 50 Outdoor Sports Court Markings

3.04 Protection and Cleaning

- A. Do not allow equipment or vehicles to park on new asphalt surfaces upon completion of fog seal operations. At his discretion, the Contractor may allow the parking of equipment and vehicles on the asphalt concrete **AFTER** the asphalt concrete material has been laid, passing applicable compaction tests and **PRIOR TO** applications of fog seal and striping.

END OF SECTION

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SECTION 32 31 13 CHAIN LINK FENCING

PART 1 - GENERAL

1.01 General Requirements

- A. The requirements set forth in the General Conditions shall be in addition to the standards provided herein.
- B. The requirements set forth in the Special Conditions shall be in addition to the standards provided herein.

1.02 Description

- A. Furnish all labor, materials and equipment for the complete installation of the chain link fence system, including gates as shown on the Plans and as specified herein.

1.03 References

- A. Caltrans Standard Specifications, latest edition.

PART 2 - PRODUCTS

2.01 General

- A. Wire used in the fabric shall be galvanized and shall have a tensile strength of 80,000 lbs. Per square inch based on cross sectional areas of the wire. One sample shall be tested without removing bends caused by weaving of the wire with the mesh. A second test shall be conducted on a wire strand carefully straightened. The tensile strength is finally determined as the average reading between the two tests. Wire to match fabric selection.
- B. Fabric shall be 1-3/4" 9-gauge nominal wire mesh, hot-dipped galvanized after weaving as shown on the plans. Conform to ASTM A392, with tensile strength as described in 2.01A above. Fabric shall be knuckled top and bottom with single width to full height of fence.
- C. Ties/Fasteners shall be 9-gauge aluminum wire.
- D. Fittings, clips, bolts, bands, bars, post tops/covers and other hardware necessary for a complete fence system shall be galvanized.
- E. Where fencing is shown on the Plans to be black vinyl or powder coated, all appurtenances, including fabric, posts, rails, clips, bands, fittings, etc., necessary for a complete fence system shall be black vinyl or powder coated. Vinyl or powder coating shall be the industry standard for this type of finish.

2.02 Posts and Rails

- A. Posts and rails shall be hot-dipped galvanized per ASTM A120, to match fabric and as shown on the Plans. All posts shall be installed with moisture-proofed caps on the top.
- B. Size and lengths of posts shall be as shown in the City of Roseville Design and Construction Standards PK-40, latest edition.

2.03 Gates

- A. Fabric and finish to match fence.
- B. Hinges and latches shall be industrial strength, heavy duty and shall fit snugly around post. Latches shall be lockable.
- C. Size and lengths of posts shall be as shown in the City of Roseville Design and Construction Standards PK-40, latest edition.

PART 3 - EXECUTION

3.01 Post Installation

- A. Posts are to be spaced evenly as shown on the City Standard and set plumb and true to lines with the top line uniform as shown in the City of Roseville Design and Construction Standards PK-40, latest edition.
- B. All posts shall be set in concrete as shown in the City of Roseville Design and Construction Standards PK-40, latest edition.
- C. Where nicks on vinyl or powder coated finished occurs due to installation, the Contractor shall re-finish and patch damaged areas immediately.

3.02 Fabric

- A. Attach fabric using fabric bands or clips spaced approximately 14" apart. Connections to top rails and tension wires shall utilize wire ties placed 24" on center.
- B. For corner and vertical end connections, install stretcher bars banded to posts and gate frames at 24" apart (maximum).
- C. All fabric to be stretched tight, free from sags and bulges.

3.03 Rails

- A. For splices along the top rail, provide couplings every 20'. The coupling shall produce a continuous brace from end to end of each stretch of fence. Install a heavy spring at every fifth coupling to allow for expansion or contraction.
- B. Utilize the appropriate fittings to ensure that all rails are rigidly clamped to end and corner posts.
- C. Clamp mid and bottom rails at each post.

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3.04 Gates

- A. Gates shall be installed consistent with the City Standard detail. Verify grade conditions along the fence bottom to ensure proper use of the gate(s).
- B. Gate openings shall be face-to-face dimensions and shall swing according to the Plans.

3.05 Cleaning

- A. Thoroughly clean all areas where work has occurred. Remove from the site excess material, debris and rubbish.
- B. Take all precautions to protect completed work. Immediately repair or replace all damaged areas due to tire ruts, erosion, compaction failure, etc. Keep all erosion control measures intact.

END OF SECTION

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SECTION 33 00 00 UTILITIES

PART 1 - GENERAL

1.01 General Requirements

- A. The requirements set forth in the General Conditions shall be in addition to the standards provided herein.
- B. The requirements set forth in the Supplemental Conditions shall be in addition to the standards provided herein.
- C. The standards set forth in the City of Roseville Design and Construction Standards, latest edition, for storm drainage throughout the project and for sanitary sewer installations within the public rights-of-ways, easements, or as shown on the improvement plans shall be in addition to the standards provided herein.
- D. The standards set forth in the latest edition of the California Building Code (CBC) for sanitary sewer installation within the project site, outside of the public right-of-way or easement shall be in addition to the standards provided herein.

1.02 Description

- A. Furnish all labor, materials and equipment for the complete installation of the storm drain system and sanitary sewer pipe, and necessary appurtenances as shown on the Plans and as specified herein.
- B. Submit a materials listing for review and approval prior to commencement of specified work.

1.03 Related Work

- A. Section 31 10 00: Clearing and Grubbing
- B. Section 31 20 00: Earthwork

1.04 Safety Requirements

- A. Furnish, install and maintain required sheeting, shoring, bracing, and other methods to ensure complete and safe work environment for all workers. Upon completion of work, remove all bracing, shoring, etc. in its entirety, unless otherwise directed by the Inspector.
- B. Prior to excavation or trenching, the Contractor shall contact USA Alert (800)
- C. 227-2600 to locate all known utilities a minimum of 48 hours prior to start of work. During the course of construction, the Contractor shall take every precaution to maintain and protect utilities noted to remain. Said utilities shall remain operational at all times, unless otherwise noted on the plans.

- D. The existing utilities are shown on the Plans based on the information available at the time of contract document development. The City shall not assume responsibility for any inaccuracies or incompleteness of the Plans based on such information. The Contractor shall immediately notify, upon damage of any pipeline or facility, the Owner and/or its agents and take every action necessary to repair or replace damaged facilities to the satisfaction of the Inspector, and at no additional cost to the City.
- E. Trenches, excavations and repair of pavement shall be consistent with Section 31 20 00: Earthwork.

1.05 Coordination

- A. The piping system as shown on the Plans is diagrammatic. The Contractor shall make reasonable adjustments to the layout to avoid conflicts, based on actual field conditions. Said changes shall not interfere with the design intent of the system.

1.06 Tolerance

- A. The allowable tolerance for the installation of pipe is 0.05 feet within grades or spot elevations indicated on the Plans.

1.07 Product Storage

- A. Take every precaution to protect the materials and pipes from damage during the delivery, storage and installation of the pipe system. Store in a cool, contained area, protected from direct sunlight and per manufacturer's recommendations. Pipe shall be supported on firm level ground at the site.

1.08 Record Drawings

- A. The Contractor shall keep an accurate record of the as-built conditions of the storm drain and sanitary sewer system. These records shall be updated daily and kept at the construction site. At any time, the Inspector may examine the conditions of the "as-builts" to ensure compliance of the above.

PART 2 - PRODUCTS

2.01 General

- A. All products shall conform to City of Roseville Design and Construction Standards, latest edition, except as noted below.

2.02 Drain Pipe

- A. Solid drainpipe shall be PVC SDR 35 and shall conform to ASTM D1784, or accepted equal. Gasketed connections shall conform to ASTM F477.

- B. Perforated drainpipe shall be smooth walled PVC, open per Caltrans Section 68-1.02K, or accepted equal.

2.03 Drain Rock

- A. Drain rock shall be Class 2 washed, $\frac{3}{4}$ " diameter.

2.04 Filter Fabric

- A. Filter fabric shall be MiraDRAIN 5000, or accepted equal.

2.05 Drains

- A. Drain Inlets shall be pre-cast and a minimum size of twenty-four inches (24") square or round by Jensen Precast, or accepted equal.
 - 1. Grate shall be heavy duty, cast iron, walk-on, and bolt down.
 - 2. Box extensions shall be Jensen Precast, or accepted equal.
 - 3. The base shall be six inches (6") thick.
 - 4. Walls shall be six inches (6") thick.
 - 5. A "No Dumping" Metal Storm Drain Marker shall be affixed to the concrete color of each drain inlet (See Detail DR-20)
 - 6. Contractor may install cast-in-place drain inlets in lieu of pre-cast drain inlets. Submit shop drawings and concrete mix design for review and approval.
- B. Channel Drains for baseball/softball backstop areas shall be Polycast 600 series pre-sloped trench drains with galvanized steel slotted grates or accepted equal.
- C. Drinking fountain drain inlet shall be eight inch (8") round cast iron drain with cast iron grate, #Z-742-VP by Zurn or accepted equal.
- D. Sanitary sewer clean outs shall be as specified in the City of Roseville, Design and Construction Standards, latest edition.

2.06 Manholes

- A. Manholes shall have tongue and groove joints, be forty-eight inches (48") minimum in diameter, meeting ASTM C-478.
- B. Covers shall be cast iron.
- C. All components shall conform to the City of Roseville Design and Construction Standards, latest edition.

2.07 Tracer Wire

- A. Insulated solid copper wire, minimum #12 gauge. Color shall be green.

2.08 Vitrified Clay Pipe

- A. Vitrified clay pipe (VCP) shall be as specified in Section 91 Sanitary Sewer in the City of Roseville, Design and Construction Standards, latest edition.

2.09 Potable Water Warning Tape

- A. On sites with both Recycled water and potable water lines. Blue plastic tape, 3 inches wide, with the words "CAUTION: POTABLE WATERLINE" imprinted in minimum 1-inch high, black letters. Imprinting shall be continuous and permanent.

PART 3 - EXECUTION

3.01 General

- A. All pipes shall slope uniformly from given elevations shown on the Plans.
- B. All pipes shall be accurately laid true to line and grade, utilizing accepted construction methods.
- C. Damaged or cracked pipe and fittings shall not be installed and shall be removed from site.
- D. Install all pipe in locations shown on the Plans, except where existing conditions necessitate minor changes.
- E. All pipe and fittings shall be kept clean and closed throughout the course of construction.
- F. Connections to existing sanitary sewer stubs shall be "TV-ed" and air tested prior to the start of construction per the City of Roseville Design and Construction Standards, latest edition.

3.02 Installation

- A. Installation of the specified pipe lines shall conform to the City of Roseville Design and Construction Standards, latest edition.
- B. Notify the Inspector a minimum of 48 hours prior to covering of work to ensure timely inspections.
- C. Cutting of AC or concrete paving shall be clean, vertical and straight, using a saw, or other tool specific to this application. Replace paving to existing or better condition prior to work.
- D. Trench and backfill shall be per City of Roseville Design and Construction Standards, latest edition.
- E. Catch basins and drain inlets shall be installed with a concrete collar with "No Dumping" message and fish symbol depressed into the concrete or bolted in place, consistent with Drawing DR-20 the City of Roseville Design and Construction Standards, latest edition.
- F. Drain inlets installed in mulched planter areas shall have a 12-inch wide collar of 2- to 6-inch river cobble placed over filter fabric.
- G. Channel drains shall be set per manufacturer's instructions. Place slotted grates along the entire length of the backstop, including wing fencing, wherever

- concrete is placed adjacent to the backstop system. Provide a below grade piped connection at all gate openings into the infield area. Do not install grated drain sections at these entry/exit points.
- H. Drain inlets at drinking fountains shall be located under jug filler and connected to storm drain per local codes.
 - I. Manholes shall be per City of Roseville Design and Construction Standards, latest edition. Install grate flush with finish grade.
 - J. Sanitary Sewer Clean-outs shall be installed with 3M ball markers and shall be located within planted or turf areas, whenever possible. Place clean-outs at 100' intervals throughout the project. Clean-outs shall not be located within play areas. Install per City of Roseville Design and Construction Standards, latest edition.
 - K. Upon completion, thoroughly flush storm drain system in the presence of the Parks Inspector.

3.03 Tracer Wire

- A. Install tracer wire on top of the potable water lines
- B. Tracer wire shall be continuous with no splices.

3.04 Potable Water Warning Tape

- A. To be used on all potable water piping installed within the same project limits as on-site recycled water piping.
- B. Install plastic warning tape in pipe backfill, six inches above pipe, for the entire length of the pipe.

3.05 Cleaning

- A. Keep site clean at all times. Remove from the site all debris and rubbish and legally dispose.

END OF SECTION

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DRAWINGS

Project: Cresthaven Tennis Court Renovation

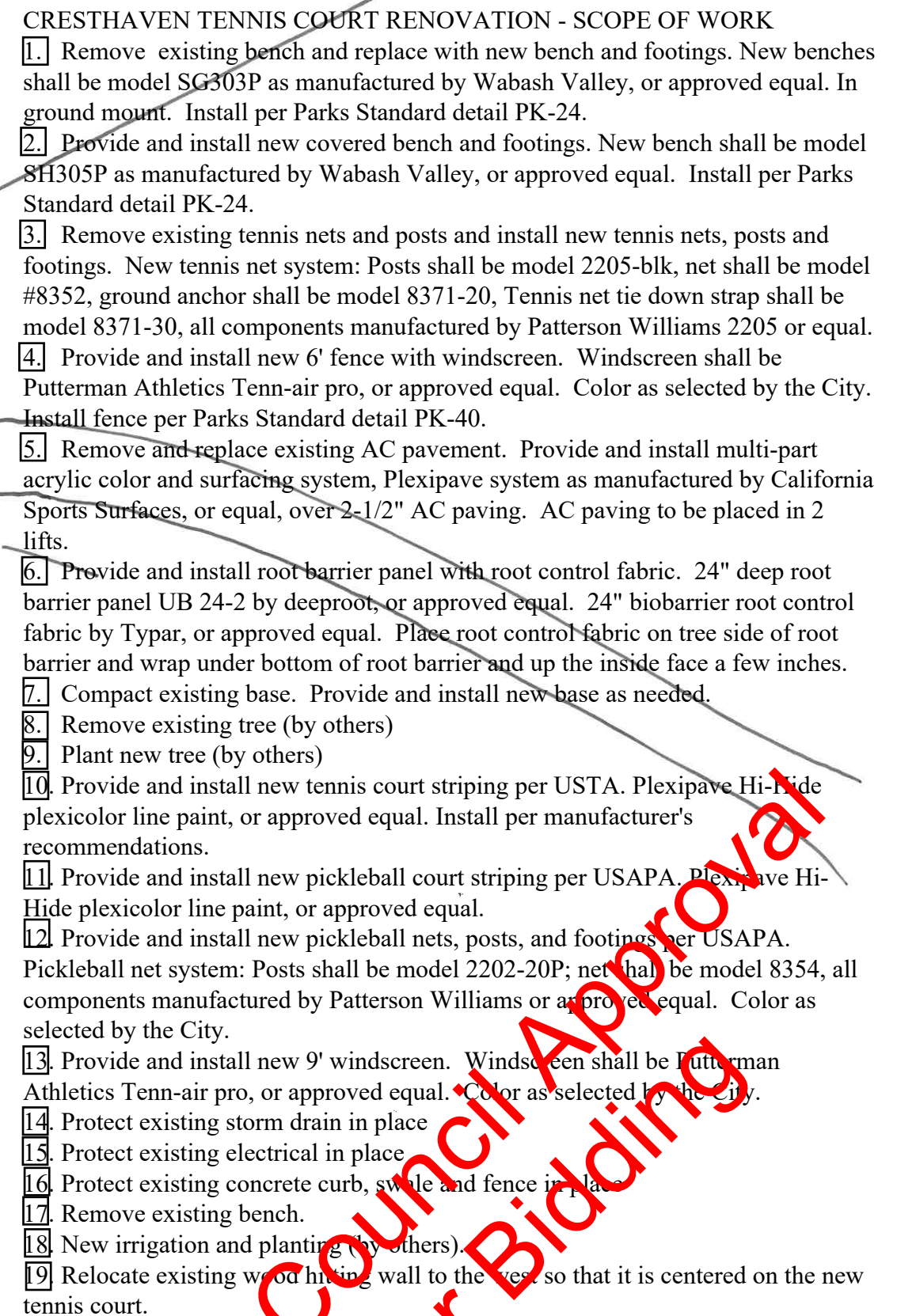
Project drawings are shown on the following page and included within the Project Manual, titled "TENNIS COURT RENOVATION - SCOPE OF WORK" dated 04/24/2020.

DRAW

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1" = 20' 0" 04/24/2020

General Note: Install per Parks Standard details and manufacturer's recommendations, typical.

TEXT OF AB 626

Assembly Bill No. 626

CHAPTER 810

An act to add and repeal Section 9204 of the Public Contract Code, relating to public contracts.

[Approved by Governor September 29, 2016. Filed with Secretary of State September 29, 2016.]

LEGISLATIVE COUNSEL'S DIGEST

AB 626, Chiu. Public contracts: claim resolution.

Existing law prescribes various requirements regarding the formation, content, and enforcement of state and local public contracts. Existing law applicable to state public contracts generally requires that the resolution of claims related to those contracts be subject to arbitration. Existing law applicable to local agency contracts prescribes a process for the resolution of claims related to those contracts of \$375,000 or less.

This bill would establish, for contracts entered into on or after January 1, 2017, a claim resolution process applicable to any claim by a contractor in connection with a public works project. The bill would define a claim as a separate demand by the contractor for one or more of the following: a time extension for relief from damages or penalties for delay, payment of money or damages arising from work done pursuant to the contract for a public work, or payment of an amount disputed by the public entity, as specified.

This bill would require a public entity, defined to exclude certain state entities, upon receipt of a claim sent by registered or certified mail, to review it and, within 45 days, provide a written statement identifying the disputed and undisputed portions of the claim. The bill would authorize the 45-day period to be extended by mutual agreement. The bill would require any payment due on an undisputed portion of the claim to be processed within 60 days, as specified. The bill would require that the claim be deemed rejected in its entirety if the public entity fails to issue the written statement.

This bill would authorize, if the claimant disputes the public entity's written response or if the public entity fails to respond to a claim within the time prescribed, the claimant to demand to meet and confer for settlement of the issues in dispute. The bill would require any disputed portion of the claim that remains in dispute after the meet and confer conference to be subject to nonbinding mediation, as specified. The bill would provide that unpaid claim amounts accrue interest at 7% per annum. The bill would prescribe a procedure by which a subcontractor or lower tier contractor may make a claim through the contractor.

This bill would require the text of these provisions, or a summary, to be set forth in the plans or specifications for any public work which may give rise to a claim. The bill would specify that a waiver of these rights is void and contrary to public policy, except as specified. The bill would also specify that it does not impose liability on a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

By increasing the duties of local agencies and officials, this bill would impose a state-mandated local program.

This bill would, on January 1, 2020, repeal the provision establishing the claim resolution process.

This bill would specify that these provisions constitute a matter of statewide concern.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that, if the Commission on State Mandates determines that the bill contains costs mandated by the state, reimbursement for those costs shall be made pursuant to these statutory provisions.

The people of the State of California do enact as follows:

SECTION 1. Section 9204 is added to the Public Contract Code, to read:

9204. (a) The Legislature finds and declares that it is in the best interests of the state and its citizens to ensure that all construction business performed on a public works project in the state that is complete and not in dispute is paid in full and in a timely manner.

(b) Notwithstanding any other law, including, but not limited to, Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2, Chapter 10 (commencing with Section 19100) of Part 2, and Article 1.5 (commencing with Section 20104) of Chapter 1 of Part 3, this section shall apply to any claim by a contractor in connection with a public works project.

(c) For purposes of this section:

(1) "Claim" means a separate demand by a contractor sent by registered mail or certified mail with return receipt requested, for one or more of the following:

(A) A time extension, including, without limitation, for relief from damages or penalties for delay assessed by a public entity under a contract for a public works project.

(B) Payment by the public entity of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public works project and payment for which is not otherwise expressly provided or to which the claimant is not otherwise entitled.

(C) Payment of an amount that is disputed by the public entity.

(2) "Contractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who has entered into a direct contract with a public entity for a public works project.

(3) (A) "Public entity" means, without limitation, except as provided in subparagraph (B), a state agency, department, office, division, bureau, board, or commission, the California State University, the University of California, a city, including a charter city, county, including a charter county, city and county, including a charter city and county, district, special district, public authority, political subdivision, public corporation, or nonprofit transit corporation wholly owned by a public agency and formed to carry out the purposes of the public agency.

(B) "Public entity" shall not include the following:

(i) The Department of Water Resources as to any project under the jurisdiction of that department.

(ii) The Department of Transportation as to any project under the jurisdiction of that department.

(iii) The Department of Parks and Recreation as to any project under the jurisdiction of that department.

(iv) The Department of Corrections and Rehabilitation with respect to any project under its jurisdiction pursuant to Chapter 11 (commencing with Section 7000) of Title 7 of Part 3 of the Penal Code.

(v) The Military Department as to any project under the jurisdiction of that department.

(vi) The Department of General Services as to all other projects.

(vii) The High-Speed Rail Authority.

(4) "Public works project" means the erection, construction, alteration, repair, or improvement of any public structure, building, road, or other public improvement of any kind.

(5) "Subcontractor" means any type of contractor within the meaning of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code who either is in direct contract with a contractor or is a lower tier subcontractor.

(d) (1) (A) Upon receipt of a claim pursuant to this section, the public entity to which the claim applies shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide the claimant a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, a public entity and a contractor may, by mutual agreement, extend the time period provided in this subdivision.

(B) The claimant shall furnish reasonable documentation to support the claim.

(C) If the public entity needs approval from its governing body to provide the claimant a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, the public entity shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide the claimant a written statement identifying the disputed portion and the undisputed portion.

(D) Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. If the public entity fails to issue a written statement, paragraph (3) shall apply.

(2) (A) If the claimant disputes the public entity's written response, or if the public entity fails to respond to a claim issued pursuant to this section within the time prescribed, the claimant may demand in writing an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, the public entity shall schedule a meet and confer conference within 30 days for settlement of the dispute.

(B) Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, the public entity shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after the public entity issues its written statement. Any disputed portion of the claim, as identified by the contractor in writing, shall be submitted to nonbinding mediation, with the public entity and the claimant sharing the associated costs equally. The public entity and claimant shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each

party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject to applicable procedures outside this section.

(C) For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

(D) Unless otherwise agreed to by the public entity and the contractor in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

(E) This section does not preclude a public entity from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this section does not resolve the parties' dispute.

(3) Failure by the public entity to respond to a claim from a contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A claim that is denied by reason of the public entity's failure to have responded to a claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the claim or the responsibility or qualifications of the claimant.

(4) Amounts not paid in a timely manner as required by this section shall bear interest at 7 percent per annum.

(5) If a subcontractor or a lower tier subcontractor lacks legal standing to assert a claim against a public entity because privity of contract does not exist, the contractor may present to the public entity a claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that the contractor present a claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the claim be presented to the public entity shall furnish reasonable documentation to support the claim. Within 45 days of receipt of this written request, the contractor shall notify the subcontractor in writing as to whether the contractor presented the claim to the public entity and, if the original contractor did not present the claim, provide the subcontractor with a statement of the reasons for not having done so.

(e) The text of this section or a summary of it shall be set forth in the plans or specifications for any public works project that may give rise to a claim under this section.

(f) A waiver of the rights granted by this section is void and contrary to public policy, provided, however, that (1) upon receipt of a claim, the parties may mutually agree to waive, in writing, mediation and proceed directly to the commencement of a civil action or binding arbitration, as applicable; and (2) a public entity may prescribe reasonable change order, claim, and dispute resolution procedures and requirements in addition to the provisions of this section, so long as the contractual provisions do not conflict with or otherwise impair the timeframes and procedures set forth in this section.

(g) This section applies to contracts entered into on or after January 1, 2017.

(h) Nothing in this section shall impose liability upon a public entity that makes loans or grants available through a competitive application process, for the failure of an awardee to meet its contractual obligations.

(i) This section shall remain in effect only until January 1, 2020, and as of that date is

repealed, unless a later enacted statute, that is enacted before January 1, 2020, deletes or extends that date.

SECTION 2.

The Legislature finds and declares that it is of statewide concern to require a charter city, charter county, or charter city and county to follow a prescribed claims resolution process to ensure there are uniform and equitable procurement practices.

SECTION 3.

If the Commission on State Mandates determines that this act contains costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code.

For Council Approval
Not For Bidding



COUNCIL COMMUNICATION

CC #: 0861
File #: 0900-02

Title: West Side Tanks and Pump Station Project - Approval of Plans and Specifications
Contact: Janice Gainey 916-223-7860 jrgainey@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.2.

RECOMMENDATION TO COUNCIL

Staff recommends that City Council approve the Construction Plans and Specifications for the Design-Assist Construction of the West Side Tanks and Pump Station Project.

BACKGROUND

Projected population growth in the western portion of the City requires additional potable water storage and distribution facilities be constructed to support increased water demand. The five-acre West Side Tank and Pump Station site is located adjacent to the Pleasant Grove Wastewater Treatment Plant and is identified in the West Roseville Specific Plan as the location for potable water storage reservoirs and associated pumping facilities.

This project supports the City's Strategic Plan Goal F - Invest in Well-Planned Infrastructure and Growth.

In November 2019, a Request for Proposals (RFP) for Design-Assist Construction of the facilities was published. On January 30, 2020, four construction firms submitted proposals to the City Clerk's office for review and consideration.

On May 6, 2020, City Council awarded a Design-Assist and Construction Agreement for the West Side Tank and Pump Station Project to Auburn Constructors LLC, the highest ranked proposer of the four proposals received. Initial Design-Assist efforts have begun and enabled the development of this set of plans and specifications and some preconstruction activities. As is typical with this project delivery method, there are likely to be other design changes to some portions of this set of plans and specifications as we move through the Design-Assist Construction process.

Electronic copies of the plans and specification documents are attached and hard copies are available for review at the City Clerk's office.

FISCAL IMPACT

Funding exists in the West Side Tank and Pump Station project. There are no fiscal impacts from this Council action.

ENVIRONMENTAL REVIEW

Development of the West Side Tank and Pump Station Phase 2 Project was previously evaluated in the Amoruso Ranch Specific Plan Environmental Impact Report (EIR) (SCH No. 2008032115), certified June 15, 2016. Construction of the West Side Tank and Pump Station Phase 2 project is within the scope of the project covered by the Amoruso Ranch Specific Plan Final EIR. The EIR provides environmental analyses of community infrastructure and facilities, including specifically addressing potable water storage and potable water storage tank location on the West Side Tank and Pump Station project site. Because the project is consistent with the Amoruso Ranch Specific Plan Final EIR, no new effects would be expected to occur and all applicable mitigation measures from the Amoruso Specific Plan EIR will be implemented during the design and construction of the project. Because the proposed project meets the requirements identified in Section 15183 of the State CEQA Guidelines, no additional CEQA review is required.

Respectfully Submitted,

Janice Gainey, Senior Engineer

Richard Plecker, Environmental Utilities Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

West Side Tank Volume 3 Specifications

West Side Tank Volume 4 Drawings First Portion

West Side Tank Volume 4 Drawings Second Portion

City of Roseville

CONTRACT DOCUMENTS FOR DESIGN-ASSIST AND CONSTRUCTION OF

WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2)

VOLUME 3 OF 4: SPECIFICATIONS (DIVISIONS 1-16)

November 2019

FINAL DESIGN FOR CITY COUNCIL APPROVAL



ENGINEER:



WATER WORKS ENGINEERS, LLC.

CONTACT:

Mike Fisher
(916) 780-2888 Extension 401

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SECTION 01110

SUMMARY OF WORK

PART 1 - GENERAL

1.1 DEFINITIONS AND CONTRACT PROVISIONS

- A. The term "Contract Documents" used throughout the Specifications and Drawings is equivalent to "Agreement" as defined in the Design-Assist Construction Agreement.
- B. The term "Construction Manager" used throughout the Specifications and Drawings is as defined in the Agreement.
 - 1. As it pertains the Specifications and Drawings, the Construction Manager may assign part of the Construction Manager's duties, rights and responsibilities to "Architect/Engineer".
- C. The term "Drawings" used throughout the Specifications and Drawings is equivalent to "Plans" as defined in the Agreement.
- D. The term "Engineer" or "ENGINEER" used throughout the Specifications and Drawings is equivalent to "Architect/Engineer" as defined in the Agreement.
- E. The "Final Design Submittal" refers to the Specifications and Drawings included as attachments to the Request for Proposals to describe the Work. These documents will be modified during the Design-Assist process to produce Construction Documents.
- F. The term "Owner" or "OWNER" used throughout the Specifications and Drawings is equivalent to "CITY" as defined in the Agreement.
- G. Refer to the Agreement for definitions and contract provisions not included in the Specifications or Drawings.

1.2 LOCATION AND DESCRIPTION OF WORK

- A. The Work is located at 4501 Westpark Drive in Roseville, California 95747.
- B. The Work covers the construction of the West Side Tank and Pump Station as generally described below and as shown on the Drawings and Specifications:
 - 1. Water Storage Tanks:
 - a. Over excavation beneath tanks and installation of mechanical stabilized earth (MSE) foundation improvement system to provide suitable subgrade conditions for tank construction.
 - b. Construction of two (2) 6.0 MG at-grade pre-stressed concrete water storage tanks with flat concrete roofs. Each tank will be identically sized at 170 ft diameter with 40 ft sidewall height.
 - c. Installation of two access hatches, roof vent, interior and exterior access ladders, and electric davit cranes at each tank.
 - d. Installation of leak detection system with PVC liner and perforated piping.
 - e. Installation of wall drain piping.
 - f. Installation of downspouts from roof of each tank for rainwater collection.
 - g. Installation of hydrodynamic tank mixing system in each tank.

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- h. Installation of internal and external overflow piping and supports at each tank.
- i. Installation of sump in floor of each tank with drain piping and valves.
- j. Installation of water sample station at each tank.
- 2. Tank Valve Vault:
 - a. Construction of new cast-in-place concrete valve vault with structural supports and grating.
 - b. Installation of seven (7) butterfly valves and two (2) check valves associated with tank inlet and outlet. This piping and valve arrangement allow the two tanks to be operated in parallel, in series, or independently taken offline for maintenance.
- 3. Booster Pump Station:
 - a. Construction of 2,537 sq. ft CMU block Booster Pump Station building to house booster pumps, sodium hypochlorite storage and feed system, and electrical and control equipment.
 - b. Installation of architectural canopies over exterior electrical switchgear and valve vault.
 - c. Installation of coiling overhead door for vehicle access into pump room.
 - d. Installation of evaporative cooling for pump room and air conditioning for electrical room.
 - e. Installation of trench drains for building drainage and small diameter pipe routing.
 - f. Installation of roof hatches over all pumps with winch operated rigging to allow operators to open hatches from ground level.
 - g. Construction of valve vault outside of building for suction-side pump isolation valves.
 - h. Installation of four (4) 250 hp vertical turbine booster pumps (3 duty plus 1 standby) set in below-grade suction barrels. Each pump shall have a design capacity of 3,800 gpm at 170 ft TDH.
 - i. Installation of 16-inch electronic control valve for tank filling and pressure relief.
 - j. Installation of piping, pipe supports, valves and appurtenances associated with pumping system.
 - k. Installation of sample pump for tank outlet chlorine residual analyzer.
 - l. Installation of 500-gallon dual contained sodium hypochlorite storage tank.
 - m. Installation of skid-mounted progressive cavity sodium hypochlorite metering pumping system.
 - n. Installation of two (2) emergency eyewash and shower systems with tepid water system.
 - o. Installation of 2,000-gallon bladder-style hydropneumatic tank and associated piping, pipe supports, valves and foundation.
- 4. Electrical:
 - a. All Electrical Contractor work, including coordination with electric utility and installation of electric service to site including transformer, conduit and wiring.
 - b. Installation of 1,500 kW standby diesel generator, dual-contained fuel tank, load bank and access stairs and platforms.
 - c. Installation of exterior switchboard at Booster Pump Station.
 - d. Installation of interior automatic transfer switch, distribution sections, panelboard, transformer, control panel and security panel in electrical room of Booster Pump Station.
 - e. Installation of two (2) 250 hp variable frequency drives and two (2) reduced voltage soft starters in electrical room of Booster Pump Station.
 - f. Installation of light fixtures on and in the Booster Pump Station and light poles throughout the site.
 - g. Installation of all conduit, wire, supports, pullboxes, etc. to support the new system.

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5. Instrumentation and Controls:
 - a. All System Integrator work, including coordination and installation of programmable logic controller (PLC) and control panel to monitor and control the new system. Programming of PLC and SCADA will be provided by OWNER Application Programmer.
 - b. Installation of level measurement devices, ladder and hatch intrusion switches and power supply to davit cranes at each water storage tank.
 - c. Installation of level measurement devices in tank valve vault.
 - d. Installation of free chlorine residual analyzers for tank inlet and outlet sampling.
 - e. Installation of pressure transmitter on pump discharge header.
 - f. Installation of bi-directional 24-inch magnetic flowmeter for tank fill and pump discharge flow measurement.
 - g. Installation of site access and security system, including fiber optic network tied into Pleasant Grove WWTP Administration Building.
 - h. Installation of miscellaneous instrumentation.
6. Miscellaneous Site Work:
 - a. Installation of valve vault to tie into existing water distribution system with new 30-inch piping.
 - b. Installation of 30-inch tank fill, 42-inch tank outlet and miscellaneous yard piping, including sewer and storm drain manholes and catch basins.
 - c. Contractor design and installation of cathodic protection system, including all anodes, test stations, insulating flanges, etc.
 - d. Site grading and construction of curbs, gutters and paving.
 - e. Construction of lined bioretention basins for stormwater treatment prior to discharge to existing storm drain system.
 - f. Construction of CMU block wall and chain-link fencing around site perimeter.
 - g. Construction of steel fencing at main site entrance with automatic gate and single-leaf gate for pedestrian access.
 - h. Connecting to existing recycled water distribution system, installation irrigation system between Westpark Drive and new CMU block wall, planting shrubs and installing mulch.
 - i. Installation of and maintenance of site erosion control measures.
7. Project Management and Administration:
 - a. Preparing and providing submittals.
 - b. Maintaining project schedule.
 - c. Maintaining As-Built Contract Drawings on a continuous basis.
 - d. Preparing Requests for Information.
 - e. Startup, testing, training and project closeout tasks to provide a complete and functional system.

1.3 PROJECT DOCUMENTS

- A. The Work is described in the following project documents:
 1. Volume 1 – Request for Proposals
 2. Volume 2 – Sample Contract
 3. Volume 3 – Technical Specifications
 4. Volume 4 – Drawings
- B. Refer to the Request for Proposals for the following supplemental information referenced from the Drawings and Specifications:
 1. Geotechnical Report
 2. Stormwater Pollution Prevention Plan

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1.4 COORDINATION

- A. The CONTRACTOR shall be solely responsible for coordination of all of the Work of this Contract.
- B. The CONTRACTOR shall supervise, direct and cooperate fully with all Subcontractors, manufacturers, fabricators, suppliers, distributors, installers, testing agencies and all others whose services, materials or equipment are required to ensure completion of the Work within the Contract Time.
- C. Work of Others:
 - 1. The CONTRACTOR shall generally perform the Work according to the suggested sequence of construction as described in Section 01130, Special Project Constraints.
 - 2. The CONTRACTOR shall cooperate with and coordinate CONTRACTOR's Work with the work of any other contractor, utility service companies, or OWNER's representatives performing work at the site.
 - 3. The CONTRACTOR shall also coordinate their Work with the work of others to assure compliance with schedules.
 - 4. The CONTRACTOR shall attend and participate in all project coordination or progress meetings and report on the progress of all Work and compliance with schedules.
 - 5. If any part of the work depends upon the work of others for proper execution or results, the CONTRACTOR shall inspect and promptly report to the ENGINEER any apparent discrepancies or defects in such work of others that render it unsuitable for such proper execution and results.
 - 6. Failure of the CONTRACTOR to so inspect and report shall constitute an acceptance of the work of others as fit and proper except as to defects which may develop in the work of others after execution of the work by the CONTRACTOR.
- D. Interference with work on utilities:
 - 1. The CONTRACTOR shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, repair, or otherwise rearranging of any facilities which interfere with the progress of the work.
 - 2. The CONTRACTOR shall schedule the work so as to minimize interference with said relocation, altering, repair, or other rearranging of facilities.
- E. Responsibility for Damage:
 - 1. The CONTRACTOR shall not be responsible for damage done by CONTRACTORs not under their jurisdiction.
 - 2. The CONTRACTOR will not be liable for any such loss or damage, unless it is through the negligence of the CONTRACTOR.

1.5 WORK BY OTHERS

- A. OWNER will perform the following work:
 - 1. Operation of all existing system valves and equipment, unless specified otherwise.
 - 2. PLC and SCADA programming by CITY.
- B. Other contracts as follows:
 - 1. Construction of the future Operations Building will be under a separate contract following completion of this project.

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1.6 SITE CONDITIONS

A. Site Investigation and Representation

1. The CONTRACTOR acknowledges that it has satisfied itself as to the nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, tide stages, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during the prosecution of the work and all other matters which can in any way affect the work or the cost thereof under this Contract.
2. The CONTRACTOR further acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials to be encountered from inspecting the site and from evaluating information derived from exploratory work that may have been done by the OWNER or included in these Contract Documents. Any failure by the CONTRACTOR to become acquainted with all the available information will not relieve the CONTRACTOR from responsibility for properly estimating the difficulty or cost of successfully performing the work or for properly installing the Work.
3. Field Verification:
 - a. Before undertaking each part of the work, the CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements.
 - b. As the work proceeds, the CONTRACTOR shall field verify the depth and location of all buried utilities, and existing systems, and location of hazardous waste and contaminants.
 - c. The CONTRACTOR shall promptly report in writing to the ENGINEER any conflict, error, or discrepancy which the CONTRACTOR may discover and shall obtain a written interpretation or clarification from the ENGINEER before proceeding with any work affected thereby.

B. Existing Utilities and Improvements

1. Location of Underground Utilities:
 - a. Known existing underground conduits, pipelines and other utilities have been shown on the contract drawings in their approximate locations (within 3 feet of actual location). However, the accuracy or completeness of utilities indicated on the drawings is not guaranteed.
 - b. It shall be the responsibility of the CONTRACTOR to determine the exact location of all utilities and their service connections.
 - c. All potholing or other procedures for verifying utility location shall be performed by the CONTRACTOR as necessary to prepare for excavation at least 4 working days in advance of scheduled excavation.
 - d. The CONTRACTOR shall immediately notify the ENGINEER as to any utility located by him which has been incorrectly shown or omitted from the drawings.
 - e. If the CONTRACTOR cannot locate an underground utility whose presence is indicated on the Drawings, the ENGINEER shall be notified in writing.
 - f. The CONTRACTOR shall ascertain the exact locations of underground utilities whose presence is indicated on the Drawings, the locations of their service laterals work and of service laterals or appurtenances of any other underground utilities which can be inferred from the presence of visible facilities such as buildings, meters and junction boxes prior to doing work that may damage such utilities or interfere with their service.
 - g. Utilities Not Shown on Drawings:

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- 1) Attention is directed to the possible existence of underground utilities not indicated on the Drawings and to the possibility that underground utilities may be in a location different from that indicated on the Drawings.
 - 2) If the ENGINEER determines that the underground utility for which such notice has been given has not been depicted on the Drawings with reasonable accuracy (within 3 feet of actual location), the additional cost incurred in locating the utility will be paid for as extra work as provided in the Agreement.
 - 3) If the CONTRACTOR discovers underground an utility not indicated on the Drawings, the CONTRACTOR shall immediately give the ENGINEER and the Utility Company written notification of the existence of such utility.
 - 4) Such utilities shall be located and protected from damages as directed by the ENGINEER and the cost of such work will be paid for as extra work as provided in the Agreement.
2. Utility Coordination:
 - a. The CONTRACTOR shall notify Underground Service Alert (USA) at least 4 days prior to excavation, telephone (800) 642-2444.
 - b. The CONTRACTOR shall also contact all utility owners not registered with USA but known to have utilities in the project area to field locate underground utilities at least 4 days prior to excavation.
 - c. The CONTRACTOR shall notify all owners of utilities when the Work is in progress and shall make arrangements as are necessary to coordinate outages or make any emergency repairs.
 - d. Existing utilities that are shown or that are made known and located to the CONTRACTOR prior to excavation, and that are to be retained; and all utilities that are constructed during excavation operations shall be properly supported and protected from damage during the progress of the work.
 3. Utility Protection and Damage:
 - a. Existing utilities that are shown or that are made known and located to the CONTRACTOR prior to excavation, and that are to be retained, and all utilities that are constructed during excavation operations shall be properly supported and protected from damage during the progress of the work.
 - b. Should any damage to a utility occur during the progress of the work, the CONTRACTOR shall notify the OWNER or the utility at once and render all assistance possible to repair the damage and restore the service.
 - c. No extra compensation will be made for the repair of any services or utility damaged by the CONTRACTOR nor for any damage incurred through neglect or failure to provide adequate protection to existing utilities.
 - d. The provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.
 - e. Damage Report:
 - 1) If the CONTRACTOR damages any underground utilities not shown on the Drawings or not depicted on the Drawings with reasonable accuracy (within 3 feet of actual location) or any lateral service the location of which could not be inferred by the CONTRACTOR, a written report thereof shall be made immediately to the ENGINEER by CONTRACTOR.
 - 2) The CONTRACTOR's report shall also advise the ENGINEER of any schedule delays. Compensation for such delays will be determined in accordance with the Agreement. The CONTRACTOR shall be entitled to no other compensation for any such damage.
 4. All utilities encountered along the line of the work shall remain continuously in service during all work under the Contract, unless otherwise shown on the drawings,

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or unless other arrangements satisfactory to the ENGINEER are made with the owner of said utilities.

C. CONTRACTOR's Responsibility for Utility Facilities and Service

1. Where the CONTRACTOR's operations could cause damage or inconvenience to railway, telephone, television, power, oil, gas, water, sewer, or irrigation systems, the CONTRACTOR shall make all arrangements necessary for the protection of these utilities and services.
2. The CONTRACTOR shall be solely and directly responsible to the owner and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this Contract.
3. Neither the OWNER nor its officers or agents shall be responsible to the CONTRACTOR for damages because of the CONTRACTOR's failure to protect utilities encountered in the work.
4. In no event shall interruption of any utility service be allowed outside working hours unless granted by the owner of the utility.
5. No sand, mud, rocks or other construction debris shall be disposed of in the sanitary sewers or storm sewers.
6. Any discharge of construction water to the sewer or storm drain systems requires a City of Roseville discharge permit a minimum of 7 calendar days prior to planned discharge, as approved by ENGINEER.
7. Where bypassing of sewage is required to perform sewer repairs or service relocations and where temporary pumps are required to bypass any sewage across traffic lanes, the discharge lines crossing the traffic lanes shall be buried a minimum of 4 inches below the pavement surface and backfilled with temporary asphalt concrete surfacing. The CONTRACTOR shall take all necessary steps to assure continuous flow of sewage. Bypassing of untreated wastewater to surface waters or courses will not be permitted.
8. The CONTRACTOR shall replace, at its own expense, any and all existing utilities or structures removed or damaged during construction, to their existing condition unless otherwise provided for in these Contract Documents.
9. The CONTRACTOR shall repair or replace, at its own expense, all pavement damaged during the construction, to its existing condition unless otherwise provided for in these Contract Documents.

D. Names of Known Utilities Serving the Area

1. The following is a list of the known public utilities serving the area:
 - a. City of Roseville:
 - 1) Water – (916) 774-5750.
 - 2) Recycled Water – (916) 774-5750.
 - 3) Sewer – (916) 774-5750
 - 4) Electric – (916) 797-6937
 - b. Pacific Gas and Electric (PG&E):
 - 1) Gas – (800) 743-5000

E. Railroads

1. The CONTRACTOR shall not perform work or occupy any part of railroad property without a permit authorizing the same.

F. Interfering Structures

1. The CONTRACTOR shall take necessary precautions to prevent damage to existing structures whether on the surface, aboveground, or underground. An attempt has

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been made to show major structures on the Drawings. While the information has been compiled from the best available sources, its completeness and accuracy cannot be guaranteed, and it is presented as a guide to avoid possible difficulties.

2. The CONTRACTOR shall protect all existing structures, trees, shrubs, and other items on the project site that are to be preserved, by substantial barricades or other devices commensurate with the hazard, from injury or destruction by vehicles, equipment, workmen, or other agents.
3. Where existing fences, gates, buildings, or any other structure must be removed to properly carry out the work, or are damaged during the work, they shall be restored at the CONTRACTOR's expense to their original condition or better.
4. Without additional compensation, the CONTRACTOR may remove and replace in a condition as good as or better than original, any small structures such as fences, and signposts that interfere with the CONTRACTOR's operations.

G. Field Relocation

1. During the progress of construction, it is expected that minor relocations of the work will be necessary.
2. Such relocations shall be made only by direction of the ENGINEER.
3. If existing structures are encountered that will prevent construction as shown, notify the ENGINEER before continuing with the work in order that the ENGINEER may make such field revisions as necessary to avoid conflict with the existing structures.
4. If the CONTRACTOR shall fail to notify the ENGINEER when an existing structure is encountered, and shall proceed with the work despite this interference, CONTRACTOR shall do so at their own risk.
5. Any CONTRACTOR request(s) for additional compensation or contract time resulting from necessary field relocations will be considered as set forth in the Agreement.
6. If the CONTRACTOR fails to notify the ENGINEER when a structure which interferes with construction is encountered, and proceeds with the work despite this obstruction, the CONTRACTOR shall do so at their own risk and at no additional cost to the OWNER.

1.7 REFERENCE POINTS AND SURVEYS

- A. Location and elevation of bench marks are shown on Drawings.
- B. Dimensions for lines and elevations for grades of structures, appurtenances, and utilities are indicated on Drawings, together with other pertinent information required for laying out Work. If conditions vary from those indicated, notify OWNER immediately, who will make or approve minor adjustments, as required.
- C. OWNER may perform checks to verify accuracy of CONTRACTOR's layout Work and that completed Work complies with Contract Documents.
- D. Any existing survey points or other control markers destroyed without proper authorization will be replaced by owner of the survey points or control markers at CONTRACTOR's expense.
- E. CONTRACTOR's Responsibilities:
 1. Provide all survey and layout required.
 2. Locate and protect reference points prior to starting site preparation.
 3. Notify OWNER at least 3 working days in advance when grade and line surveying will be performed by CONTRACTOR

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4. Check and establish exact location of existing facilities prior to construction of new facilities and any connections thereto.
5. In event of discrepancy in data provided by OWNER, request clarification before proceeding with Work.
6. Provide cut sheets for all staking.
7. Preserve and leave undisturbed control staking until ENGINEER has completed checks it deems necessary.
8. Re-establish reference points resulting from destruction by CONTRACTOR's operations.
9. Cooperate with ENGINEER so that checking and measuring may be accomplished with least interference to CONTRACTOR's operations.

1.8 SEQUENCE AND PROGRESS OF WORK

- A. The CONTRACTOR shall submit a Construction Schedule covering the entire Work in accordance with Section 01320, Progress Schedule.
- B. The CONTRACTOR shall incorporate the requirements of Section 01130, Special Project Constraints, into the Construction Schedule.
- C. Alternate Sequence:
 1. The CONTRACTOR's schedule may use a different sequence from that shown or specified, if techniques and methods known to the CONTRACTOR will result in cost and time savings to the OWNER, still achieve the required objective and maintain the same or greater level of treatment.
 2. The ENGINEER's determination on the acceptability of any alternative sequence from that shown or specified shall be final.

1.9 CONTRACTOR'S USE OF PREMISES

- A. The CONTRACTOR shall coordinate use of the premises, for the CONTRACTOR's storage and the operations of the CONTRACTOR's workmen, with OWNER and utility service companies.
- B. Restriction of Work Area:
 1. The full use of the premises for storage, the operations of workmen and for all other construction activities will not be available to the CONTRACTOR.
 2. The CONTRACTOR must operate entirely within the space allowed to the CONTRACTOR.
 3. The Drawings defines the area allocated to the CONTRACTOR.
- C. The CONTRACTOR shall be solely responsible for obtaining and paying all costs in connection with any additional work area, storage sites, access to the site or temporary right-of-way, which may be required for proper completion of the Work.
- D. Limitations on Use of Work Area:
 1. It shall be understood that responsibility for protection and safe-keeping of equipment and materials on or near the site will be entirely that of the CONTRACTOR and that no claim shall be made against the OWNER or their authorized representatives by reason of any act.
 2. It shall be further understood that should any occasion arise necessitating access to the sites occupied by these stored materials or equipment, the ENGINEER shall direct

the CONTRACTOR owning or responsible for the stored materials and equipment to immediately move the same.

3. No materials or equipment may be placed upon the property of the OWNER, other than in the designated areas as shown on the Drawings, unless the ENGINEER has agreed to the location contemplated by the CONTRACTOR to be used for storage.
 4. All stored materials shall be labeled according to the appropriate contractor or Subcontractor with the manufacturer's label as well.
 5. Appropriate material safety data sheets (e.g., MSDS) shall be provided.
- E. The CONTRACTOR shall be required to share use of the premises with other Contractors whose services the OWNER has obtained or will obtain for construction of other facilities on the site.

1.10 USE OF OWNER'S FACILITIES

- A. The CONTRACTOR may use existing facilities or equipment in the Work for construction purposes, only if the OWNER's written permission is obtained.
- B. Restore existing facilities and equipment used for temporary purposes to original condition in a manner satisfactory to OWNER.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01130

SPECIAL PROJECT CONSTRAINTS

PART 1 - GENERAL

1.1 LIMIT OF CONSTRUCTION ACTIVITIES ON WORK SITE

- A. Traffic Control:
 - 1. During non-work hours, the CONTRACTOR shall keep all lanes of traffic open and clear. All trenches shall be backfilled or covered with suitable steel plates and open to traffic.
 - 2. No equipment, construction material or excavated material that will interfere with traffic shall be stored on streets or roadways at any time.

1.2 SEQUENCE OF WORK

- A. General:
 - 1. The CONTRACTOR shall schedule and sequence their work to complete the Work by the specified completion date.
 - 2. The OWNER's water distribution, recycled water, sewer collection and storm drain systems must remain operational at all times, with scheduled shutdowns as necessary to complete the Work and with prior approval of Owner, as described herein.
 - 3. Re-vegetation of graded areas shall take place as quickly as possible as weather permits.

1.3 PROJECT CONSTRAINTS

- A. Maintenance of OWNER's Operations:
 - 1. Constraints listed herein involve limits on activities during construction. These limits relate to the critical nature of the existing water system.
 - 2. Continuous operation of OWNER's facilities is of critical importance. Schedule and conduct activities to enable existing facilities to operate continuously, unless otherwise specified.
 - 3. Work Plan:
 - a. The CONTRACTOR shall submit a detailed Work Plan and time schedule for all construction activities that will make it necessary to remove a tank, pipeline, electrical circuit, equipment, structure, road or other facilities from service, including the critical outages identified herein.
 - b. The Work Plan shall, at a minimum, identifying:
 - 1) the date and time when each activity will occur;
 - 2) what equipment will be present including standby equipment;
 - 3) what assistance will be required by OWNER's operating personnel;
 - 4) an emergency backup plan identifying what action will be taken if Work cannot be completed within the allotted time; and
 - 5) what individual will be in charge of the activity.
 - c. Submit Work Plan 10 working days prior to the scheduled activity.
 - 4. Perform Work continuously during critical connections and changeovers, and as required to prevent interruption of OWNER's operations.
 - 5. Shutdowns:

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- a. Coordinate proposed Work with OWNER and facility operations personnel before affecting unit shutdowns. The CONTRACTOR shall provide written confirmation of the shutdown date and time five (5) working days prior to the actual shutdown.
 - b. Under no circumstances shall the CONTRACTOR cease Work at the end of a normal working day or at the end of a working week if such actions may inadvertently cause a cessation of any facility operating process, in which case, remain onsite until necessary repairs are complete.
- 6. Do not close lines, open valves or gates, shut down equipment, or take other action which would affect the operation of existing systems, except as specifically required by the Contract Documents and after approval of OWNER.
- 7. Do not proceed with Work affecting a facility's operation without obtaining OWNER's advance approval of the need for and duration of such Work.
- B. Relocation of Existing Facilities:
 - 1. During construction, it is expected that minor relocations of Work will be necessary.
 - 2. Provide complete relocation of existing structures and Underground Facilities, including piping, utilities, equipment, structures, electrical conduit wiring, electrical duct bank, and other necessary items.
 - 3. Use only new materials for relocated facility. Match materials of existing facility, unless otherwise shown or specified.
 - 4. Perform relocations to minimize downtime of existing facilities.
 - 5. Install new portions of existing facilities in their relocated position prior to removal of existing facilities, unless otherwise accepted by OWNER.
- C. Hours of Work and Overtime:
 - 1. Normal working hours at the Construction Site for the project shall be 7A.M. to 5P.M., weekdays, no work during the weekend nor during City observed holidays.
 - a. Conduct Work outside normal working hours only after obtaining prior written consent and approval from the OWNER.
 - 1) Contractor shall request work-hour variations in writing, a minimum of ten (10) days prior to the start of the proposed work period.
 - 2) Contractor shall not rely on approval of work outside of normal working hours without prior consent of the OWNER. Approval shall be at the sole discretion of the OWNER.
 - b. Contractor will develop Project Schedule assuming work during normal working hours only.
 - 2. All overtime Work by the CONTRACTOR necessary to conform to the requirements of this Section and related Sections shall be performed by the CONTRACTOR, at no cost to the OWNER and shall be performed in accordance with the Agreement. The CONTRACTOR shall make no claims for extra compensation as a result thereof.

1.4 CONSTRUCTION SEQUENCING CONSTRAINTS

- A. No specific construction sequencing constraints other than those listed in this or other Specification section have been determined at the time of Final Design.
- B. Construction sequencing constraints will be developed by Design-Assist Team as necessary.

1.5 PROJECT STAFFING

- A. Project superintendent (Job Superintendent, serving as resident Superintendent and Contractor's authorized representative), employed by the Contractor, shall be on-site five

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days per week for 8 hours a day and in responsible charge of all work, quality control, subcontractors, permit compliance, and the site.

- B. Qualified Storm Water Pollution Prevention Plan (SWPPP) Practitioner (QSP) , employed by Contractor, must be on call to come to the site when a Rain Event Action Plan (REAP) needs to be prepared.

1.6 STORMWATER MANAGEMENT

- A. CONTRACTOR responsible for stormwater management for the duration of the project.

PART 2 - PRODUCTS (NOT USED)

2.1 PRODUCTS

- A. All material that contacts potable water shall be "lead free" to the extent defined in the California Assembly Bill 1953 Chapter 853 and NSF 61 approved.

PART 3 - EXECUTION (NOT USED)

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SECTION 01140

WATER POLLUTION CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. Provide all labor, materials and resources to fully comply with applicable local, State and Federal regulations and requirements for water pollution prevention and control.
2. The preliminary SWPPP has been prepared and posted to the City of Roseville's Public Purchase website. It is made available for the convenience of the CONTRACTOR. The CONTRACTOR shall develop, update, revise and finalize as needed to comply with all requirements.
3. CONTRACTOR to comply with the City's municipal separate storm sewer system (MS4) Stormwater Management Program.

1.2 SUBMITTALS

A. Stormwater Pollution Prevention Plan (SWPPP) Information:

1. Within 10 business days of the contract being signed, the CONTRACTOR shall provide the following information:
 - a. Provide project SWPPP to comply with Construction General Permit Requirements and all other requirements of the Contract Documents;
 - b. Provide the Prime CONTRACTOR's company name, address, contact person (with office phone and emergency/cell phone) for Sections 100.1 and 500.1;
 - c. Provide the Qualified SWPPP Practitioner's (QSP) name, company name, address, office phone and emergency/cell phone for Section 500.1. Provide a copy of their current QSP certification from California Stormwater Quality Association (CASQA) including the license expiration date. If a SMARTs certified QSD is being used then provide documentation from SMARTs;
 - d. Provide a Subcontractor List (with names, addresses, phone numbers, areas of responsibility, etc.);
 - e. Provide a Project Schedule.
2. Provide Storm Water Quality Construction Site Inspection Checklist to be used by CONTRACTOR during construction.

1.3 REGULATORY REQUIREMENTS

A. Laws and Regulations:

1. The CONTRACTOR is responsible for complying with the Clean Water Act Section 401, Stormwater Pollution Prevention Plan (SWPPP) for all anticipated construction activities.
2. The OWNER shall submit a Notice of Intent (NOI) to the State Water Resources Control Board to obtain coverage under the National Pollution Discharge Elimination System (NPDES) and pay all filing fees associated with the NOI.
3. The Contractor shall perform construction operations to comply, and ensure subcontractors comply, with applicable Federal, State, and local laws, orders, regulations and water quality standards concerning control and abatement of water pollution, and terms and conditions of applicable permits issued by permit issuing

authority. If conflict occurs between Federal, State, and local laws, regulations, and requirements, the most stringent shall apply.

4. The CONTRACTOR shall know and fully comply with applicable provisions of the Permits and all modifications thereto, and Federal, State, and local regulations and requirements that govern the CONTRACTOR's operations and stormwater and non-stormwater discharges from both the project site and areas of disturbance outside the project limits during construction.

B. Permit

1. As part of the water pollution control work, a Storm Water Pollution Prevention Plan (SWPPP) is required for this contract. The SWPPP and amendments shall be considered to fulfill the provisions in this section, "Water Pollution Control," of the Standard Specifications for development and submittal of a Water Pollution Control Program.
2. Approval shall not constitute a finding that the SWPPP complies with applicable requirements of the Permit, the Manuals and applicable Federal, State and local laws, regulations, permits, and requirements, nor does approval supersede the requirements and provisions of these special provisions, the Permit, or any other federal, state, or local regulations or permit in the event of a conflict.
3. The SWPPP shall identify the Qualified SWPPP Practitioner (QSP) as required by the Permit.
4. A Preliminary SWPPP will be provided to the CONTRACTOR. The CONTRACTOR will be required to revise and finalize the SWPPP as needed to comply with Construction General Permit Requirements and all other pertinent laws, rules, and regulations. Only a Qualified SWPPP Developer (QSD) is allowed to revise or amend the SWPPP. All revisions and Amendments must be accepted by Legally Responsible Person (LRP). The CONTRACTOR shall provide all Permit Registration Documents (PRDs). PRDs consist of:
 - a. Notice of Intent (NOI)
 - b. Risk assessment
 - c. Site Map
 - d. Storm Water Pollution Prevention Plan (SWPPP)
 - e. Annual Fee
 - f. Signed Certification Statement
 - g. Notice of termination (NOT)
 - h. Changes of Termination
 - i. Annual Reporting
 - j. Other Compliance Documents
5. The OWNER will submit the PRDs electronically to the State Water Resources Control Board (State) website, entitled Stormwater Multi Application Reporting and Tracking System (SMARTS). For the purposes of the Permit, the City of Roseville is the owner of the Permit and is the Legally Responsible Person (LRP). The LRP will retain authority for assigning the Approved Signatories and Data Submitters in SMARTS. The CONTRACTOR's QSP and/or QSD will be designated as Data Submitters in SMARTS, including the responsibilities thereof, as required by the Permit. LRP will submit the appropriate fee to the State and obtain a certified NOI and Waste Discharge Identification Number (WDID) for the project
6. No ground disturbing work shall occur until the PRD and SWPPP have been uploaded to the State website. The ENGINEER will notify the CONTRACTOR in writing upon completion of the document upload which will allow ground disturbing work to begin. The SWPPP shall apply to the areas within or immediately outside of the right-of-way that are directly related to all construction activities including, but not limited to, material borrow or disposal areas, staging areas, storage yards, and access roads,

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- including those on-site areas developed by the CONTRACTOR with third parties for use during the project.
7. The CONTRACTOR shall develop a Water Pollution Control Schedule that describes the timing of grading or other work activities that could affect water pollution. The Water Pollution Control Schedule shall be updated by the CONTRACTOR to reflect changes in the CONTRACTOR's operations that would affect the necessary implementation of water pollution control practices.
 8. Water pollution control practices include the "Minimum Requirements" and other CONTRACTOR-selected water pollution control practices from the "SWPPP" and the "Project-Specific Minimum Requirements" identified in the Water Pollution Control Cost Break-Down of this section. Listing of these minimum requirements shall not relieve the Contractor of meeting all permit requirements.
 9. The requirements described herein are considered minimum requirements. Additional BMPs may be required to meet the requirements set forth in the SWPPP and the Permit. All BMPs shall be designed, installed, maintained, and otherwise managed pursuant to the provisions set forth in the most stringent and most recent of the following: the City of Roseville Stormwater Quality BMP Guidance Manual for Construction, West Placer Storm Water Quality Design Manual, California Department of Transportation (Caltrans) Stormwater Quality Handbook - Construction Site BMP Manual or the California Stormwater Quality Association (CASQA) - California Stormwater BMP Handbook for Construction. The CONTRACTOR shall prepare an amendment to the SWPPP as required by the Permit, such as when there is a change in construction activities or operations which may affect the discharge of pollutants to surface waters, ground waters, storm drain systems; when the CONTRACTOR's activities or operations violate a condition of the Permit; when there is a change in the schedule that affects the discharge of pollutants; when there is a change in the schedule that affects the Risk Level required by the Permit; or when directed by the ENGINEER. Amendments shall identify additional water pollution control practices or revised operations, including those areas or operations not identified in the initially approved SWPPP. Amendments to the SWPPP shall be prepared and submitted for review and approval within the time required by the Permit and approved by the ENGINEER, but in no case longer than the time specified for the initial submittal and review of the SWPPP. Approved amendments shall be submitted electronically to the ENGINEER within 24 hours of approval. At a minimum, the SWPPP shall be amended annually as required by the Permit, and an electronic copy submitted to the ENGINEER.
 10. The CONTRACTOR shall keep one copy of the approved SWPPP and approved amendments at the project site. The SWPPP shall be made available upon request by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests by the public shall be directed to the ENGINEER.
 11. The CONTRACTOR shall notify the ENGINEER immediately upon request from the regulatory agencies to enter, inspect, sample, monitor, or otherwise access the project site or the CONTRACTOR's records pertaining to water pollution control work.
 12. Cost Break-down
 - a. The CONTRACTOR shall include a Water Pollution Control Cost Break-Down which itemizes the water pollution control work portion of the GMP. The CONTRACTOR shall use the Water Pollution Control Cost Break-Down provided in this section (See attached supplement) as the basis for the cost break-down submitted with the SWPPP information. The CONTRACTOR shall use the Water Pollution Control Cost Break-Down to identify items, quantities and non-adjustable values for water

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pollution control work, excluding water pollution control practices for which are separated in the Schedule of Values. The CONTRACTOR shall be responsible for the accuracy of the quantities and non-adjustable values used in the cost break-down submitted with the SWPPP. Partial payment for the item of water pollution control will not be made until the Water Pollution Control Cost Break-Down is approved by the ENGINEER.

- b. Line items indicated in the Water Pollution Control Cost Break-Down in this section with a specified Estimated Quantity shall be considered "Project-Specific Minimum Requirements." The CONTRACTOR shall incorporate Project-Specific Minimum Requirements with CONTRACTOR-designated quantities and values into the Water Pollution Control Cost Break-Down submitted with the SWPPP.
- c. Line items indicated in the Water Pollution Control Cost Break-Down in this section without a specified Estimated Quantity shall be considered by the CONTRACTOR for selection to meet the applicable requirements for water pollution control work required in the SWPPP. In the Water Pollution Control Cost Break-Down submitted with the SWPPP, the CONTRACTOR shall list only those water pollution control practices selected for the project, including quantities and non-adjustable values required to complete the work for those items.
- d. The sum of the amounts for the items of work listed in the Water Pollution Control Cost Break-Down shall be equal to the value for water pollution control include in the GMP. Overhead and profit shall be included in the individual items listed in the cost break-down.
- e. No adjustment in compensation will be made to the GMP for water pollution control due to differences between the quantities shown in the approved cost break-down and the quantities required to complete the work as shown on the approved SWPPP. No adjustment in compensation will be made for ordered changes to correct SWPPP work resulting from the CONTRACTOR's own operations or from the CONTRACTOR's negligence.
- f. The approved cost break-down will be used to determine partial payments during the progress of the work and as the basis for calculating the adjustment in compensation for the item of water pollution control due to increases or decreases of quantities ordered by the ENGINEER. When an ordered change increases or decreases the quantities of an approved cost break-down item, the adjustment in compensation will be determined in the same manner specified for increases and decreases in the quantity of a contract item of work in conformance with the Agreement. If an ordered change requires a new item which is not on the approved cost break-down, the adjustment in compensation will be determined in the same manner specified for Changes In the Work in the Agreement.

PART 2 - PRODUCTS

- A. Provide all materials in accordance with provisions set forth in the most stringent and most recent of the following: City of Roseville Stormwater Quality BMP Guidance Manual for Construction, West Placer Storm Water Quality Design Manual, California Department of Transportation (Caltrans) Stormwater Quality Handbook, Construction Site BMP Manual or of the California Stormwater Quality Association (CASQA), California Stormwater BMP Handbook for Construction.
- B. Only biodegradable wattles containing no plastic can remain on a site when applying for a Notice of Termination (NOT). Wattles containing plastic netting (including plastic specified as biodegradable) are not permitted on this project.

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PART 3 - EXECUTION

3.1 THIRD PARTY SWPPP OVERSIGHT AND PRACTITIONER SUBCONSULTANT

- A. CONTRACTOR shall retain a third-party firm to provide SWPPP oversight and QSP services including:
 - 1. Print out daily weather report
 - 2. Read and record rain gauge daily
 - 3. Prepare REAPs
 - 4. Perform all inspections (pre-and post-storm, quarterly, non-stormwater inspections)
 - 5. Write inspection reports to document inspections
 - 6. Prepare annual report for OWNER to certify
 - 7. Perform and document all sampling (stormwater, non-stormwater, and discharge)
 - a. Sampling must occur every business day that runoff or discharges are leaving the site
 - 8. Provide staff trainings as needed and keep records of trainings
 - 9. Organize all paperwork for project closeout
 - 10. Maintain the pH meter and turbidimeter, perform calibration of equipment and provide calibration records.
- B. All weather reports, rain gauge log, inspection reports, sampling records, REAPs, and training records shall be maintained daily in the SWPPP binder at the project site.
- C. SWPPP subconsultant shall be a QSP and responsible for development and maintenance of SWPPP throughout construction and post-construction until acceptance of NOT by Board.
- D. The SWPPP subconsultant shall be registered on SMARTS and linked to the project as Data Submitters.
- E. CONTRACTOR shall be responsible for all means and methods related to implementation of SWPPP throughout construction and post-construction until acceptance of NOT by Board.
- F. SWPPP subconsultant shall attend all weekly construction progress meetings in person.
- G. SWPPP subconsultant shall prepare and submit on a monthly basis a certification that the site is in compliance with all SWPPP requirements and all documentation related to the site has been prepared and submitted in accordance with the General Permit Requirements. Certification shall be made by signing the certification form and submitting it to the CONTRACTOR, with a copy sent to the OWNER.
- H. SWPPP subconsultant shall be responsible for the following:
 - 1. Prepare ad hoc reports and exceedance reports as needed;
 - 2. Submit such reports to SMARTS, as needed; and,
 - 3. Prepare and upload on SMARTS change of information applications, annual reports and Notice of Termination, as needed.
- I. Signed certification shall be submitted with all Monthly Pay Requests by CONTRACTOR. Failure to submit Certification signed by SWPPP subconsultant shall result in rejection of monthly pay request.

3.2 IMPLEMENTATION

- A. If there is a discrepancy between the project Permit and these special provisions, the Permit language shall supersede. If there is a discrepancy between the SWPPP and these special provisions, the special provisions shall supersede. Unless otherwise specified, upon approval of the SWPPP, the CONTRACTOR shall be responsible throughout the duration of the project for installing, constructing, inspecting, maintaining, replacing, removing, and disposing of temporary water pollution control practices, and installing, constructing, inspecting, maintaining, and replacing permanent water pollution control practices specified in the SWPPP and in the amendments. The duration of work includes that time period between initial mobilization to the site and acceptance of the work. Unless otherwise directed by the ENGINEER, the CONTRACTOR's responsibility for SWPPP implementation shall continue throughout temporary suspensions of work. Requirements for installation, construction, inspection, maintenance, replacement, removal, and disposal of water pollution control practices shall conform to the requirements in these special provisions and to project permits.
- B. Installing, inspecting and maintaining water-pollution control practices on areas outside the designated work area not specifically arranged and provided for by the City for the execution of this contract, will not be paid for.
- C. If the CONTRACTOR or the ENGINEER identifies a deficiency in the implementation of the approved SWPPP or amendments, the deficiency shall be corrected immediately unless requested by the CONTRACTOR and approved by the ENGINEER in writing but shall be corrected prior to the onset of precipitation. If the CONTRACTOR fails to correct the identified deficiency by the date agreed or prior to the onset of precipitation, the project shall be in nonconformance with this section, "Water Pollution Control."
- D. If the CONTRACTOR fails to conform to the provisions of this section, the ENGINEER may order the suspension of construction operations and/or may hire a third party to correct the deficiency. Additional project costs will be deducted from the CONTRACTOR's retention until the CONTRACTOR complies with the requirements.

3.3 YEAR-ROUND IMPLEMENTATION REQUIREMENTS

- A. The CONTRACTOR shall have a year-round program for implementing, inspecting and maintaining water pollution control practices for wind erosion control, tracking control, non-storm water management, and waste management and materials pollution control.
- B. The National Weather Service weather forecast shall be monitored and used by the CONTRACTOR on a daily basis. If 50 percent or greater precipitation is predicted, the necessary water pollution control practices shall be deployed prior to the onset of the precipitation. If there is less than a 50 percent chance of precipitation, the CONTRACTOR shall still be responsible for ensuring the project site does not result in a discharge of pollutants off-site. Regardless of the chances of precipitation, the CONTRACTOR shall allow adequate time to properly install all required BMPs prior to precipitation.
- C. Disturbed soil areas shall be considered active whenever the soil disturbing activities have occurred, continue to occur or will occur during the ensuing 14 days. Non-active areas shall be stabilized with water pollution control practice within 14 days of cessation of soil disturbing activities or prior to the onset of precipitation, whichever occurs first.

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3.4 MAINTENANCE

- A. To ensure the proper implementation and functioning of water pollution control practices, the CONTRACTOR shall regularly inspect and maintain the construction site for the water pollution control practices identified in the SWPPP. The construction site shall be inspected by the CONTRACTOR as follows:
 - 1. Prior to a forecast storm.
 - 2. After a precipitation event which causes site runoff.
 - 3. At 24 hour intervals during extended precipitation events.
 - 4. Routinely, a minimum of once every week
- B. The CONTRACTOR shall use a Storm Water Quality Construction Site Inspection Checklist approved by the ENGINEER. One copy of each site inspection record shall be submitted to the ENGINEER within 24 hours of completing the inspection.

3.5 CONTRACTOR VIOLATIONS:

- A. If noncompliance occurs, immediately (verbally) report noncompliance to the ENGINEER. Submit specific information within 2 days.
- B. Consistent violations of applicable Federal, State, or local laws, orders, regulations, or Water Quality Standards may result in the ENGINEER stopping all site activity until compliance is ensured.
- C. The CONTRACTOR shall not be entitled to extension of time, claim for damage, or additional compensation by reason of such a work stoppage.
- D. Corrective measures required bringing activities into compliance, or fines imposed by a regulating authority, shall be at the CONTRACTOR's expense.

3.6 REPORTING REQUIREMENTS

- A. Report of Discharges, Notices or Orders
 - 1. If the CONTRACTOR identifies discharges from the project site, regardless of source, in a manner causing, or potentially causing, a condition of pollution in surface waters or drainage systems, the CONTRACTOR shall immediately inform the ENGINEER. In addition, the CONTRACTOR shall submit a written Notice of Discharge report to the ENGINEER within 24 hours of the discharge event. The report shall include the following information:
 - a. The date, time, location, nature of the operation, and type of discharge, including the cause or nature of the notice or order.
 - b. The water pollution control practices deployed before the discharge event.
 - c. The date of deployment and type of water pollution control practices deployed after the discharge event, including additional measures installed or planned to remediate and clean-up the discharge, and/or reduce or prevent reoccurrence.
 - d. An implementation and maintenance schedule for affected water pollution control practices.
- B. Report of First-Time Non-Storm Water Discharge
 - 1. The CONTRACTOR shall notify the ENGINEER at least 3 days in advance of first-time non-storm water discharge events, excluding exempted discharges. The CONTRACTOR shall notify the ENGINEER of the operations causing non-storm water discharges and shall obtain field approval for first-time non-storm water discharges.

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Non-storm water discharges shall be monitored at first-time occurrences and routinely thereafter.

2. If the CONTRACTOR receives a written Notice, Order, or other non-compliance action letter from a regulatory agency as a result of storm water or other discharges from the project site, the CONTRACTOR shall immediately notify the ENGINEER. The CONTRACTOR shall be solely responsible for responding to and complying with the Notice, Order, or action letter, unless otherwise directed by the ENGINEER.
3. Unless otherwise directed in this Section, and in addition to the requirements of the Permit, the CONTRACTOR shall submit for approval, all required inspection reports, monitoring reports, action plans, notices, amendments, and other documentation required to satisfy requirements of the Permit, to the ENGINEER within 3 days of their completion. The ENGINEER will have 3 days to approve the documents as complete and sufficient to satisfy the Permit or other agency requirements. If the documents are not complete and sufficient, the ENGINEER will return them to the CONTRACTOR for resubmittal. The CONTRACTOR shall be responsible for submitting complete, accurate, and detailed reporting documents sufficient to satisfy all conditions of the Permit and regulatory agency requirements.

C. Annual Report

1. The CONTRACTOR shall maintain all records for use in the annual report.
2. The CONTRACTOR should prepare the annual report using the SMARTS system by no later July 30. The OWNER will certify and submit the report.

3.7 CONSTRUCTION SITE MANAGEMENT

A. CONTRACTOR Construction Operations:

1. Perform construction activities by methods that will prevent entrance, or accidental spillage, of solid matter, contaminants, debris, or other pollutants or wastes into streams, flowing or dry watercourses, wetlands, or underground water sources.
2. Pollutants and wastes include, but are not restricted to: refuse, garbage, cement, sanitary waste, industrial waste, hazardous materials, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.
3. Discharge of cement fines, drilling fluids, contaminated water, and other construction byproducts will not be allowed on site.
4. Discharge from dewatering and unwatering operations shall be contained in an onsite tank or containment/infiltration basin. Discharge to infiltration basins shall be limited to water and groundwater only.

B. Stockpiled or Deposited Materials:

1. Do not stockpile or deposit excavated materials or other construction materials, near or on, stream banks or other watercourse perimeters where they can be washed away by high water or storm runoff, or can in any way encroach upon the watercourse.

C. Oil Storage Tanks Management:

1. Place oil or other petroleum product (hereinafter referred to collectively as oil) storage tanks at least 150 feet from the edge of any water body.
2. Do not use underground storage tanks.
3. Construct storage area dikes at least 12 inches high or graded and sloped to permit safe containment of leaks and spills equal to the capacity located in each area plus a sufficient amount of freeboard to contain the 25-year rainstorm.
4. Line diked areas with an impermeable barrier at least 50 mils thick.

D. Refueling Operations:

1. Provide areas used for refueling operations with an impermeable liner at least 10 mils thick buried under 2 to 4 inches of soil.

3.8 PAYMENT

A. General

1. No additional payment will be made to correct deficiencies in the SWPPP or Amendments.
2. The contract GMP shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing, constructing, removing, and disposing of water pollution control practices, including non-storm water management, and waste management and materials for water pollution control practices as provided for in the approved SWPPP, except those for which there is a contract item of work as specified in the Standard Specifications and these special provisions, and as directed by the ENGINEER.
3. Full compensation for Permit reporting and compliance, including all monitoring, preparation of inspection reports, and stormwater sampling and analysis, and maintenance costs of Water Pollution Control Practices, Amendments, and Implementation of Amendments as specified in this section, "Water Pollution Control," shall be considered as included in the contract lump sum price paid for water pollution control and no additional compensation will be allowed therefore.
4. No additional payment will be made for Water Pollution Control Practices necessary to correct deficiencies in the approved SWPPP or Amendments.
5. Water pollution control practices, for which there is a contract item of work, will be measured and paid for as that contract item of work.

B. Retention of Funds:

1. Notwithstanding any other remedies authorized by law, the CITY may retain money due the CONTRACTOR under the contract, in an amount determined by the CITY, up to and including the entire amount of Penalties proposed, assessed, or levied as a result of the CONTRACTOR's violation of the Permit, or Federal or State law, regulations or requirements. Funds may be retained by the CITY until final disposition has been made as to the Penalties. The CONTRACTOR shall remain liable for the full amount of Penalties until such time as they are finally resolved with the entity seeking the Penalties.
2. Retention of funds for failure to conform to the provisions in this section, "Water Pollution Control," shall be in addition to the other retention amounts required by the contract. The amounts retained for the CONTRACTOR's failure to conform to provisions in this section will be released for payment on the next monthly estimate for partial payment following the date when an approved SWPPP has been implemented and maintained, and when water pollution has been adequately controlled, as determined by the ENGINEER.
3. When a regulatory agency identifies a failure to comply with the Permit and modifications thereto, or other Federal, State or local requirements, the CITY will retain money due the CONTRACTOR, in the amount of 10 percent of the work done to date or any fine whichever is greater, this amount is in addition to the retention specified in Section 9-3.2, Partial and Final Payment, subject to the following. The CITY will give the CONTRACTOR written notice of the CITY's intent to retain funds from partial payments which may become due to the CONTRACTOR prior to recording of the Notice of Completion.

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4. During the first estimate period that the CONTRACTOR fails to conform to the provisions in this section, "Water Pollution Control," the CITY may retain an amount equal to 25 percent of the estimated value of the contract work performed.
5. The CONTRACTOR shall notify the ENGINEER immediately upon request from the regulatory agencies to enter, inspect, sample, monitor, or otherwise access the project site or the CONTRACTOR's records pertaining to water pollution control work. The CONTRACTOR shall provide copies of correspondence, notices of violation, enforcement actions or proposed fines by regulatory agencies to the requesting regulatory agency.

3.9 REMOVAL

- A. Remove temporary works in accordance with Section 01810, Cleaning.

3.10 SUPPLEMENTS

- A. Water Pollution Control Cost Break-Down
- B. Certification Form

+ + END OF SECTION + +

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Section 01140 Water Pollution Control Cost Break-down				
Item Description	Unit	Estimated Quantity	Value	Amount
Erosion Control (Temporary)	ACRE			
Erosion Control (Permanent)	ACRE			
Straw Mulch	ACRE			
Geotextiles, Plastic Covers & Erosion Control Blankets/Mats	SQYD			
Wood Mulching	SQYD			
Earth Dikes/Drainage Swales & Lined Ditches	LF			
Outlet Protection/Velocity Dissipation Devices	EA			
Slope Drains	EA			
Silt Fence	LF			
Desilting Basin	EA			
Sediment Trap	EA			
Gravel Check Dam	TON			
Fiber Rolls	LF			
Gravel Bag Berm	LF			
Street Sweeping and Vacuuming	LS			
Sandbag Barrier	LF			
Straw Bale Barrier	LF			
Storm Drain Inlet Protection	EA			
Wind Erosion Control	LS			
Stabilized Construction Entrance/Exit	EA			
Stabilized Construction Roadway	EA			
Entrance/Outlet Tire Wash	EA			
Water Conservation Practices	LS			
Dewatering Operations	EA			
Paving and Grinding Operations	LS			
Temporary Stream Crossing	EA			
Clear Water Diversion	EA			
Illicit Connection/Illegal Discharge Detection and Reporting	LS			
Potable Water/Irrigation	LS			
Vehicle and Equipment Cleaning	LS			
Vehicle and Equipment Fueling	LS			
Vehicle and Equipment Maintenance	LS			
Material Delivery and Storage	LS			
Material Use	LS			
Stockpile Management	LS			
Spill Prevention and Control	LS			
Solid Waste Management	LS			
Hazardous Waste Management	LS			
Contaminated Soil Management	LS			

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Item Description	Unit	Estimated Quantity	Value	Amount
Concrete Waste Management	LS			
Sanitary/Septic Waste Management	LS			
Liquid Waste Management	LS			
TOTAL:				

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SWPPP COMPLIANCE FORM

As the QSP for the Project, I hereby certify the project site is in full compliance with applicable local, State and Federal regulations and requirements for water pollution prevention and control.

Printed Name

Signature

Date

QSP Number

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City of Roseville
West Side Tank and Pump Station Project (Phase 2)
17-083

November 2019
Final Design Submittal

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SECTION 01145

ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Requirements for Environmental Protection. During the progress of the work, keep Contractor occupied work areas in a neat and clean condition and protect the environment both onsite and offsite, throughout and upon completion of the construction project.

1.2 SUBMITTALS

- A. Develop a detailed Environmental Protection Plan and submit to the Engineer for review and approval prior to the beginning of construction. Distribute the favorably reviewed plan to all employees and to all subcontractors and their employees. The Environmental Protection Plan shall include, but not be limited to, the following items:
 - 1. Copies of required permits.
 - 2. Proposed disposal sites.
 - 3. Copies of any agreements with public or private landowners regarding equipment, materials storage, borrow sites, fill sites, or disposal sites. Any such agreement made by the Contractor shall be invalid if its execution causes violation of local or regional grading or land use regulations.

1.3 MITIGATION OF CONSTRUCTION IMPACTS

- A. All operations shall comply with federal, state and local regulations pertaining to water, air, solid waste and noise pollution.
- B. Definitions of Contaminants:
 - 1. Sediment: Soil and other debris that have been eroded and transported by runoff water.
 - 2. Solid Waste: Rubbish, debris, garbage and other discarded solid materials resulting from construction activities, including a variety of combustible and non-combustible wastes, such as ashes, waste materials that result from construction or maintenance and repair work, leaves and tree trimmings.
 - 3. Chemical Waste: Includes petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, disinfectants, organic chemicals and inorganic wastes. Some of the above may be classified as "hazardous."
 - 4. Sanitary Wastes:
 - a. Sewage: That which is considered as domestic sanitary sewage.
 - b. Garbage: Refuse and scraps resulting from preparation, cooking, dispensing and consumption of food.
 - 5. Hazardous Materials: As defined by applicable laws and regulations. Undisclosed hazardous material contamination, if encountered will constitute a changed site condition. In the event that occurs, Contractor shall coordinate with Owner consistent with final EIR Mitigation Measure 4.9-1 as described in Section 1.3.D of this Specification.
- C. Protection of Natural Resources:

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1. General: It is intended that the natural resources within the project boundaries and outside the limits of grading performed under this Contract be preserved in their existing condition or be restored to an equivalent or improved condition upon completion of the work. Confine construction activities to areas defined by the public roads, easements, and work area limits shown on the Drawings. Return construction areas to their preconstruction elevations except where surface elevations are otherwise noted to be changed. Maintain natural drainage patterns except where surface drainage is otherwise noted to be changed. Conduct construction activities to avoid ponding stagnant water conducive to mosquito breeding.
2. Land Resources:
 - a. Do not remove, cut, deface, injure or destroy trees or shrubs outside the work area limits. Do not remove, deface, injure or destroy trees within the work area without permission from the Engineer.
 - b. Temporary Construction:
 - 1) Obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction as directed by the Engineer.
 - 2) Level all temporary roads, parking areas and any other areas that have become compacted or shaped.
 - 3) Any unpaved areas where vehicles are operated shall receive a suitable surface treatment or shall be periodically wetted down to prevent construction operations from producing dust damage and nuisance to persons and property, at no additional cost to the Owner.
 - 4) Keep haul roads clear of any object which creates an unsafe condition.
 - 5) Promptly remove any contaminants or construction material dropped from construction vehicles.
 - 6) Do not drop mud and debris from construction equipment on public streets.
 - 7) Sweep clean turning areas and pavement entrances as necessary.
 - 8) Ensure no tracking occurs on City streets.
3. Water Resources:
 - a. Investigate and comply with all applicable federal, state and local regulations concerning the discharge (directly or indirectly) of pollutants to the City storm drain system and waters of the United States. Perform all work under this Contract in such a manner that any adverse environmental impacts are reduced to a level that is acceptable to the Engineer and regulatory agencies.
 - b. Oily Substances:
 - 1) Special measures shall be taken to prevent oily or other hazardous substances from entering the ground, drainage areas or local bodies of water in such quantities as to affect normal use, aesthetics or produce a measurable impact upon the area.
 - 2) Any soil or water which is contaminated with oily substances due to the Contractor's operations shall be disposed of in accordance with applicable regulations consistent with final EIR Mitigation Measure 4.9-1 as described in Section 1.3.D of this Specification.
 - c. Chlorinated Water:
 - 1) Take special measures to prevent chlorinated water from entering the ground or surface waters.
 - 2) De-chlorinate chlorinated water prior to discharge.
4. Cultural Resources:
 - a. The project does not pass through any known archaeological sites. However, it is conceivable that unrecorded archaeological sites could be discovered during the construction.

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- b. In the event that artifacts, human remains, or other cultural resources are discovered during excavations at locations of the Work, the Contractor shall protect the discovered items, notify the Engineer, and comply with applicable law consistent with final EIR Mitigation Measure 4.8-1 as described in Section 1.3.D of this Specification.
- 5. Dust Control, Air Pollution and Odor Control:
 - a. Employ measures to prevent the creation of dust, air pollution and odors consistent with final EIR Mitigation Measure 4.4-1 and 4.4-3 as described in Section 1.3.D of this Specification.
 - b. Comply with Placer County Air Pollution Control District's (PCAPCD) rules and regulations.
 - c. Unpaved areas where vehicles are operated shall be periodically wetted down or given an equivalent form of treatment, to eliminate dust formation.
 - d. Store all volatile liquids, including fuels or solvents in closed containers and provide secondary containment as needed.
 - e. No open burning of debris, lumber or other scrap will be permitted.
 - f. Properly maintain equipment to reduce gaseous pollutant emissions.
- 6. Construction Storage Areas:
 - a. It is the responsibility of the Contractor to secure a storage area for Contractor use. Storage of construction equipment and materials shall be limited to the designated Contractor's storage area.
 - b. Oil wastes (from equipment, etc.) shall not be allowed to flow onto the ground or into surface waters.
 - c. Containers shall be required at the construction site for the disposal of materials such as paint, paint thinner, solvents, motor oil, fuels, concrete wash water, resins and other environmentally deleterious substances.
 - d. No dumping of surplus concrete or grout on the site will be permitted.
- 7. Sanitation:
 - a. During the construction period, provide adequate and conveniently located chemical sanitation facilities, properly screened, for use of construction crews.
 - b. Facilities shall be placed behind sidewalks and at least fifty (50) feet from any drainage ditch, drain inlet, or water way.
 - c. Facilities shall be regularly maintained.
- 8. Fire Prevention:
 - a. Take steps to prevent fires including, but not limited to:
 - 1) Provide spark arrestors on all internal combustion engines.
 - 2) Store and handle flammable liquids in accordance with the Flammable and Combustible Liquids Code, NFPA 30.
 - 3) Provide fire extinguishers at hazardous locations or operations, such as welding.
- 9. Erosion and Sediment Transport Control:
 - a. Keep disturbed areas to the minimum necessary for construction.
 - b. Keep runoff away from disturbed areas during construction.
 - c. rap sediment before it leaves the site, using such techniques as check dams, sediment ponds, or siltation fences.
 - d. Confine earthwork operations to dry periods, whenever possible. If earthwork needs to be scheduled for a wet period, ensure that erosion and sediment transport control measures are ready for implementation prior to the onset of the storm.
 - e. Stabilize disturbed areas as quickly as possible.
 - f. Note that waterways under the jurisdiction of governmental agencies other than the City of Roseville may be subject to additional erosion and sediment control

measures or criteria and it is the responsibility of the Contractor to obtain and adhere to these additional requirements.

D. Environment Impact Report (EIR) Mitigation Measures

1. The following West Roseville Specific Plan (WRSP) EIR Mitigation Measures shall be implemented:
 - a. 4.4-1 Dust Control
 - 1) After review and approval by the PCAPCD, the developer, if required, shall apply approved chemical soil stabilizers according to manufacturer's specifications, to all inactive construction areas (previously graded areas which remain inactive for 96 hours).
 - 2) Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less.
 - 3) Create a dust control plan.
 - 4) No open burning of vegetation during project construction.
 - 5) Reestablish ground cover as soon as possible after construction.
 - 6) Suspend grading activities when winds exceed 25 mph.
 - b. 4.4-3 Reduction of Construction Emissions
 - 1) The prime contractor shall submit to the PCAPCD a comprehensive inventory (i.e., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 or more hours for the construction project. District personnel, with assistance from the California Air Resources Board, will conduct initial Visible Emission Evaluations of all heavy-duty equipment on the inventory list.
 - 2) An enforcement plan shall be established by the contractor in conjunction with the air district to weekly evaluate project-related on-and-off- road heavy-duty vehicle engine emission opacities, using standards as defined in California Code of Regulations, Title 13, Sections 2180-2194. An Environmental Coordinator, CARB-certified to perform Visible Emissions Evaluations (VEE), shall routinely evaluate project related off-road and heavy-duty on-road equipment emissions for compliance with this requirement. Operators of vehicles and equipment found to exceed opacity limits will be notified and the equipment must be repaired within 72 hours.
 - 3) Contractors shall provide a plan for approval by the PCAPCD demonstrating that the heavy-duty (>50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project-wide fleet average 30 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
 - 4) Minimize idling time to 10 minutes.
 - 5) Use low sulfur fuel for stationary construction equipment, if feasible.
 - 6) Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
 - 7) Use low emission on-site stationary equipment.
 - c. 4.7-6 Avoid Nesting Sites
 - 1) To ensure that fully protected bird and raptor species are not injured or disturbed by construction in the vicinity of nesting habitat, implement the following measures:
 - a) When feasible, all tree removal shall occur between August 30 and February 15 to avoid the breeding season of any raptor species that could be using the area, and to discourage hawks from nesting in the vicinity of

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- an upcoming construction area. This period may be modified with the authorization of the California Department of Fish and Wildlife (CDFW); or
- b) Prior to the beginning of mass grading, including grading for major infrastructure improvements, during the period between February 15 and August 30, all trees and potential burrowing owl habitat within 350 feet of any grading or earthmoving activity shall be surveyed by the City for active raptor nests or burrows by a qualified biologist no more than 30 days prior to disturbance. Biologist will be hired by the City. If active raptor nests or burrows are found, and the site is within 350 feet of potential construction activity, a fence shall be erected around the tree or burrow(s) at a distance of up to 350 feet, depending on the species, from the edge of the canopy to prevent construction disturbance and intrusions on the nest area. The appropriate buffer shall be determined by the City in consultation with CDFW.
 - c) No construction vehicles shall be permitted within restricted areas (i.e., raptor protection zones), unless directly related to the management or protection of the legally protected species.
 - d) In the event that a nest is abandoned, despite efforts to minimize disturbance, and if the nestlings are still alive, the City shall contact CDFW and, subject to CDFW approval, fund the recovery and hacking (controlled release of captive reared young) of the nestling(s).
 - e) If a legally protected species nest is located in a tree designated for removal, the removal shall be deferred until after August 30th, or until the adults and young of the year are no longer dependent on the nest site as determined by a qualified biologist.
 - f) The City will conduct a pre-construction survey within the phases of the project site that are scheduled for construction activities. The survey shall be conducted by a qualified biologist to determine if burrowing owls are occupying the project site. The survey shall be conducted no more than three weeks prior to grading of the project site. If the above survey does not identify burrowing owls on the project site, then no further mitigation would be required. However, should burrowing owls be found on the project site, the following measures shall be required:
 - g) Avoid all potential burrowing owl burrows that may be disturbed by project construction during the breeding season between February 15 and August 30 (the period when nest burrows are typically occupied by adults with eggs or young). Avoidance shall include the establishment of a 350-foot diameter non-disturbance buffer zone around any occupied burrows. The buffer zone shall be delineated by highly visible temporary construction fencing. Disturbance of any occupied burrows shall only occur outside of the breeding season (August 30 through February 15). Based on approval by the CDFW, preconstruction and nonbreeding season exclusion measures may be implemented to preclude burrowing owl occupation of the project site prior to project related disturbance (such as grading). Burrowing owls may be passively excluded from burrows in the construction area by placing one-way doors in the burrows according to current CDFW protocol. The one-way doors must be in place for a minimum of three days. All burrows that may be occupied by burrowing owls, regardless of whether they exhibit signs of occupation, must be cleared. Burrows that have been cleared through the use of the one-way doors shall then be closed or backfilled to prevent owls from entering the burrow. The one-way doors shall not be used more than two weeks before

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construction to ensure that owls do not recolonize the area of construction.

- d. 4.8-1 Cease Work and Consult with Qualified Archaeologist
 - 1) Should any cultural resources, such as structural features, any amount of bone or shell, artifacts, human remains, or architectural remains be encountered during any subsurface development activities, work shall be suspended within 100 feet of the find, and the City of Roseville shall be immediately notified. At that time, the City shall coordinate any necessary investigation of the site with qualified archaeologists as needed to assess the resource and provide proper management recommendations.
- e. 4.8-9 Provide Proper Management Recommendations
 - 1) Possible management recommendations for important resources could include resource avoidance or data recovery excavations. The Contractor shall implement any measures deemed necessary for the protection of the cultural resources.
 - 2) In addition, pursuant to section 5097.98 of the State Public Resources Code, and section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, the County Coroner shall be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.
- f. 4.8.10 Cease Work Until Review Conducted by Qualified Paleontologist and Recommendations Implemented.
 - 1) Should any evidence of paleontological resources (e.g., fossils) be encountered during grading or excavation, work shall be suspended within 100 feet of the find, and the City of Roseville shall be immediately notified. At that time, the City shall coordinate any necessary investigation of the site with a qualified paleontologist to assess the resource and provide proper management recommendations.
 - 2) Possible management recommendations for important resources could include resource avoidance or data recovery excavations. The contractor shall implement any measures deemed necessary by the paleontologist for the protection of the paleontological resources.
- g. 4.9-1 Identify and Remediate Soil Contamination
 - 1) If evidence of soil contamination is encountered in previously unidentified locations in the WRSP Area, work shall cease until the area can be tested, and, if necessary, remediated.
 - 2) Remediation activities could include removal of contaminated soil and/or on-site treatment.
 - 3) As part of this process, the City shall ensure that any necessary investigation and/or remediation activities conducted in the WRSP Area are coordinated with the Roseville Fire Department, Placer County Division of Environmental Health, and, if needed, other appropriate state and/or local agencies.
 - 4) Once a site is remediated, construction may continue. The City shall also continue to update its records concerning contamination or hazards that could be present at facilities or sites adjacent to WRSP Area and take necessary action to ensure that the health and safety of the public is protected.

1.4 RESPONSIBLE PARTY

- A. The Contractor shall comply with all environmental pollution control rules, regulations, ordinances and statutes which apply to any work performed pursuant to the Contract (Refer to General Conditions Section 5 and Section D. Environmental Impact Report

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Mitigation Measures for additional requirements). In the event of any violations, Contractor shall be fully responsible for all fines, citations, penalties and all other judgements that shall be imposed.

PART 2 - PRODUCTS

2.1 INLET FILTERS

- A. Drain inlet filters may be employed.
- B. Horizontal mesh filters attached to the top of or below the drain inlet grate shall not be allowed.
- C. Only high flow volume, bag type filters or others as approved by the City of Roseville, Construction Inspector shall be used.

2.2 EROSION CONTROL BLANKETS

- A. Straw or curled wood fiber blanket between jute netting
- B. Biodegradable, containing no plastic
- C. Contains no weed seeds

2.3 STRAW WATTLES

- A. 100% biodegradable, containing no plastic
- B. Wrapped in medium weight natural burlap

2.4 HYDROMULCH

- A. Mixture of shredded wood fiber, water and tackifier.
 - 1. Wood fiber
 - a. Thermally processed and free of weed or plant seeds.
 - b. Colored with green dye tracer so applied mulch is easily visible
 - c. Produce a uniform slurry when mixed with water and not be toxic to plants or wildlife.
 - d. Apply at 2000 pounds per acre.
 - 2. Tackifier
 - a. Water soluble and, upon drying, will form a stable, nonflammable plastic film with a one-year effective life.
 - b. Non-toxic to plants and wildlife.
 - c. Apply at 150 pounds per acre.

PART 3 - EXECUTION

3.1 DISPOSAL OPERATIONS

- A. Solid Waste Management:
 - 1. Supply solid waste transfer containers. Daily remove all debris such as spent air filters, oil cartridges, cans, bottles, combustibles and litter. Take care to prevent trash and papers from blowing onto adjacent property. Encourage personnel to use refuse containers. Convey contents to a sanitary landfill.

2. Washing of concrete containers without Contractor having a washout facility or system in place will not be permitted. Concrete on bare soil is prohibited. Remove any excess concrete to the sanitary landfill.
- B. Chemical Waste and Hazardous Materials Management:
1. Furnish containers for storage of spent chemicals used during construction operations. Provide secondary containment. Dispose of chemicals and hazardous materials in accordance with applicable regulations.
- C. Garbage:
1. Store garbage in covered containers, pick up daily and dispose of in a sanitary landfill.
- D. Dispose of vegetation, weeds, rubble, and other materials removed by the clearing, stripping and grubbing operations off site at a suitable disposal site in accordance with applicable regulations.
- E. Excavated Materials:
1. Native soil complying with the requirements of Section 02300, Earthwork, may be used for backfill, fill and embankments as allowed by that section.
 2. Spoil Material:
 - a. Remove all material which are excavated in excess of that required for backfill, and such excavated material which is unsuitable for backfill, from the site and dispose of offsite in accordance with applicable regulations.
 - b. No additional compensation will be paid to the Contractor for such disposal. Include all such costs in the lump sum prices bid for the project.
 - c. Remove rubbish and materials unsuitable for backfill immediately following excavation. Remove material in excess of that required for backfill immediately following backfill operations.
 - d. Rubbish shall consist of all materials not classified as suitable materials or rubble and shall include shrubbery, trees, timber, trash and garbage.

PART 4 - PRODUCTS (NOT USED)

PART 5 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01310

PROJECT MEETINGS

PART 1 - GENERAL

1.1 PRE-CONSTRUCTION CONFERENCE

- A. Upon receipt of the Notice to Proceed, or at an earlier time if mutually agreeable, the ENGINEER will arrange a preconstruction conference to be attended by the CONTRACTOR's superintendent or other project representative authorized to commit on the behalf of the CONTRACTOR and to direct the performance of the work by others, the OWNER, the ENGINEER or ENGINEER's representative, and representatives of utilities, major subcontractors, and others involved in the execution of the work.
- B. The purpose of this conference will be to establish a working relationship and understanding between the parties and to discuss subjects as may be pertinent for the execution of the work.
- C. CONTRACTOR shall be prepared to discuss the following subjects, as a minimum:
 - 1. Required schedules.
 - 2. Status of Bonds and insurance.
 - 3. Sequencing of critical path work items.
 - 4. Progress payment procedures.
 - 5. Project changes and clarification procedures.
 - 6. Use of site, access, office and storage areas, security and temporary facilities.
 - 7. Major product delivery and priorities.
 - 8. CONTRACTOR's safety plan and representative.

1.2 PROGRESS MEETINGS

- A. The ENGINEER will arrange and conduct progress meetings. The ENGINEER will prepare and circulate a draft agenda of each meeting. The CONTRACTOR may add items as appropriate to the draft agenda.
- B. Progress meetings will be conducted on a regular basis, at such frequency as the OWNER and CONTRACTOR may mutually agree. Progress meetings shall be attended by the ENGINEER, OWNER Operations personnel, CONTRACTOR's superintendent or other project representative, and representatives of all subcontractors involved in the work at the time of the meeting, required by the CONTRACTOR, or requested by the OWNER.
- C. The purpose of the meetings will be to facilitate the work of the CONTRACTOR and any subcontractor or other organization that is not up to schedule, resolve conflicts, identify and resolve any potential delays or necessary changes in the work and in general, coordinate and facilitate the execution of the work.
- D. The agenda of progress meetings shall include review of work progress, the latest Construction Schedule submittal (monthly), potential project delays, the status of key shop drawings, submittal reviews, information requests, safety concerns, record drawings, and extra work items.

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1.3 CONSTRUCTION SCHEDULE REVIEW

- A. The Construction Schedule will be reviewed monthly during an agreed upon progress meeting to verify at a minimum:
 - 1. Actual start and finish dates of completed activities since the last progress meeting.
 - 2. Durations and progress of all activities not completed.
 - 3. Critical submittals/materials delivery problems.
 - 4. Potential project delays.
 - 5. Any activity behind schedule and CONTRACTOR's plan to bring it back on schedule.
 - 6. Reason, logic, time, and cost data for Change Order work that is to be incorporated into the Construction Schedule or payment request form.
 - 7. Payment due to the CONTRACTOR based on percentage complete of items in the submittal payment request form.
- B. At the progress meeting, the CONTRACTOR shall provide an update of the Construction Schedule as described in Section 01320, Progress Schedule.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

++ END OF SECTION ++

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SECTION 01320

PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. The work specified in this Section includes the preparation and submittal of a computerized Critical Path Method (CPM) Construction Schedule and of updates and revisions to the Construction Schedule.
- B. The computerized CPM schedule shall be completed using Microsoft Project for Windows or Primavera Project Planner scheduling system and software.
- C. The requirements specified under Section 01330, Submittal Procedures, also apply to the Construction Schedule initial submittal(s) and subsequent updates and revisions.

1.2 REFERENCE

- A. General:
 - 1. Applicable Reference shall be the Associated General Contractors of America (AGC) Publication No. 1107.1, "Construction Planning and Scheduling", latest edition.
 - 2. The preparation of the Construction Schedule, its principles, definitions and terms shall be as set forth in that reference.
 - 3. In case of conflict, the provisions specified in this Section shall govern and supersede conflicting provisions in such reference.

1.3 PREPARATION AND SUBMITTAL PROCEDURE

- A. Responsible Person:
 - 1. Within five days after Notice to Proceed, the CONTRACTOR shall designate, in writing, the person responsible for the preparation of the Construction Schedule.
 - 2. Such person shall have the authority to act on behalf of the CONTRACTOR and be knowledgeable in the preparation of CPM schedules of similar complexity.
 - 3. This person shall meet with the Engineer, within 10 days of the Notice to Proceed for a joint review and approval of the CONTRACTOR's approach.
- B. Initial Schedule Submittal:
 - 1. The Construction Schedule shall be completed and submitted to the Engineer within 30 days after Notice to Proceed.
 - 2. If the initial Construction Schedule submittal is not acceptable to the Engineer, it shall be revised in coordination with observations and comments from the Engineer and resubmitted within 7 days of the return of the schedule to the CONTRACTOR.
- C. By preparing and submitting the Construction Schedule the CONTRACTOR represents that the CONTRACTOR can and intends to execute the work and portions thereof within the specified times and constraints and that the CONTRACTOR's bid covers the costs associated with the execution of work in accordance with the Construction Schedule.
- D. Submittal package.
 - 1. Submittal of the Baseline Construction Schedule shall include the following:

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- a. Network Diagram:
 - 1) A graphic network diagram with legible letters with individual sheets sized approximately 24" by 48".
 - 2) Each activity shall be shown on the diagram with the activity number, description and duration in working days.
 - 3) Five copies and one reproducible shall accompany the submittal.
- b. Five sets of supporting data, if not indicated on the graphic network diagram, including:
 - 1) Number of work days per week.
 - 2) Holidays that will be observed during construction.
 - 3) Number of shifts per day.
 - 4) Major construction equipment used, identifying the time period and activity of use.
 - 5) Average manpower for each week and for each trade.
 - 6) Lost time allowance for weather or other conditions that can be anticipated or projected based on the requirements herein.
 - a) Contractor schedule shall include a minimum of 20 working days total, of lost time allowance.
- c. Five computer printouts as follows:
 - 1) Listing of all activities sorted by total float including early start (ES), late start (LS), early finish (EF), late finish (LF) and Total Float duration for each activity or work item. Each activity or work item will not take more than two lines.
 - 2) Lists of all activities sorted numerically including ES, LS, EF, LF, Total Float.
 - 3) List of all activities sorted numerically with Predecessor/Successor information of precedence network.
2. Submittals of updated Construction Schedules shall include, in addition to the items specified in the preceding subparagraph 1a, 1c, and 1d, the following:
 - a. Changes in the schedule due to approved Change Order or Change Directives or Force Account work.
 - b. CONTRACTOR elected changes in schedule logic, activity duration, or activity start or stop dates.
 - c. A narrative report as needed to define:
 - 1) Changes in logic, activity duration, and manpower and equipment utilization.
 - 2) Problem areas, anticipated delays, and the impact on the schedule.
 - 3) Corrective action recommended and its effect.
 - 4) The effect of changes on schedules of other contractors involved with the work.
 - 5) Coordination of work with others.
 - d. Percentage completion for each activity as agreed to for the monthly progress payments.
- E. If the Construction Schedule, its updates or its revisions, reflect anything not accepted by the Engineer, such Construction Schedule, update, or revision shall be considered as not having been accepted by the Engineer.

1.4 CONSTRUCTION SCHEDULE CONTENT

- A. The Construction Schedule shall be calendar-based, time-scaled, manpower and cost-loaded, using a precedence method diagram in the Critical Path Method (CPM) format indicating the critical path for the execution of the work utilizing the entire contract time.

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1. In the preparation of the Construction Schedule, the CONTRACTOR shall take into account all constraints and requirements specified.
2. Allowance in the Construction Schedule shall be made for Excusable Delays, as defined in the Agreement. These days shall be included as part of the 20 days of lost time allowance specified herein.
3. The diagram shall be clear, legible, and accurate, and show complete sequence of construction by activity and interdependence of activities. Separate discrete lines shall connect linked activities.
4. Activities related to the same physical areas of the work shall be grouped in the same area of the diagram.
5. Activities within each area of the work shall be numbered in separate sequential series, with no overlap of activity numbers between different areas of the work.
6. The diagram shall clearly show a continuous critical path, all constraints, and all required project milestones.
7. The schedule shall describe work activities in appropriate segments so that work in specific areas can be assessed for progress and completion. Activities labeled "start", "continue", or "completion" without measurable increments of work will not be acceptable.
8. The individual work activities in the schedule shall:
 - a. Identify major submittals and submittals for long-lead time Critical Path items and associated review times. Twenty (20) working days shall be used for OWNER review times, unless otherwise specified.
 - b. For equipment with a cost in excess of \$20,000 and all control systems the CONTRACTOR shall allow adequate time for an initial submittal and OWNER review plus (at a minimum) a second (re) submittal and associated OWNER review.
 - c. Identify at a minimum, the execution of the following as separate items for each area of work.
 - 1) Notice to Proceed.
 - 2) Mobilization.
 - 3) Dewatering.
 - 4) Shoring.
 - 5) Excavation.
 - 6) MSE.
 - 7) Backfill.
 - 8) Grading, subbase, base, paving, and curb and gutters.
 - 9) Other site work.
 - 10) Concrete, including installation of forms and reinforcement, placement of concrete, curing, stripping, patching and finishing.
 - 11) Masonry.
 - 12) Metal fastenings, framing structures, and fabrications.
 - 13) Wood structures, finish carpentry, architectural woodwork, and plastic fabrications.
 - 14) Waterproofing and dampproofing, insulation, roofing and flashing, and sealants.
 - 15) Doors and windows (including glass walls), including hardware and glazing.
 - 16) Finishes including coating and painting, flooring, ceiling, and wall covering.
 - 17) Building specialties including furnishings, equipment, and toilet and bath accessories.
 - 18) Process equipment, including separate activities for manufacturing, delivery, and installation.
 - 19) Pumps and drives, including separate activities for manufacturing, delivery, and installation.

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- 20) Conveying equipment including hoists and cranes, conveyor systems, and materials handling equipment, including separate activities for manufacturing, delivery and installation.
- 21) Other mechanical equipment including fans and heating, ventilating, and air conditioning equipment, with separate activities for manufacturing, delivery and installation.
- 22) Case work, including separate activities for fabrication, delivery and installation.
- 23) Storage shelving, including separate activities for fabrication, delivery and installation.
- 24) Trenching and pipe laying.
- 25) Piping, including a separate activity for ordering lead time.
- 26) Valves and gates, including a separate activity for ordering lead time.
- 27) Plumbing specialties.
- 28) Electrical transmission, service, and distribution equipment, including separate activities for ordering, manufacturing, delivery, installation.
- 29) Other electrical work including lighting, heating and cooling, and special systems, including separate activities for ordering, manufacturing, delivery and installation.
- 30) Instrumentation and controls, including separate activities for ordering lead time, manufacturing, delivery and installation.
- 31) Separate activities for functional, performance, and operational testing, for each major system.
- 32) Separate activities for operation and maintenance training for each major system.
- 33) Site cleanup.
- 34) Demobilization.
- 35) Procurement of critical (long lead time) equipment.
- 36) Separate activities for design, ordering, delivery and installation of turn key systems.
- 37) Separate activities for Operational Completion, Contract Completion and other contractually required milestones.
- 38) Any items to be OWNER-furnished which are to be incorporated into the work as part of these Contract Documents.
- d. Provide a monthly activity for preparation of Contract Record Drawings, in accordance with Section 01330, Submittal Procedures with a minimum monthly cost of \$5,000.
- e. Have a duration of not more than 5 working days.
- 9. Information on each activity shall include:
 - a. Concise description of the activity.
 - b. Duration in working days.
 - c. The dates for the beginning and completion of each activity.
 - d. Total float.
 - e. Numerical designation of work items.
 - f. Cost with a breakdown by labor (by man-hours by trade), materials (by type and quantity), equipment (by type and hours) and overhead and profit.
 - g. Reference to associated Scope Area as described in Breakdown of Guaranteed Maximum Price.
- 10. The schedule shall be referenced to calendar dates, and the beginning of the contract time shall be the date of receipt of the Notice to Proceed.
- 11. The schedule shall indicate for every month the total dollar amount of work planned in such month. The sum of monthly amounts shall equal the total bid amount.

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- B. Failure to include an activity required for the execution of the work shall not excuse the CONTRACTOR from completing the work and portions thereof within the specified times and at the price specified in the Contract Documents, and from meeting the constraints specified for sequence of work and control dates.

1.5 UPDATING THE CONSTRUCTION SCHEDULE

- A. The CONTRACTOR shall update the Construction Schedule prior to the progress and schedule review at the monthly progress meetings, as specified in Section 01310, Project Meetings.
- B. The schedule update shall reflect progress to date. The schedule update shall incorporate all revisions to logic and duration, as described below.
- C. The updated Construction Schedule shall be submitted by the CONTRACTOR as specified herein and under Subparagraph 1.3.D.2 in this Section.
 - 1. Logic changes to the schedule shall be approved by the Engineer prior to incorporating them into the schedule.
 - 2. The schedule update submittal shall be provided to the Engineer three working days prior to the monthly progress meeting.
 - 3. If at the progress meeting the Engineer determines that the updated schedule does not accurately reflect the progress of the work to date or project the anticipated progress to date or is otherwise unacceptable to the OWNER, the CONTRACTOR shall revise the schedule within 5 working days thereafter.
 - 4. If the CONTRACTOR fails to submit to the Engineer the updated Construction Schedule, in accordance with the findings at the progress meeting, as described above, or if it is submitted and found unacceptable by the Engineer, no monthly progress payment will be made.
- D. Updates shall be performed on the most recent accepted version of the Construction Schedule.

1.6 REVISIONS TO CONSTRUCTION SCHEDULE

- A. The cost of revision to the Construction Schedule not resulting from contract change orders shall be borne by the CONTRACTOR.
- B. Except as specified in the preceding Subparagraph A, the cost of revisions to the Construction Schedule resulting from contract change orders in the work shall be included in the cost for the contract change orders.
- C. Corrections resulting from the Engineer's review and comments shall be carried out as specified for Construction Schedule update.
- D. Revisions shall be made on the most recent accepted version of the Construction Schedule.

1.7 ADJUSTMENT OF THE CONTRACT TIME AND CHANGE ORDERS

- A. Adjustments of the contract time due to delays, additional work, or any other cause will only be issued through a contract change order in accordance with the General Conditions.

1. In the event the CONTRACTOR requests an adjustment of the contract time, the CONTRACTOR shall furnish such justification, Construction Schedule data, and supporting evidence as the Engineer may deem necessary, for a determination as to whether or not the CONTRACTOR is entitled to an adjustment of time under the provisions of the Contract.
 - a. The CONTRACTOR shall submit proof based on revised activity logic, durations, and costs with each request.
 2. The Construction Schedule shall clearly indicate that the CONTRACTOR has used, in full, all the float time available for the work involved in the request.
 3. Total and free float is not for the exclusive use or benefit of either the OWNER or the CONTRACTOR, but is a resource available to both parties for the benefit of the project on a first needed basis.
 4. The CONTRACTOR shall not be entitled to additional compensation due to schedule impacts for change order work that extends the contract beyond the scheduled completion date, but not beyond the contract completion date.
 5. The Engineer's determination as to the adjustment of the contract time will be based upon the latest version of the Construction Schedule accepted at the time of the alleged delay, and all other relevant information.
 6. Actual delays in activities which, according to the Construction Schedule, do not affect the critical path work, will not be the basis of for an adjustment to the contract time.
 7. If the Construction Schedule shows that the project is behind schedule (i.e., has negative float) then no time extensions will be allowed for contract change orders unless they create a critical path delay in excess of that already occurring. In that case, the time extension allowed will only be that amount which exceeds the already occurring delay.
- B. Change Order Requests:
1. The CONTRACTOR shall include, as part of each change order request for which the Contractor is requesting an adjustment in the contract duration, a subnetwork showing logic revisions, duration changes, and cost changes, for the work in question and its relationship to other activities on the Construction Schedule.
 2. The CONTRACTOR shall incorporate each Change Order into the Project Schedule.
- C. The Engineer will, within 15 working days after receipt of such request and supporting evidence, review the facts and advise the CONTRACTOR in writing thereof.
- D. The new Construction Schedule data, if accepted by the Engineer, shall be included in the next monthly updating of the schedule.
- E. Where the Engineer has not yet made a final determination as to the adjustment of the contract time, and the parties are unable to agree as to the amount of the adjustment to be reflected in the Construction Schedule, the CONTRACTOR shall reflect that amount of time adjustment in the Construction Schedule as the Engineer may determine as appropriate for such interim purpose.
1. It is understood and agreed that any such interim determination by the Engineer shall not be binding and shall be made only for the purpose of continuing to schedule the work, until such time as final determination as to any adjustment of the contract time acceptable to the Engineer has been made.
 2. The CONTRACTOR shall revise the Construction Schedule prepared thereafter in accordance with the final decision.

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PART 2 - NOT USED

PART 3 - EXECUTION

3.1 IDENTIFICATION OF SUBMITTALS

- A. Completely identify each Construction Schedule submittal and resubmittal by showing at least the following information:
1. Name and address of submitter, plus name and telephone number of the individual who may be contacted for further information.
 2. Name of project as it appears in this Specification and specification number.
 3. Whether this is an original or updated submittal or resubmittal.
 4. Number all submittals sequentially in accordance with Section 01330, Submittal Procedures.

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SECTION 01322

WEB BASED DOCUMENT CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. The project team will use and maintain a web-based database as the primary means of communication related to the Project's correspondence, submittals, requests for information (RFIs), advisory notices, and non-compliance issues. Correspondence from the Contractor shall be sent to the Construction Manager via the PROCORE System.
- B. The Construction Manager and Contractor shall utilize PROCORE's system for electronic submittal of all data and documents (unless specified otherwise by the Construction Manager) throughout the duration of the Contract. PROCORE is a web-based electronic media site that is hosted by PROCORE LLC utilizing their PROCORE web solution. PROCORE will be made available to all Contractor's project personnel. The joint use of this system is to facilitate; electronic exchange of information, automation of key processes, and overall management of the Contract. PROCORE shall be the primary means of project information submission and management. When required by the Construction Manager, paper documents will also be required. In the event of discrepancy between the electronic version and paper documents, the paper documents will govern. PROCORE is a registered trademark of PROCORE LLC.

1.2 USER ACCESS LIMITATIONS

- A. The Construction Manager will control the Contractor's access to PROCORE by allowing access and assigning user profiles to accepted Contractor personnel. User profiles will define levels of access into the system; determine assigned function-based authorizations (determines what can be seen) and user privileges (determines what they can do).

1.3 AUTOMATED SYSTEM NOTIFICATION AND AUDIT LOG TRACKING

- A. Review comments made (or lack thereof) by the Construction Manager and Design Consultant on Contractor submitted documentation shall not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for managing, tracking, and documenting the Work to comply with the requirements of the Contract Documents. The Construction Manager's acceptance via automated system notifications or audit logs extends only to the face value of the submitted documentation and does not constitute validation of the Contractor's submitted information.

1.4 CONTRACTOR RESPONSIBILITY

- A. The Contractor shall be responsible for the validity of their information placed in PROCORE and for the abilities of their personnel. Accepted users shall be knowledgeable in the use of computers, including Internet Browsers, email programs, CAD drawing applications, and Adobe Portable Document Format (PDF) document distribution

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program. Adobe PDF documents will be created through electronic conversion rather than optically scanned whenever possible. The Contractor is responsible for the training of their personnel in the use of PROCORE (outside what is provided by the Construction Manager) and the other programs indicated above as needed.

1.5 USER ACCESS ADMINISTRATION

- A. Provide a list of Contractor's key PROCORE personnel for the Construction Manager's acceptance. The Construction Manager is responsible for adding and removing users from the system. The Construction Manager reserves the right to perform a security check on all potential users.

1.6 CONNECTIVITY PROBLEMS

- A. PROCORE is a web-based environment and therefore subject to the inherent speed and connectivity problems of the Internet. The Contractor is responsible for its own connectivity to the Internet. PROCORE response time is dependent on the Contractor's equipment, including processor speed, Internet access speed, etc. and current traffic on the Internet. The Owner and Construction Manager will not be liable for any delays associated from the usage of PROCORE including, but not limited to: slow response time, down time periods, connectivity problems, or loss of information. The Contractor will ensure that its connectivity to the PROCORE system (whether at the home office or job site) is accomplished through some form of high-speed communications with 128 kb/s as the minimum bandwidth requirements for using the system. It is recommended a faster connection be used when uploading pictures and files into the system. Under no circumstances shall the usage of PROCORE be grounds for a time extension or cost adjustment to the Contract. If there are problems that persist with the PROCORE site for more than 24 consecutive hours that prevent the electronic submission of data by the Contractor, the Contractor may submit documents in paper form to the Construction Manager until such time that the Construction Manager notifies the Contractor that the PROCORE site is operable and available for use. Construction Manager shall likewise send documents to Contractor in paper form during such disruption of the Procure system.

1.7 TRAINING

- A. The Construction Manager has arranged for the following training to be provided to the Contractor. The Construction Manager will provide a one-hour training class to the Contractor within ten (10) days of NTP at a time mutually agreeable to Contractor and Construction Manager. Thereafter the Construction Manager will provide up to one hour of additional training via telephone during the project per month of the project life.

PART 2 - PRODUCTS

2.1 GENERAL

- A. In order to process correspondence, submittals, and RFIs, the Contractor must provide and have in place for its own use the required basic components outlined below.
 - 1. Hardware

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- a. A computer with internet access and sufficient capabilities to perform all project duties; a scanner at least large enough to scan 11" x 17" sheets with sufficient resolution to maintain clarity and legibility of the document at its native size; and a color printer of sufficient size and capacity to accept incoming correspondence as described in this section.
2. Software
 - a. Adobe Acrobat 9 or higher; Microsoft's Internet Explorer v7 or higher; Microsoft Office 2010 or higher, including but not limited to Microsoft Word and Microsoft Excel.
 - b. PROCORE currently supports Mozilla's Firefox v3.5 and newer, Apple's Safari v4 and newer, Google Chrome, and Microsoft's Internet Explorer v7 and v8 web browsers for accessing the application. Certain functions may not be available when using any program other than the newest version of Microsoft's Internet Explorer.
3. Facilities
 - a. The Contractor shall make its own arrangements to provide high-speed (minimum speed: download 1Mbps/upload 256Kbps) internet connection for its own use as soon as practicable.

PART 3 - EXECUTION

3.1 SUMMARY

- A. Items to be uploaded to PROCORE by the Construction Manager include but are not limited to: RFI responses, Submittal comments, Clarification letters, Design Clarifications, Field Orders, et al. These items will be emailed via PROCORE as attachments in PDF file format via PROCORE. These attachments may include files that need to be viewed and/or printed in color. Formal letters, stop notices, Field Orders, Progress Payment Requests, and Contract Change Orders will always include a wet-signed hard copy.
- B. Items to be uploaded to PROCORE by the Constructor include but are not limited to: RFI, Submittals, Request for Clarification letters, Request for Design Clarification letters, et al. These items will be emailed via PROCORE as attachments in PDF file format via PROCORE. These attachments may include files that need to be viewed and/or printed in color. Contractor shall provide wet-signed hard copies of documents required by Contract Documents, as well as any documents requested by the Construction Manager, including but not limited to: Formal letters, Progress Payment Requests, and Contract Change Orders, et al.

3.2 PROCURE UTILIZATION

- A. All project related correspondence (RFIs, submittals, etc.) originated by the Contractor or Subcontractor, Supplier, et al. shall be directed to the Construction Manager, unless otherwise indicated in the Specifications.

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3.3 SUBMITTALS

- A. The use of the electronic communication does not waive the requirement for the provision of hard copies of all formal correspondence and submittals. The hard copies of all documents must match the electronic copies of all correspondence and submittals.
- B. Submittals shall be in accordance with Section 01300. The provisions of Section 01300 shall apply both to electronic copies and hard copies of submittals.
- C. In addition to above, PROCORE shall be utilized in connection with submittal preparation and information management required by but not limited to Sections:
 - 1. Section 01320, **PROGRESS SCHEDULES**.
 - 2. Section 01300, **SUBMITTALS**.
- D. PROCORE will be utilized by all other Sections not listed above and as required by the Construction Manager.
- E. If a submittal package has multiple items that are not directly related, each item shall be considered a separate submittal and shall be sent separately. For example, "Concrete Mix Design," and "Concrete Curing Compound" shall be submitted as separate items to the Construction Manager.

3.4 TERMINATION IN USE

- A. The Owner may request a termination of the use of PROCORE for the electronic submission of data, and alternatively the use of paper documents submitted in accordance with the Contract Documents by providing notification in writing with ten (10) days' notice that it intends to discontinue use of PROCORE.

3.5 ADOBE PDF

- A. All information, comments, questions, and statements shall be scanned and/or converted to the PDF file format and attached to the email via PROCORE. Items to be sent via email via PROCORE include but are not limited to large-format plan sheets (22" x 34" or larger), small-format plan sheets, pages within tabbed binders, RFIs, transmittal sheets, et al. The PDF attachments supplied to the Construction Manager shall be in a sufficient resolution to be fully legible at its native size.
- B. All separate files within a given piece of correspondence shall be combined into a single PDF document (e.g. An RFI that contains a text file and two photo files shall be combined into a single PDF document prior to delivery to the Construction Manager.)

3.6 LABELING FORMAT

- A. The subject line of each email via PROCORE, and the file name of any attached files, shall be in accordance with Section 01330-1.3.A.2 for submittals and as directed by Construction Manager other correspondence (RFIs, Letters, Transmittals, Proposed Change Orders, et al.)
- B. Label shall include the type of correspondence (i.e. RFI, etc.), a unique number, sequentially assigned for the given piece of correspondence. The Contractor will

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indicate the subject at the end of the numbering scheme with a description (key words) of the item. Each piece of correspondence shall be sent in a separate email via PROCORE.

3.7 ORIGINAL DOCUMENTS

- A. Where possible, the Contractor will obtain the electronic document from its original source to maintain the integrity, legibility, and searchability of the document.

3.8 ORGANIZATION

- A. The information included in the attachments shall be organized in a logical and thoughtful manner. Where the information originated in a tabbed format (a binder, for example), the scanned and/or converted PDF file shall be electronically bookmarked accordingly using the "bookmark" function of Adobe Acrobat 9 Std.

3.9 PRINTING

- A. Except where otherwise indicated, the Contractor will receive no hard copies of the above outlined correspondence. The Contractor will be required to print for its use, in color if necessary, any record copies, field copies, sub-Contractor copies, etc., if such copies are desired.

3.10 PROJECT FORMS

- A. The Contractor may use its own correspondence forms to be attached to correspondence emails via PROCORE as long as the Contractor's forms comply with this and all submittal sections.

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SECTION 01330

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 GENERAL

A. General:

1. This Section outlines in general the items that the CONTRACTOR must prepare or assemble for submittal during the progress of the work.
2. There is no attempt herein to state in detail all of the procedures and requirements for each submittal.
3. The CONTRACTOR's attention is directed to the individual Specification Sections in these Contract Documents, which may contain additional and special submittal requirements.
4. The OWNER reserves the right to direct and modify the procedures and requirements for submittals as necessary to accomplish the specific purpose of each submittal.
5. The CONTRACTOR shall anticipate resubmitting submittals for major pieces of equipment and for control systems.
6. Should the CONTRACTOR be in doubt as to the procedure, purpose, or extent of any submittal, inquiries shall be directed to the ENGINEER.

B. Schedule of Submittals:

1. Within 15 working days of the Notice to Proceed, the CONTRACTOR shall submit a complete list of anticipated submittals with specification/drawing references and proposed times for submitting, reviewing and processing of submittals.
2. This list shall be updated with "late start" submittal dates within 15 working days of submittal of the CONTRACTOR's Construction Schedule.
3. The submittal dates shall be updated upon approval of the Construction Schedule and periodically thereafter.
4. Any additional submittals shall also be included in updates.
5. Additional submittals and resubmittals shall be provided in a timely manner without delaying the project.
6. Within 30 working days after the Notice to Proceed, CONTRACTOR shall submit all submittals to start construction including, but not limited to, any priority submittals identified during the Design-Assist process.

1.2 ADMINISTRATIVE SUBMITTALS

- A. The CONTRACTOR is reminded of their obligation as required by law to make required submittals promptly to the applicable federal, state, or local agency. Failure to comply with this requirement may result in the withholding of progress payments and make the CONTRACTOR liable for other prescribed action and sanctions.
- B. The CONTRACTOR shall submit to the ENGINEER a copy of all letters relative to the Contract, transmitting notifications, reports, certifications, certified payrolls, and the like, that the CONTRACTOR submits directly to a federal, state, or other governing agency.
- C. During the performance of the Contract, the CONTRACTOR shall maintain on a daily basis, and submit to the ENGINEER as requested, full and correct information as to the number of persons employed in connection with each subdivision of the work, the

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classification, rate of pay, citizenship status, and address of each person, and the cost, source, and amount of each class of materials delivered, equipment received, and major construction equipment used in each subdivision of the work.

D. Certified Payroll:

1. No later than the 25th day of each month, the CONTRACTOR shall submit to the ENGINEER a copy of the CONTRACTOR's certified payroll for the previous month, and if requested, copies of certified payrolls for Subcontractors.
2. The payrolls shall include for each employee the full name, address and social security number; the correct classification and rate of pay (including rates of contributions for, or costs assumed to provide various fringe benefits); daily and weekly hours worked; itemized deductions and actual wages paid.
3. The certified payrolls shall be on State of California forms.

1.3 TECHNICAL SUBMITTALS

A. General:

1. Requirements in this Section are in addition to any specific requirements for submittals specified in other divisions and Sections of these Contract Documents.
2. Submittal Contents and Numbering:
 - a. Each submittal shall have the specification Section and applicable paragraph number clearly identified on the front of the submittal transmittal form for each item submitted. The number shown on the transmittal form for each item shall be labeled in the content of the submittal. For example, if Item 1 is a ball Valve and Item 2 is a gate valve then the cut sheets for each respective valve shall be labeled Item 1 and Item 2.
 - b. Each submittal shall be sequentially numbered starting with the first one delivered for each spec section. For example, the first submittal for Section 02300 should be 02300-1-0.
 - c. Resubmittals shall include the number of the original submittal plus the suffix "-1" for the first resubmittal, "-2" for the second resubmittal. For example, a second resubmittal would be shown as 02300-1-1. Each resubmittal shall be the whole version of the corrected submittal, and shall not reference past versions. Each resubmittal shall include all items including items previously marked as NET.
 - d. Submittals not conforming to these requirements will be rejected.
 - e. If several items (i.e. different types of valves) are combined into the same submittal, none of the items will be approved for installation until the entire submittal is accepted.
3. Submitted data shall be fully sufficient in detail for determination of compliance with the provisions and intent of the Contract Documents.
4. Coordination Responsibilities:
 - a. Shop drawing submittal and coordination are the responsibility of the CONTRACTOR; this responsibility shall not be delegated in whole or in part to Subcontractors or suppliers.
 - b. Designation of work "by others," if shown on shop drawings, shall mean that the work will be the responsibility of the CONTRACTOR rather than the Subcontractor or supplier who has prepared the shop drawings.
5. No equipment or material for which listings, drawings, or descriptive material is required shall be fabricated, purchased, or installed until the ENGINEER has reviewed and accepted such lists, final shop drawings, or other descriptive material. Installation of such equipment or material without accepted submittals will be considered defective work.
6. Submittal Review Time:

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- a. Submittals will be acted upon by the ENGINEER as promptly as possible and returned to the CONTRACTOR not later than the time allowed for review in Paragraph B.4 below.
 - b. The CONTRACTOR shall provide in their Construction Schedule the time for OWNER review of each submittal (and resubmittal for major equipment and control systems) in accordance with the allowable time specified herein and in Section 01320, Progress Schedule.
 - c. This required time for OWNER review shall not be a cause for delay in contract completion nor shall it be a reason for an extension of contract time.
 - d. If the CONTRACTOR is required by the OWNER to resubmit data, then neither the time required for the CONTRACTOR to prepare and resubmit such data, nor the required time for OWNER review, shall be a cause for delay in contract completion or for an extension of contract time.
 - e. Responsibility for time required for preparing and submitting required data shall be assigned solely to the CONTRACTOR.
7. Excessive Submittal Review:
 - a. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable submittal to the ENGINEER by the second submission of a submittal item.
 - b. Additional costs of the ENGINEER's review beyond the second submission shall be the responsibility of the CONTRACTOR and may be deducted from the monthly progress payments.
 - c. This applies to all submittals including shop drawings.
8. Changes After Review:
 - a. After a submittal has been reviewed and accepted, no changes or substitutions in that submittal will be allowed without the ENGINEER's approval.
 - b. If allowed, the CONTRACTOR will be responsible for the additional costs for engineering, administrative, clerical or other work required for additional review.
9. Intent of Review:
 - a. Shop drawings will be reviewed for general conformance with the drawings and specifications.
 - b. The intent of the review is to determine if the CONTRACTOR is submitting materials and equipment which are in general conformance with the Contract Documents.
 - c. Detailed review of dimensions, sizes, space requirements, coordination with other equipment, and other construction details is not performed.
 - d. Additional work and costs, resulting from errors in the shop drawings shall be the CONTRACTOR's responsibility and liability.
 - e. Accuracy, coordination, and completeness of shop drawings shall be the sole responsibility of the CONTRACTOR, including responsibility to backcheck comments, corrections, and modifications from the ENGINEER's review before fabrication.
10. The CONTRACTOR shall indicate on the submittal transmittal form if and how the submittal deviates from the contract requirements. In addition, CONTRACTOR shall include a copy of the relevant specification section in its entirety marked with ACCEPT/DEVIATE next to each paragraph. Failure to include this documentation is grounds for ENGINEER to reject and return the Submittal to the CONTRACTOR for resubmission.
11. Rebar Shop Drawings:
 - a. The CONTRACTOR shall supply the ENGINEER with a copy of all reinforcing steel detail drawings.
 - b. Changes to the Contract Documents made by the CONTRACTOR in reinforcing steel shop drawings shall be called out in the letter of submittal.

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- c. Such changes will not be acceptable unless the ENGINEER has expressed consent to such changes in writing.
- 12. Submittals of shop drawings, layout diagrams, catalog cuts and data, test reports, and information in sufficient detail to show complete compliance with all specified requirements shall be furnished to the ENGINEER, covering but not limited to the following items (as applicable):
 - Aggregate Base Course
 - Air compressors
 - Asphalt mixes
 - Block masonry
 - Building specialties
 - Cabinets
 - Caulking and sealing compounds
 - Chemical systems
 - Concrete mixes
 - Control panels
 - Demolition plan
 - Detection systems
 - Doors and frames
 - Electrical conduit, wire and specials
 - Electrical fixtures and appliances
 - Electrical load centers
 - Electrical substations
 - Electrical conduit, wire and specials
 - Engineered fill
 - Engines and appurtenances
 - Equipment provided by the CONTRACTOR
 - Fences, barricades and gates
 - Gas monitoring systems
 - Generators and appurtenances
 - Glazing
 - Grating
 - Gravel bedding
 - Grout
 - Hardware
 - Heating, ventilating and air conditioning equipment
 - Imported fill
 - Indicators
 - Instrumentation
 - Irrigation system plan
 - Landscaping
 - Lights and lighting fixtures
 - Louvers
 - Meters
 - Miscellaneous fabricated metals
 - Miscellaneous furnishings
 - Mixers
 - Motor control centers
 - Motors, starters and controls
 - Office equipment and furnishings provided by CONTRACTOR
 - Paints, coatings and finishes
 - Piles
 - Pipe, fittings and specials

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Pipe supports and anchors
Planting plan
Plumbing fixtures
Precast concrete elements
Pressure gauges
Primary elements
Programmable logic controllers
Pumps
Recorders
Reinforcing steel and layout drawings
Roofing and waterproofing
Sheet pile, shoring and bracing
Shelving
Signs
Structural steel
Tanks
Temporary bypasses
Temporary dewatering systems and equipment
Valve and gate operators and controllers
Valves and gates
Variable frequency drives
Water heaters
Windows
Workstations

B. Submittal Procedure:

1. Unless otherwise required in this specification section, the CONTRACTOR shall submit to the ENGINEER for review one electronic copy in PDF format of each submittal (shop drawings, electrical diagrams, and catalog cuts for fabricated items and manufactured items furnished under this Contract, etc.) All electronic submittals from the Contractor shall be sent to the Construction Manager via the project Web Based Document Control (PROCORE LLC) per Section 01322.
2. Electronic PDF copies shall include electronic bookmarks for each section of the submittal to aid in navigation.
3. Hard copies of submittals shall only be provided where it is not feasible to provide submittals in electronic format.
4. Submittals shall be submitted in sufficient time to allow the ENGINEER not less than twenty (20) working days for examination and response, except for:
 - a. Designs for turnkey items for which thirty (30) working days will be allowed, and
 - b. Substitutions for which (40) working days will be allowed.
5. Shop drawings shall be accurate, distinct, and complete, and shall contain all required information, including satisfactory identification of items, units, and assemblies in relation to the Contract Drawings and Specifications.
6. CONTRACTOR Certification:
 - a. Shop drawings shall be submitted only by the CONTRACTOR, who shall indicate by a signed stamp on the shop drawings, or other approved means, that the CONTRACTOR has checked and approved the shop drawings, and that the work shown is in accordance with Contract requirements and has been checked for dimensions and relationship with work of all other trades involved.
 - b. Submitting incomplete or unchecked shop drawings for the ENGINEER to correct or finish will not be acceptable, and shop drawings that, in the opinion of the ENGINEER, indicate that they have not been checked by the CONTRACTOR will be rejected and returned to the CONTRACTOR for resubmission in the proper form.

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7. Return of Reviewed Submittals:
 - a. When the shop drawings have been reviewed by the ENGINEER, the appropriate number of submittals will be returned to the CONTRACTOR appropriately stamped.
 - b. If major changes or corrections are necessary, the shop drawing will be rejected and returned to the CONTRACTOR with the need for such changes or corrections indicated.
 - c. The CONTRACTOR shall correct and resubmit rejected shop drawings in the same manner and quantity as specified for the original submittal.
 - d. If changes are made by the CONTRACTOR (in addition to those requested by the ENGINEER) on the resubmitted shop drawings, such changes shall be clearly explained in a transmittal letter accompanying the resubmitted shop drawings.
 8. The review of such shop drawings and catalog cuts by the ENGINEER shall not relieve the CONTRACTOR from responsibility for correctness of dimensions, fabrication details, coordination with other work, and space requirements, or for deviations from the Contract Drawings or Specifications, unless the CONTRACTOR has called attention to such deviations in writing by a letter accompanying the shop drawings and the ENGINEER approves the change or deviation in writing at the time of submission; nor shall review by the ENGINEER relieve the CONTRACTOR from the responsibility for errors in the shop drawings.
 9. The CONTRACTOR agrees that shop drawing submittals processed by the ENGINEER do not become Contract Documents and are not Change Orders; that the purpose of the shop drawing review is to establish a reporting procedure and to permit the ENGINEER to monitor the CONTRACTOR's progress and understanding of the design.
- C. Shop Drawing Requirements: Shop drawings referred to herein shall include shop drawings, catalog cuts and information schematic diagrams, and other submittals for both shop and field-fabricated items. The CONTRACTOR shall submit, as applicable, the following for all prefabricated or manufactured structural items, material, and equipment:
1. General:
 - a. For structures, submit all shop, setting, equipment, miscellaneous iron and reinforcement drawings and schedules necessary for construction. The foregoing shall include detailed "pour drawings" which shall show the sequence of concrete placement, and the type, quantity and location of all embedment items (sleeves, anchor bolts, door frames, etc.)
 - b. For pipelines, submit a detailed layout of the pipeline with details of clearances for crossings, bends, closure pieces and fabricated specials and furnish any other details necessary.
 - c. For trench excavation, submit detailed plan showing the design of shoring, bracing, sloping or other provisions necessary for safety.
 - d. For boring and jacking, submit a detailed description of the process to be used.
 - e. For equipment which requires electrical service, submit detailed information to show power supply requirements, MCC and control panel, elevations, wiring diagrams, control and protection schematics, shop test data, operation and maintenance procedures, outline drawings, and manufacturer's recommendation of the interface/interlock among the equipment.
 - f. For mechanical equipment submit all data pertinent to the installation and maintenance of the equipment including shop drawings, anchorage requirements, manufacturer's recommended installation procedure, detailed installation drawings, test data and curves, operation and maintenance manuals, and other details necessary.

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- g. For architectural fabrication submit all data pertinent to the installation of the fabrications, including shop drawings, manufacturer's recommended installation procedure, detailed installation drawings, and other details necessary.
 - h. For shop drawings or equipment drawings, including dimensions, size and location of connections to other work, and weight of equipment.
 - i. Installation or placing drawings for equipment, drives, and bases.
 - j. Supporting calculations for equipment and associated supports, or hangers required or specified to be designed by equipment manufacturers, including seismic restraint information and details.
 - k. Complete coating manufacturer's specifications, including materials description and paint system.
 - l. Performance data and head vs. flow curves for compressor and pumps.
 - m. Suggested spare parts list with current price information.
 - n. List of special tools required for checking, testing, parts replacement, and maintenance. (Special tools are those which have been specially designed or adapted for use on parts of the equipment, and which are not customarily and routinely carried by maintenance mechanics.)
 - o. List of special tools furnished with the equipment.
 - p. List of materials and supplies required for the equipment prior to and during startup.
 - q. Installation instructions.
 - r. List of materials and supplies furnished with the equipment.
 - s. Samples of finish colors for selection.
 - t. Special handling instructions.
 - u. Requirements for storage and protection prior to installation.
 - v. Requirements for routine maintenance required prior to plant startup.
 - w. Startup and operating instructions.
 - x. Seismic design calculations and restraint details for equipment and piping supports. Calculations shall be stamped by a Civil or Structural Engineer registered in the State of California.
2. Electrical:
- a. Wiring and control diagrams of systems and equipment. Local control panel details.
 - b. List of special motor features being provided (e.g., space heaters, altitude corrections, thermal protectors, mounting arrangement, etc.).
 - c. Complete motor rating for all motors, including motor no-load, starting, and full-load current at rated voltage; full-load speed and full-load current at 110 percent voltage; motor service factor; motor efficiency and power factor at 1/2, 3/4, and full-load at rated voltage; recommended maximum kVAR of power factor correction capacitors when capacitors are switched with motor.
 - d. See Division 16, ELECTRICAL, for additional specific submittal requirements.
3. Instrumentation and Control:
- a. See Technical Sections for additional specific submittal requirements.
 - b. The submittals shall include satisfactory identification of items, units, and assemblies in relation to the Specification Section number, and the system or equipment identification or tag number shown on the Drawings, the Process and Instrumentation Diagram (P&ID), or as provided in applicable Specification Section.
- D. Submittals required for foreign-manufactured items:
- 1. In addition to the submittal requirements stated above, suppliers of foreign-manufactured items shall submit the names and addresses of companies within the United States that maintain technical service representatives and a

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complete inventory of spare parts and accessories for each foreign-made item proposed for incorporation into the work. Failure to provide the foregoing capabilities shall be just cause for rejection of the foreign-manufactured items.

- E. Final shop drawings to be submitted to OWNER:
 - 1. Complete sets of reproducible (full size mylar or vellum base) final shop drawings shall be submitted to the OWNER before, or at the time of, delivery of equipment onto the site.
- F. Seismic loading design provisions:
 - 1. All equipment supports that are not specifically detailed on the Drawings or specified herein shall be the responsibility of the equipment manufacturers and shall be designed by a Civil or Structural Engineer registered in the State of California.
 - 2. The design shall be in accordance with the seismic provisions of the latest edition of the 2016 edition of the California Building Code (CBC) and of the seismic design requirements listed in Section 01610, General Equipment Requirements, in addition to all other loading conditions.
- G. Submittal of interface information (connection and correlation with other work):
 - 1. Where called for in the Specifications, and as determined necessary by the ENGINEER to provide proper correlation with other equipment, complete interface information shall be submitted.
 - 2. This interface information shall be accurate and contain all information necessary to allow the completion of detailed design and construction of the interfacing or connecting work.
 - 3. The CONTRACTOR shall include in their negotiation for subcontract work, such agreements as may be necessary to ensure the accuracy of Subcontractor's interface submittal information.
 - 4. In the event additional costs are incurred due to subsequent changes to information given in said interface information, such additional costs shall be borne by the CONTRACTOR.
- H. Contract As-Built Drawings:
 - 1. The CONTRACTOR shall deliver to the OWNER one complete set of final Contract As-Built Drawings for OWNER records before the contract will be accepted by the OWNER. The Contract As-Built Drawings will consist of a set of reproducible drawings of all CONTRACTOR supplied equipment (including control systems) and a marked-up set of Contract As-Built Drawings.
 - 2. As-Built Drawings of CONTRACTOR-Supplied Equipment
 - a. The drawings shall be silver imaged, positive, reverse-reading duplicates (image reversed when viewed from emulsion side), and at the same dimensional scale as the originals. They shall be on a polyester translucent base material with a matte surface on the side opposite the emulsion side. The image emulsion side shall be without a matte surface. The matte surface shall have a sufficient tooth to take a solid opaque line from a 4H pencil and be compatible to the use of ink. Minimum sheet thickness shall be (.08 mm) .003 inch.
 - b. The legibility and contrast of each drawing submitted to the OWNER shall be such that every line, number, letter, and character is clearly readable in a full size blow back from a 35 mm microfilm negative of the drawing.
 - c. The overall dimensions of each drawing submitted to the ENGINEER shall be equal to one of the OWNER's standard sheet sizes. The title block area in the lower right hand corner of each drawing shall be clear of all linework, dimensions, details, and notes, except for the CONTRACTOR's title block. The dimensions of

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the title block area are minimum and are measured from the edges of the drawing sheet.

DRAWING FORMAT	
Sheet Sizes Height x Width	Title Block Area Height x Width
11" x 8-1/2"	2-1/2" x 3-3/4"
11" x 17"	3" x 4"
22" x 34"	3-1/2" x 8"

3. Contract As-Built Drawings

- a. The CONTRACTOR shall keep an up-to-date set of marked-up Contract Drawings on an OWNER-supplied set of Drawings.
- b. The OWNER-supplied set of Drawings will consist of one set of full-size sepia reproductions of the Contract Drawings, supplied to the CONTRACTOR at the start of the work.
- c. During the progress of the work, the CONTRACTOR shall record on the Contract As-Built Drawings any changes from or additions to the work described in the Plans and Specifications.
- d. All information recorded on the Contract As-Built Drawings shall be clearly legible.
- e. Information to be recorded on the Contract As-Built Drawings shall include, but not be limited to, the following:
 - 1) Actual routing of electrical conduits, whose routing is only indicated in general on the Drawings.
 - 2) Actual location of manhole structures.
 - 3) Actual alignment of all installed pipe.
 - 4) Specific details of pipe connections, and manhole structures.
 - 5) Specific details on the installation and connection of mechanical and electrical equipment.
 - 6) Field dimensions where they differ from those shown on the Drawings.
 - 7) Additions to and/or deletions from the work, including all contract change orders.
 - 8) Other details showing as-built conditions, which are shown differently or only in general on the Drawings.
 - 9) Addenda.
 - 10) Location of buried features located during construction except utility service connections.
- f. It is the CONTRACTOR's responsibility to ensure that any changes, deletions, specific construction details, etc., performed by a Subcontractor are recorded on the Contract As-Built Drawings.
- g. Location Survey:
 - 1) The CONTRACTOR shall professionally survey the lateral and vertical position of anything buried underground as part of this Contract to within one inch accuracy of the benchmark and baseline provided by the OWNER.
 - 2) The survey information shall be included on the record drawings and the CONTRACTOR shall not be allowed to cover the buried materials until after the

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OWNER's inspector has verified the information as accurate and complete, and is shown on the Contract As-Built Drawings.

- h. Once every month, starting from the completion of mobilization as defined in Section 01505, Mobilization, the CONTRACTOR shall provide the OWNER with a copy of the then up-to-date set of marked-up Contract As-Built Drawings in accordance with the provisions under and Section 01320, Project Schedule.
- i. At the end of the work, prior to Project Closeout, the CONTRACTOR shall provide the OWNER with the Contract As-Built Drawings, showing all "as-built" conditions.
- j. See also Section 01800, Operational Completion and Project Closeout.

I. Operation and Maintenance (O&M) Manuals:

- 1. The CONTRACTOR shall furnish three (3) hard-copies and one (1) electronic copy (PDF format) of a complete instruction manual for installation, operation, maintenance, and lubrication requirements for each component of mechanical and electrical equipment or system.
- 2. All equipment manufacturers shall be made aware of these requirements and all associated costs shall be included in the costs for furnishing the equipment or system.
- 3. O&M Submittal Review Checklist:
 - a. The CONTRACTOR shall include a completed O&M Manual Submittal Review Checklist (copy included at the end of this Section) with each O&M manual submittal.
 - b. The checklist shall indicate that the O&M manual as submitted complies in all respects to the contract requirements.
 - c. Any O&M manual submitted without a completed checklist will be rejected.
- 4. The manuals shall be furnished to the ENGINEER upon the delivery of the respective equipment.
- 5. No payment will be made for equipment or materials or equipment installation before the respective O&M manuals have been approved by the ENGINEER.
- 6. Each O&M manual shall be complete in all respects for all equipment, controls, accessories, and associated appurtenances.
 - a. All information on pre-printed documents (text, drawings, figures, tables, etc.) that does not apply to the deliverables on this project shall be crossed out. This must be done in a clear, unambiguous manner, so that persons using this material can easily distinguish between applicable and non-applicable information.
- 7. Each O&M manual shall include, but not be limited to, the following:
 - a. Equipment Summary Form
 - 1) OWNER requires that a Maintenance Summary Form, shown in O&M Manual Submittal Review Checklist, be filled out for each type of equipment on a project and that they be included in every O&M manual. OWNER requires that this specific form be used, and that it be placed at the front of each equipment item's O&M manual or immediately behind the item's binder tab, when multiple items are included in a binder. O&M manuals submitted without this form, or not filled out as specified may be rejected. Manufacturer's standard forms, or any other forms, will be considered on a case-by-case basis provided the form includes all of the same information that is included on Maintenance Summary Form. Contractor shall obtain approval for an alternate format prior to submission of their submittal. An electronic version of this form, in Microsoft Word format, is available from OWNER to allow required fields to be expanded or compressed as needed to accurately record the information.
 - b. Diagrams and illustrations, including pump curves indicating operating points.

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- c. Detailed description of the function of each principal component of the system.
- d. Performance and nameplate data.
- e. Installation instructions.
- f. Starting procedure
- g. Proper adjustment procedure.
- h. Test procedures.
- i. Operating procedure.
- j. Shutdown instructions.
- k. Emergency operating instructions and troubleshooting guide.
- l. Safety instructions.
- m. Maintenance and overhaul instructions which shall include detailed assembly drawings with part numbers, parts list, instructions for ordering spare parts, and complete preventive maintenance instructions required to ensure satisfactory performance and longevity of the equipment.
- n. Lubrication instructions which shall list points to be greased or oiled, shall recommend type, grade, and temperature range of lubricants, and shall recommend frequency of lubrication.
- o. List of electrical relay settings and control and alarm contact settings.
- p. Electrical interconnection wiring diagram for equipment furnished, including all control and lighting systems.
- q. Recommendations for spare parts and special tools.
- 8. Hard-Copy O&M Manuals:
 - a. Each copy of the manual shall be assembled in one or more hard-back type three-ring binders, each with title page, typed table of contents, and heavy section dividers with numbered plastic index tabs.
 - b. Cover label and title page shall be clearly labeled to designate the project title, project number, Specification Section where the item is specified, system or equipment for which it is intended with reference to the facility, equipment number, and equipment manufacturer name.
 - c. Typed table of contents for the entire set, identified by volume number, shall appear in each binder.
 - d. Each manual shall be divided into sections paralleling the equipment specifications.
 - e. All data shall be hole-punched for binding and composition and printing shall be arranged so that punching does not obliterate any data.
 - f. Pages larger than 8-1/2" x 11" shall be folded, showing title block or optionally included in binder pockets.
 - g. Where more than one binder is required, they shall be labeled "Vol. 1", "Vol. 2", and so on.
 - h. Submit manual organization and format to the ENGINEER for approval prior to manual preparation.
- 9. Electronic O&M Manuals:
 - a. In addition to the designated number of hard-copies for each required Manufacturer's O&M manual, provide an electronic copy, each on its own separate USB flash drive.
 - b. The USB flash drive shall contain one full version of the O&M manual in Adobe's Portable Document File (PDF) format.
 - 1) Text of O&M manual shall be provided in searchable PDF format, making proper use of PDF for headings and heading levels, paragraphs, tables, and lists. The submitted O&M manual shall be a collected, organized, and indexed with a set of bookmarked PDF documents comprising each O&M document that corresponds to a hardcopy binder.

- c. In addition, the USB flash drive shall contain the separate text and drawing files used to create the PDF O&M manual.
 - d. An index shall be provided on the USB flash drive as a separate text file with the name "index" and shall include the file name and detailed description of each individual file included on the USB flash drive.
 - e. The USB flash drive exterior shall be labeled with the submittal number.
 - f. In addition to being included in PDF O&M manuals, Drawings shall also be provided separately in AutoCAD format.
 - 1) All O&M manual drawings of final approved equipment, including electrical, instrumentation and control system drawings, shall be provided in latest version of AutoCAD.
- 10. Manuals shall be transmitted to the ENGINEER upon delivery of the equipment and all equipment shall be serviced in accordance with the manufacturer's recommendations prior to operation. A service record shall be maintained on each item of equipment and shall be delivered to the ENGINEER prior to final acceptance of the project.
- J. Manufacturers' certificates and proper installation:
 - 1. The CONTRACTOR shall submit manufacturers' certificates of proper installation for items of equipment as specified under Section 01750, Testing, Training and Startup.
- K. Samples and test specimens:
 - 1. Where required in the Specifications, and as determined necessary by the ENGINEER, test specimens or samples of materials, appliances, and fittings to be used or offered for use in connection with the work shall be submitted to the ENGINEER at the CONTRACTOR's expense, with information as to their sources, with all cartage charges prepaid, and in such quantities and sizes as may be required for proper examination and tests to establish the quality or equality thereof, as applicable.
 - 2. All samples and test specimens shall be submitted in ample time to enable the ENGINEER to make any tests or examinations necessary, without delay to the work. The CONTRACTOR will be held responsible for any loss of time due to their neglect or failure to deliver the required samples to the ENGINEER, as specified.
 - 3. The CONTRACTOR shall submit additional samples as required by the ENGINEER to ensure equality with the original approved sample and/or for determination of Specification compliance.
 - 4. Laboratory tests and examinations that the OWNER elects to make in its own laboratory will be made at no cost to the CONTRACTOR, except that, if a sample of any material or equipment proposed for use by the CONTRACTOR fails to meet the Specifications, the cost of testing subsequent samples shall be borne by the CONTRACTOR.
 - 5. All tests required by the Specifications to be performed by an independent laboratory shall be made by a laboratory approved by the ENGINEER. Certified test results of all specified tests shall be submitted in duplicate to the ENGINEER. The samples furnished and the cost for the laboratory services shall be at the expense of the CONTRACTOR and included in the prices bid for the associated work.
 - 6. Approved sample items (fixtures, hardware, etc.) may be incorporated into the work upon approval, and when no longer needed by the ENGINEER for reference.
- L. Material and equipment colors:
 - 1. The ENGINEER will provide a schedule of selected colors within 30 working days after approval of materials and equipment, and after receiving samples of the manufacturers' standard colors for those items requiring OWNER's selection.
- M. Certificates of Compliance:

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1. A Certificate of Compliance shall be furnished for materials specified to a recognized standard or code prior to the use of any such materials in the work.
2. The ENGINEER may permit the use of certain materials or assemblies prior to sampling and testing if accompanied by a Certificate of Compliance.
3. The certificate shall be signed by the manufacturer of the material or the manufacturer of assembled materials and shall state that the materials involved comply in all respects with the requirements of the Specifications.
4. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the certificate.

N. Quality Assurance

1. Source limitations: To the greatest extent possible for each unit of work, the CONTRACTOR shall provide products, materials, or equipment of a singular generic kind from a single source.
2. Compatibility of options:
 - a. Where more than one choice is available as options for CONTRACTOR's selection of a product, material, or equipment, the CONTRACTOR shall select an option which is compatible with other products, materials, or equipment already selected.
 - b. Compatibility is a basic general requirement of product/material selections.

O. Review by ENGINEER

1. After review by the ENGINEER of each of the CONTRACTOR's submissions, the material will be returned to the CONTRACTOR with actions defined as follows:
 - a. NO EXCEPTIONS TAKEN: Accepted subject to its compatibility with further submittals and additional partial submittals for portions of the work not covered in this submittal. Does not constitute approval or deletion of specified or required items not shown in the partial submittal.
 - b. MAKE CORRECTIONS NOTED: Same as 1.a., except that minor corrections as noted shall be made by the CONTRACTOR.
 - c. REVISE AND RESUBMIT: Rejected because of major inconsistencies or errors which shall be resolved or corrected by the CONTRACTOR prior to subsequent review by the ENGINEER.
 - d. REJECTED - RESUBMIT: Submitted material does not conform to Plans and Specifications in major respect, e.g., wrong item, wrong size, model, capacity, or material.
2. Items 1 and 2 above (no resubmittal required) are considered "Favorable Review." Items 3 and 4 above (correction and resubmittal required) are considered "unfavorable review."
 - a. ENGINEER's "Favorable Review" of submittals shall be obtained prior to the fabrication, delivery and construction of items requiring submittal review.
 - b. "Favorable Review" of submittals does not constitute a Change Order to the Contract requirements.
 - c. "Favorable Review" of all submittals by ENGINEER shall apply in general design only and shall in no way relieve the Contractor from responsibility for errors or omissions contained therein.
 - d. "Favorable Review" by the ENGINEER shall not relieve the Contractor of its obligation to meet safety requirements and all other requirements of laws, nor constitute a Contract Change Order.
 - e. "Favorable Review" will not constitute acceptance of any responsibility for the accuracy, coordination, and completeness of the submittals or the items of equipment represented on the submittals.

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P. Requests for Information

1. Requests for Information about the Contract Documents shall be directed by the CONTRACTOR to the ENGINEER using a Request for Information (RFI) form as agreed to by the OWNER and the ENGINEER. Such requests shall not be transmitted directly to the ENGINEER from a Subcontractor or Supplier.
2. A separate form shall be used for each specific item for which information is required. Requests for Information for more than one item using a single RFI form will be permitted only when the items are so functionally related that expediency indicates review of the group of items as a whole.
3. The ENGINEER will reply to the CONTRACTOR's Request for Information as soon thereafter as practicable.

Q. Construction Photographs

1. Provide photographs showing the preconstruction site, construction progress, and the post-construction site.
2. Format: Photographs shall be digital format
 - a. Digital Format:
 - 1) Digital photos shall be taken with a minimum 8 mega pixel density and provided in JPG format.
 - b. Photos should be properly labeled with the following (at a minimum):
 - 1) Time and date stamped
 - 2) Photograph orientation and location
 - 3) Brief description of photo subject
3. Preconstruction and Post-Construction Photographs
 - a. Take a minimum of 72 photos of the preconstruction site and the property adjacent to the perimeter of the construction site. Particular emphasis shall be directed to utilities and structures both inside and outside the site, or as directed by OWNER.
 - b. Take a minimum of 72 photos of the post-construction site and the property adjacent to the perimeter of the site. Particular emphasis shall be directed to structures both inside and outside the plant boundary, or as indicated by OWNER.
 - c. Preconstruction and post-construction digital photo files shall be submitted on a USB flash drive accompanied by a text file that lists the file name, date photo was taken, and brief description of the photograph and location where the photograph was taken.
 - d. Preconstruction and post-construction digital photo files will be uploaded by Contractor to the project Web Based Document Control Software (PROCORE LLC).
4. Construction Progress Photographs
 - a. Take daily photos, a minimum of 30 per week, showing the process of the construction.
 - 1) Photos should be of enough quality and quantity such that the OWNER can interpret the progress of work and utilize the photographs to physically locate work items depicted.
 - 2) Photos should encompass all areas and scopes of work performed in that week.
 - 3) Daily construction progress digital photo files will be uploaded by Contractor to the project Web Based Document Control Software (PROCORE LLC) on a minimum once weekly basis within five (5) days of the Friday of the week they were taken.
 - b. Submit a minimum of 48 of the construction progress photos monthly showing the progress of construction. Locations shall be selected by the contractor to best depict the progress of the work, or as indicated by OWNER.

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- 1) Monthly digital photo files shall be submitted on a USB flash drive accompanied by a text file that lists the file name, date photo was taken, and brief description of the photograph and location where the photograph was taken.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

+ + END OF SECTION + +

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O&M MANUAL REVIEW CHECKLIST

SUBMITTAL NO. _____ SPEC. SECTION. _____ SUBJECT _____ EQUIP. ITEM _____ _____	DATED _____ REVIEW DATE _____ REVIEWER _____ SUPPLIER _____ MANUFACTURER _____
--	---

ACCEPTABLE _____ UNACCEPTABLE _____	PROJECT TITLE: _____ PROJECT NO. 17-083
--	--

DISPOSITION	ACCEPTABLE?			COMMENTS
	YES	NO	NA	
HARD-COPY O&M MANUALS				
▪ Minimum three (3) copies	_____	_____	_____	_____
▪ Three-ring binder with hard-back cover.....	_____	_____	_____	_____
▪ Cover Label and Title Page (Cover/Title Page):				
Project title and Project number	_____	_____	_____	_____
Specification section	_____	_____	_____	_____
System/Equipment names.....	_____	_____	_____	_____
Facility	_____	_____	_____	_____
Equipment number	_____	_____	_____	_____
▪ Typed table of contents.....	_____	_____	_____	_____
▪ Heavy section dividers w/numbered plastic index tabs .	_____	_____	_____	_____
▪ Sections parallel equipment specifications	_____	_____	_____	_____
▪ Pages punched for 3 ring binder (punching does not obliterate data).....	_____	_____	_____	_____
▪ Info larger than 8-1/2"x11" folded showing title block, or included in binder pockets	_____	_____	_____	_____
▪ Multiple volumes labeled "Vol. 1", "Vol. 2", etc.....	_____	_____	_____	_____
▪ Table of contents for entire set in each binder.....	_____	_____	_____	_____
ELECTRONIC O&M MANUALS				
▪ Minimum one (1) copy on USB Flash Drive	_____	_____	_____	_____
▪ Full version of O&M manual in PDF format.....	_____	_____	_____	_____
▪ PDF "Bookmarks" to label each section of manual	_____	_____	_____	_____
▪ Separate text and drawing files used to create PDF O&M manual.....	_____	_____	_____	_____

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DISPOSITION	ACCEPTABLE?			COMMENTS
	YES	NO	NA	
▪ Index on flash drive as separate file titled "index"	_____	_____	_____	_____
▪ Flash drive labeled with submittal number.....	_____	_____	_____	_____
TECHNICAL CONTENT				
▪ Equipment Summary Form (See example of required format, Figure 2-1, 2 pages, end of this Section)	_____	_____	_____	_____
▪ Diagrams and illustrations, including pump curves	_____	_____	_____	_____
▪ Detailed description of function of principal components.....	_____	_____	_____	_____
▪ Performance and nameplate data	_____	_____	_____	_____
▪ Installation instructions.....	_____	_____	_____	_____
▪ Starting procedure	_____	_____	_____	_____
▪ Proper adjustment procedure.....	_____	_____	_____	_____
▪ Test procedures	_____	_____	_____	_____
▪ Operating procedure (Normal operation and all other operating modes).....	_____	_____	_____	_____
▪ Shutdown instructions, including emergency shutdown	_____	_____	_____	_____
▪ Emergency operating instructions & troubleshooting....	_____	_____	_____	_____
▪ Safety instructions and precautions	_____	_____	_____	_____
▪ Maintenance procedures and instructions, preventative, reactive and overhaul.....	_____	_____	_____	_____
▪ Troubleshooting and corrective maintenance procedures	_____	_____	_____	_____
▪ Lubrication instructions and information	_____	_____	_____	_____
▪ List of electrical relay settings and control and alarm contact settings	_____	_____	_____	_____
▪ Electrical interconnection wiring diagrams, including control and lighting systems, panel wiring, control (ladder) diagrams, logic diagrams, loop diagrams, and interconnection diagrams	_____	_____	_____	_____
▪ Panel layout and assembly drawings	_____	_____	_____	_____
▪ Mechanical drawings	_____	_____	_____	_____
▪ Printout of all software programs and configuration files	_____	_____	_____	_____
▪ Parts list (with exploded view and associated cross-references)	_____	_____	_____	_____
▪ Recommended spare parts and special tools	_____	_____	_____	_____
▪ Factory and field test procedures and results	_____	_____	_____	_____
▪ Project specific warranty statement	_____	_____	_____	_____

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MAINTENANCE SUMMARY FORM

PROJECT: _____

EQUIPMENT LOCATION: _____

1. EQUIPMENT ITEM _____

2. MANUFACTURER _____

3. EQUIPMENT/TAG NUMBER(S) _____

4. WEIGHT OF INDIVIDUAL COMPONENTS (OVER 100 POUNDS) _____

5. NAMEPLATE DATA (hp, voltage, speed, etc.) _____

6. MANUFACTURER'S LOCAL REPRESENTATIVE _____

a. Name _____ Telephone No. _____

b. Address _____

7. MAINTENANCE REQUIREMENTS

Maintenance Operation Comments	Frequency	Lubricant (If Applicable)
List briefly each maintenance operation required and refer to specific information in manufacturer's standard maintenance manual, if applicable. (Reference to manufacturer's catalog or sales literature is not acceptable.)	List required frequency of each maintenance operation.	Refer by symbol to lubricant required.

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FIGURE 2-1

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8. LUBRICANT LIST

Reference Symbol	Shell	Exxon Mobile	Chevron Texaco	BP Amoco	Or Equal
List symbols used in No. 7 above.	List equivalent lubricants, as distributed by each manufacturer for the specific use recommended.				

9. RECOMMENDED SPARE PARTS FOR OWNER'S INVENTORY.

Part No.	Description	Unit	Quantity	Unit Cost
Note: Identify parts provided by this Contract with two asterisks.				

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FIGURE 2-1

SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.1 OBSERVATION AND SUPERVISION

- A. The ENGINEER or ENGINEER's appointed representative will review the Work and the CONTRACTOR shall provide facilities and access to the Work at all times as required to facilitate this review.
- B. Responsibility:
 - 1. The CONTRACTOR shall be solely responsible to supervise and direct the entire Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to complete the Work in accordance with the Contract Documents.
 - 2. The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, quality control, and procedures of construction and safety precautions and programs incidental thereto.
 - 3. The foregoing includes work performed by the CONTRACTOR's Subcontractors.
 - 4. The CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.
 - 5. CONTRACTOR shall be responsible for maintaining a complete hardcopy set of all project documents at the site at all times. Project documents shall include but are not limited to all drawings, specifications, submittals, requests for information (RFI), requests for change (RFC), change orders, and up to date project record drawings.
 - 6. Project documents as described above shall be onsite and available for OWNER or ENGINEER review at all times. Failure to maintain or make project documents available will result in the stoppage of work. Schedule and cost changes resulting from stoppage of work are the responsibility of the CONTRACTOR.
- C. Superintendent:
 - 1. The CONTRACTOR shall designate in writing and submit for ENGINEER's approval a technically qualified, English-speaking superintendent, who shall be onsite and responsible for the work, and who shall not be replaced without written acceptance of the ENGINEER.
 - 2. The superintendent shall be the CONTRACTOR's representative at the job site and shall have authority to act on behalf of the CONTRACTOR.
 - 3. All communications given to the superintendent shall be as binding as if given to the CONTRACTOR.
 - 4. The CONTRACTOR's superintendent shall be present at the site of the Work at all times while work is in progress. Failure to observe this requirement shall be considered as suspension of the Work by the CONTRACTOR until such time as such superintendent is again present at the site.
 - 5. CONTRACTOR's superintendent shall be responsible for maintaining a complete hardcopy set of all project documents.

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1.2 RESPONSIBILITY

- A. The CONTRACTOR is responsible for conducting all testing and inspection specifically required by the Specifications and otherwise necessary to ensure compliance with the Contract Documents.
 - 1. Approval of Testing Laboratories and Geotechnical Consultants:
 - a. All laboratory work under this contract shall be performed by a laboratory approved by the ENGINEER, whether the laboratory is employed by the CONTRACTOR, or is owned and operated by the CONTRACTOR.
 - b. The basis of approval includes the following:
 - 1) Testing laboratories performing work in connection with concrete, steel, and bituminous materials shall comply with ASTM E 329 and ASTM D 3666, respectively.
 - 2) Testing laboratories performing work not in connection with concrete, steel, bituminous materials, soils and non-destructive testing shall comply with ASTM E 548.
- B. The ENGINEER may conduct periodic independent testing and inspection to verify compliance with the Contract Documents.
- C. Retesting:
 - 1. The OWNER reserves the right to back-charge the CONTRACTOR for retesting of deficient or defective work or products upon written notification.
 - 2. Compensation for retesting on behalf of the OWNER will be made through deductions from the Progress Payments.
- D. The CONTRACTOR is responsible for correcting all defective work discovered prior to final acceptance of the Contract, despite the failure of the Inspector(s) to discover it.
- E. The OWNER shall employ a special inspector during construction on the types of work indicated in the Statement of Special Inspections in the drawings.
 - 1. OWNER's REPRESENTATIVE shall provide special inspection as identified with "BY OWNER" in the Statement of Special Inspections.
 - 2. CONTRACTOR shall provide special inspection as identified with "BY CONTRACTOR" in the Statement of Special Inspections.

1.3 TESTS AND INSPECTIONS

- A. The CONTRACTOR shall be responsible for scheduling all inspections and tests required.
 - 1. The ENGINEER shall be given a minimum 48 business hours notice prior to any inspections or tests.
- B. With the exception of the special inspections noted above to be paid for by the OWNER; the CONTRACTOR shall pay for all tests, inspections and special inspections including, but not limited to:
 - 1. Standard inspections and tests necessary to comply with laws, ordinances, rules, regulations and orders of public authorities pursuant to General Conditions.
 - 2. Concrete and CLSM compressive strength tests for trial batch mix designs.
 - 3. Tests of materials, inspections, and certifications required by the Specifications.
 - 4. Testing, adjusting, and balancing of equipment and systems required by the Specifications.
 - 5. One tension and elongation test for each 5 tons of steel or fractional part thereof for each size will be required, unless the steel can be identified by heat or melt numbers

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- and is accompanied by mill analysis and test reports. Commercial stock may be used, subject to approval of the ENGINEER.
6. Any testing performed by the CONTRACTOR for their own quality control.
 7. All compaction testing, moisture testing, field testing of CLSM for backfill placement, geotechnical observations, and all certifications necessary to comply with the specifications.
 8. Retests or re-inspections by the OWNER, if required, and tests or inspections required due to CONTRACTOR error or lack of required identifications of material.
 9. Any and all water used by the CONTRACTOR in any testing.
 10. Special Inspections as identified with "BY CONTRACTOR" in the Statement of Special Inspections in the drawings.
- C. The CONTRACTOR shall be responsible for scheduling all tests and inspections pertaining to soils which includes all items covered by 02300 EARTHWORK. CONTRACTOR shall hire a third party accredited laboratory and geotechnical consultant for approval by OWNER a minimum of 30 days in advance of using the laboratory or geotechnical consultant.
- D. Two copies of the agency or laboratory report of each test or inspection shall be provided to the ENGINEER. All tests of materials shall be made in accordance with the commonly recognized standards of national technical organizations, and such other special methods and tests as are prescribed in the Contract Documents. Hardcopies of soils testing daily reports shall be provided to the ENGINEER before close of business the day tests are completed.
- E. Along with the monthly progress pay application submittal, the CONTRACTOR shall provide to the ENGINEER a typed summary of all tests performed for the current month including test location by station or location, elevation, depth below finished grade, material tested, wet density, moisture content, dry density, maximum density curve used, and percent relative compaction. Lab test results shall also be included in the monthly report with clear description of material tested, intended use on the Project, and a statement of compliance or noncompliance with the Project requirements.
- F. Purchase Orders:
1. One copy of each of the CONTRACTOR's purchase orders for materials forming a portion of the work shall be furnished to the ENGINEER, if requested.
 2. Each such purchase order shall contain a statement that the materials included in the order are subject to inspection by the OWNER.
 3. Materials purchased locally will be inspected at the point of manufacture or supply, and materials supplied from points more than 50 miles from the job site will be inspected upon arrival at the job, except when other inspection requirements are provided for specific materials in other Sections of this Specification.
- G. Samples:
1. The CONTRACTOR shall furnish samples of materials as are required by the ENGINEER, without charge.
 2. No material shall be used until the ENGINEER has had the opportunity to test or examine such materials.
 3. Samples will be secured and tested whenever necessary to determine the quality of the material.
 4. Samples and test specimens prepared at the job site, such as concrete test cylinders, shall be taken or prepared by the ENGINEER in the presence and with the assistance of the CONTRACTOR.

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1.4 AUTHORITY AND DUTIES OF INSPECTOR

- A. Inspectors employed by the OWNER shall be authorized to inspect all work done and materials and equipment furnished to complement the CONTRACTOR furnished independent inspector.
 - 1. Such inspection may extend to all or any part of the work, and to the preparation, fabrication, or manufacture of the materials and equipment to be used.
 - 2. The Inspector will not alter or waive the provisions of the Contract Documents.
 - 3. The Inspector will keep the ENGINEER informed as to the progress of the work and the manner in which it is being done.
 - 4. The Inspector will call the CONTRACTOR's attention to nonconformance with the Contract Documents that the Inspector may have observed.
 - 5. The Inspector will not be responsible for the adequacy or correctness of the CONTRACTOR's means, methods, techniques, sequences, or procedures for construction.
 - 6. The Inspector will not approve or accept any portion of the work, issue instructions contrary to the Contract Documents, or act as foreman for the CONTRACTOR.
 - 7. The Inspector may reject defective materials, equipment, or work when it is not in compliance with the Contract Documents.
 - 8. The Inspector will not be responsible for:
 - a. The CONTRACTOR's quality control program.
 - b. The CONTRACTOR's safety program.
 - c. Coordinating the work or activities of the CONTRACTOR or their Subcontractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

+ + END OF SECTION + +

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SECTION 01420

REFERENCE STANDARDS AND ABBREVIATIONS

PART 1 - GENERAL

1.1 REFERENCE STANDARDS

- A. The standards referred to, except as modified, shall have full force and effect as though printed in this Specification, and shall be the latest edition or revision thereof in effect on the bid opening date, unless a particular edition or issue is indicated. Copies of these standards are not available from the OWNER.
- B. The ENGINEER will furnish, upon request, information as to how copies may be obtained.
- C. Abbreviations and terms, or pronouns in place of them, shall be interpreted as follows:

AAMA:	Architectural Aluminum Manufacturer's Association
AAN:	American Association of Nurserymen
AAR:	Association of American Railroads
AASHTO:	American Association of State Highway and Transportation Officials, Standard Specifications
AATCC:	American Association of Textile Chemists and Colorists
ACI:	American Concrete Institute, Standards
AFBMA:	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA:	American Gas Association
AGC:	Associated General Contractors
AGMA:	American Gear Manufacturer's Association
AHAM:	Association of Home Appliance Manufacturer's
AI:	The Asphalt Institute
AIA:	American Institute of Architects
AISC:	American Institute of Steel Construction, Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings, and the AISC Code of Standard Practice
AISI:	American Iron and Steel Institute
AITC:	American Institute of Timber Construction
AMCA:	Air Moving and Conditioning Association, Standards
ANS:	American Nuclear Society
ANSI:	American National Standards Institute
APA:	American Plywood Association
API:	American Petroleum Institute
APWA:	American Public Works Association, Standard Specifications for Public Works Construction
ASA:	Acoustical Society of America
ASAE:	American Society of Agriculture Engineers
ASCE:	American Society of Civil Engineers
ASHRAE:	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASLE:	American Society of Lubricating Engineers
ASME:	American Society of Mechanical Engineers

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ASQC:	American Society of Quality Control
ASSE:	American Society of Sanitary Engineers
ASTM:	American Society for Testing and Materials, Standards
AWG:	American Wire Gauge
AWPA:	American Wood-Preservers' Association, Standards
AWPI:	American Wood Preservers Institute
AWS:	American Welding Society
AWWA:	American Water Works Association, Standards
BBC:	Basic Building Code, Building Officials and Code Administrators International
BHMA:	Builders Hardware Manufacturer's Association
CAL/OSHA:	California/Occupational Safety and Health Administration, Standards
CBM:	Certified Ballast Manufacturer's
CCR:	California Code of Regulations
CEMA:	Conveyors Equipment Manufacturer's Association
CGA:	Compressed Gas Association
CISPI:	Cast Iron Soil Pipe Institute, Standards
CLPCA:	California Lathing and Plastering Contractors Association
CLFMI:	Chain Link Fence Manufacturer's Institute
CMAA:	Crane Manufacturers' Association of America
CMA:	Concrete Masonry Association
CORDCS:	City of Roseville Design & Construction Standards
CORPCS:	City of Roseville Process Control Standards
CRSI:	Concrete Reinforcing Steel Institute, Standards
CSS:	CalTrans Standard Specifications, State of California, Department of Transportation
DCDMA:	Diamond Core Drill Manufacturer's Association
DOSH:	Division of Occupational Safety and Health, State of California, Department of Industrial Relations
EIA:	Electronic Industries Association
ETL:	Electrical Test Laboratories
FED/OSHA:	Federal Occupational Safety and Health Administration, Standards
FM:	Factory Mutual
ICBO:	International Conference of Building Officials
ICEA:	Insulated Cable Engineers Association
IEEE:	Institute of Electrical and Electronic Engineers
IES:	Illuminating Engineering Society
IME:	Institute of Makers of Explosives
IP:	Institute of Petroleum (London)
IPC:	Institute of Printed Circuits
IPCEA:	Insulated Power Cable Engineers Association
ISA:	Instrument Society of America
ISO:	International Organization of Standardization
ITE:	Institute of Traffic Engineers
MBMA:	Metal Building Manufacturer's Association
MPTA:	Mechanical Power Transmission of Association
MTI:	Marine Testing Institute
MSS:	Manufacturers Standardization Society
NAAM:	National Association of Architectural Metal Manufacturers

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NACE:	National Association of Corrosion Engineers, Standards
NBS:	National Bureau of Standards
NCCLS:	National Committee for Clinical Laboratory Standards
NEC:	National Electric Code
NEMA:	National Electrical Manufacturers' Association, Standards
NFPA:	National Fire Protection Association
NFPA:	National Forest Products Association
NGLI:	National Lubricating Grease Institute
NMA:	National Microfilm Association
NWMA:	National Woodwork Manufacturers Association
OSHA:	Occupational Safety and Health Administration
PCA:	Portland Cement Association
PCI:	Prestressed Concrete Institute
RIS:	Redwood Inspection Service, Standard Specifications
RVIA:	Recreational Vehicle Industry Association
RWMA:	Resistance Welder Manufacturer's Association
SAE:	Society of Automotive Engineers
SAMA:	Scientific Apparatus Makers Association
SDI:	Steel Door Institute
SIS:	Swedish Standards Association
SMA:	Screen Manufacturer's Association
SMACNA:	Sheet Metal and Air Conditioning Contractors National Association
SPR:	Simplified Practice Recommendation
SSBC:	Southern Standard Building Code, Southern Building Code Congress
SSPC:	Steel Structures Painting Council, Specifications
SSPWC:	Standard Specifications for Public Works Construction
TAPPI:	Technical Association of the Pulp and Paper Industry
TFI:	The Fertilizer Institute
UBC:	Uniform Building Code of the International Conference of Building Officials
UPC:	Uniform Plumbing Code
UL:	Underwriters Laboratories
WCLA:	West Coast Lumbermen's Association, Standard Grading and Dressing Rules
WCLIB:	West Coast Lumber Inspection Bureau
WCRSI:	Western Concrete Reinforcing Steel Institute
WIC:	Woodwork Institute of California
WRI:	Wire Reinforcement Institute, Inc.
WWPA:	Western Wood Products Association

1.2 OTHER ABBREVIATIONS

- A. Other common abbreviations that may be found in the Specifications are, but may not be limited to:

acrylonitrile butadiene styrene	ABS	ampere average	A, amp avg
alternating current	a-c, AC	biochemical oxygen demand	BOD
American wire gauge	AWG	brake horsepower	bhp
ante meridiem	am		

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British thermal unit	Btu	inch	in
Centigrade	C	inch-pound	in-lb
chlorinated polyvinyl chloride	CPVC	input/output	I/O
company	Co	inside diameter	ID
cubic inch	cu in, in ³	instrumentation and control	I&C
cubic foot	cu ft, CF, ft ³		
cubic yard	cu yd, CY, yd ³	kilovolt	kV
cubic feet per minute	cfm, ft ³ /min	kilovolt-ampere	kVA
cubic feet per second	cfs, ft ³ /s	kilowatt	kW
		kilowatt-hour	kW hr
decibel	dB		
decibels, A-weighted	dBA	length	L
degree Centigrade (Celsius)	°C, C	length to least radius of gyration	L/r
degree Fahrenheit	°F, F	light emitting diode	LED
diameter	diam, Ø	linear	lin
direct current	d-c, DC	linear foot	lin ft
dollars	\$	liter	l
ductile iron	DI		
each	ea, @	manhole	MH
efficiency	eff	maximum	max
elevation	El., Elev	mean sea level	MSL
ethylene propylene rubber	EPDM	mercury	Hg
exhaust fan	EF	miles per hour	mph
		milli-amp	mA
Fahrenheit	F	milliamperere DC	mAdc
feet	ft	milligram	mg
feet per hour	fph, ft/h	milligrams per liter	mg/l
feet per minute	fpm, ft/min	milliliter	ml
feet per second	fps, ft/s	millimeter	mm
fiberglass reinforced plastic	FRP	million gallon	mil
figure	Fig.	million gallons per day	mgd
flange	flg	minimum	min
foot-pound	ft-lb	motor control center	MCC
gallon	gal	net positive suction head available	NPSHA
gallons per hour	gph, gal/hr	net positive suction head required	NPSHR
gallons per minute	gpm, gal/min	number	No., #
gallons per second	gps, gal/s	National Pipe Thread	NPT
gram	g		
ground fault current interrupter	GFCI	Operation and Maintenance	O&M
		ounce	oz
hand/off/automatic heating, ventilating, and air conditioning	HOA HVAC	outside diameter	OD
Hertz	Hz		
hour	hr	parts per million	ppm
horsepower	hp	post meridiem	pm
		plus or minus	+/-, ±
		polytetrafluorethylene	PTFE

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polyvinyl chloride	PVC	stainless steel	SS
pound	lb	standard	std
pounds per square foot	psf, lb/ft ²	standard cubic feet	
pounds per square inch	psi, lb/in ²	per minute	scfm
pounds per square inch absolute	psia	symmetrical	sym.
pounds per square inch gage	psig	total dynamic head	tdh
Process and Instrumentation Diagrams	P&ID	totally-enclosed, fan- cooled	TEFC
random access memory	RAM	totally-enclosed, non- ventilated	TENV
reinforced concrete pipe	RCP	twisted shielded	TWSH
reinforced concrete cylinder pipe	RCCP	ultraviolet	UV
relative humidity	RH	United States	US, USA
revolutions per minute	rpm	variable frequency drive	VFD, AFD
second	sec, s	volt	V
specific gravity	sp gr	volts alternating current	VAC
square foot	sq ft, SF, ft ²	volts direct current	VDC
square inch	sq in, in ²	water to cement	W/C, wc
square yard	sq yd, SY, yd ²	water column	W.C.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES AND UTILITIES

PART 1 - GENERAL

1.1 CONTRACTOR'S STAGING AREA AND WORK ACCESS PLAN

- A. The CONTRACTOR shall limit the location of the storage of equipment and materials to the staging area(s) designated on the Drawings and as directed by the ENGINEER.
- B. The CONTRACTOR shall make their own arrangements for additional space that may be required and shall bear all associated costs.
- C. Work Access Plan: The CONTRACTOR shall submit a work access plan showing the planned access route for deliveries of supplies and mobilization of work force for ENGINEER's approval prior to mobilization.
- D. On-Site Project Office:
 - 1. The CONTRACTOR shall provide and maintain an on-site contractor construction office for CONTRACTOR's management staff. Hardcopies of all the Contract Documents, project progress records, submittal(s), RFI(S), RFC(s) record drawings, project schedule, shop drawings, SWPPP documentation, and all other relevant documents shall be stored, organized, and maintained in Contractor's management staff onsite project office. CONTRACTOR's project office and project documents shall be accessible to the OWNER and ENGINEER during normal working hours.
 - 2. The CONTRACTOR shall make their own arrangements for any additional space that may be required to maintain on-site project offices and bear all associated costs.
 - 3. Contractor shall provide an ENGINEER's Field Office as described herein and bear all associated costs.
 - 4. The CONTRACTOR shall make available for use On-Site Project Offices prior to the start of any work at Site, relocate these facilities as necessary to accommodate project phasing, and maintain these in good working order on-site for a minimum of 7 days after final acceptance of the work.
- E. Temporary Facilities Plan:
 - 1. The CONTRACTOR shall submit to the ENGINEER for approval, as part of the mobilization effort, the proposed plan and layout for all temporary offices, sanitary facilities, temporary construction roads, storage buildings, storage yards, temporary water service and distribution, temporary telephone and temporary power service and distribution.
 - 2. The plan shall show all temporary fencing and gates and all proposed access to the work areas.
 - 3. Prior to the removal of existing fence, the CONTRACTOR shall provide temporary security fencing at least equal to the existing chain link and barbed wire fencing to protect the existing facilities and structures.
- F. Access Roads:
 - 1. The CONTRACTOR shall "winterize" and maintain all access roads at all times to provide a driving surface satisfactory for 2-wheel drive low clearance vehicular traffic.
 - 2. The roads shall be gravel surfaced, smooth, and free from humps and depressions.
 - 3. Contractor shall perform dust control on all access roads.

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4. All costs of complying with this requirement shall be included in the GMP.

1.2 STORAGE - GENERAL

- A. The CONTRACTOR shall provide any temporary storage required for the protection of equipment and materials as recommended by manufacturers of such materials.

1.3 STORAGE BUILDINGS

- A. The CONTRACTOR shall erect or provide temporary storage buildings of the various sizes as required for the protection of mechanical and electrical equipment and materials as recommended by manufacturers of such equipment and materials.
- B. The buildings shall be provided with such environmental control systems that meet recommendations of manufacturers of all equipment and materials stored in the buildings.
- C. The buildings shall be of sufficient size and so arranged or partitioned to provide security for their contents and provide ready access for inspection and inventory.
- D. At or near the completion of the work, and as directed by the ENGINEER, the temporary storage buildings shall be dismantled, removed from the site, and remain the property of the CONTRACTOR.
- E. Combustible materials (paints, solvents, fuels, etc.) shall be safely stored and separated in accordance with the manufacturer's requirements and in compliance with hazardous material storage requirements. CONTRACTOR shall be responsible for providing proper storage buildings for combustible materials.

1.4 STORAGE YARDS

- A. The CONTRACTOR shall provide temporary storage yards as required for the storage of materials that are not subject to damage by weather conditions.
- B. Materials such as pipe, reinforcing and structural steel, shall be stored on pallets or racks, off the ground, and stored in a manner to allow ready access for inspection and inventory.
- C. Temporary gravel surfacing of the storage yards shall meet with the approval of the ENGINEER.

1.5 PARKING AREAS

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, OWNER's operations, or construction operations.

1.6 VEHICULAR TRAFFIC

- A. Comply with Laws and Regulations regarding closing or restricting use of public streets or highways. No public or private road shall be closed, except by written permission of proper authority. Assure the least possible obstruction to traffic and normal commercial pursuits.

- B. Conduct the Work to interfere as little as possible with public travel, whether vehicular or pedestrian.
- C. Whenever it is necessary to cross, close, or obstruct roads, driveways, and walks, whether public or private, provide and maintain suitable and safe bridges, detours, or other temporary expedients for accommodation of public and private travel.

1.7 DELIVERY-STORAGE-HANDLING

A. General:

- 1. The CONTRACTOR shall deliver, handle, and store materials and equipment in accordance with supplier's written recommendations and by methods and means which will prevent damage, deterioration, and loss including theft.
- 2. Delivery schedules shall be controlled to minimize long-term storage at the site and overcrowding of construction spaces.
- 3. In particular, the CONTRACTOR shall provide delivery/ installation coordination to ensure minimum holding or storage for material or equipment recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other sources of loss.

B. Transportation and Handling:

- 1. Materials and equipment shall be transported by methods to avoid damage and shall be delivered in dry, undamaged condition in supplier's unopened containers or packaging.
- 2. The CONTRACTOR shall provide equipment and personnel to handle the materials, and equipment by methods that will prevent soiling and damage.
- 3. The CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging packaging, and surrounding surfaces.

C. Storage and Protection:

- 1. Materials and equipment shall be stored in accordance with supplier's written instructions, with seals and labels intact and legible. Exposed metal surfaces of valves, fittings and similar materials shall be coated with grease in accordance with manufacturer's recommendations to prevent corrosion. Sensitive materials and equipment shall be stored in weather-tight enclosures and temperature and humidity ranges shall be maintained within tolerances required by supplier's written instructions.
- 2. For exterior storage of fabricated materials, they shall be placed on sloped support above ground. Materials or equipment subject to deterioration shall be covered with impervious sheet covering; ventilation shall be provided to avoid condensation.
- 3. Loose granular materials shall be stored on solid surfaces in a well-drained area and shall be prevented from mixing with foreign matter.
- 4. Inspection:
 - a. Storage shall be arranged to provide access for inspection.
 - b. The CONTRACTOR shall periodically inspect to assure materials and equipment are undamaged and are maintained under required conditions.
- 5. Storage shall be arranged in a manner to provide access for maintenance of stored items.

1.8 PROJECT SECURITY

- A. The CONTRACTOR shall make adequate provision for the protection of the work area against fire, theft and vandalism, and for the protection of the public and OWNER personnel against exposure to injury, and for the security of any off-site storage areas.
- B. All costs for this protection shall be included within the CONTRACTOR's bid.

1.9 TEMPORARY UTILITIES

- A. The CONTRACTOR shall provide and pay for all necessary temporary telephones, fuel, power, potable water, sanitary, and proper toilet accommodations. CONTRACTOR shall not use OWNER-owned utilities except for potable water. OWNER will work with CONTRACTOR to provide potable water free of charge. The CONTRACTOR, however, shall be required to furnish and lay such pipe and/or provide such other means as may be necessary and/or incidental to the delivery of water at such point or points of use and at such pressure as may be necessary. No additional compensation will be made therefore. Contractor shall not use quick acting valves which might create surges.
- B. The temporary facilities to be provided by the CONTRACTOR as described above shall conform to all requirements in regard to operation, safety, and fire hazards of State and local authorities and of Underwriters.
- C. CONTRACTOR shall return the site and facilities to their original "pre-construction" condition, unless otherwise specified in the Contract Documents, at the completion of the project.

1.10 SOUND CONTROL

- A. The CONTRACTOR shall comply with all local sound control and noise level rules, regulations and ordinances which apply to any work performed pursuant to the contract.
- B. Each internal combustion engine, used for any purpose on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer, so as to produce a maximum noise level of 85 dBA at 5 feet.
- C. No internal combustion engine shall be operated on the project without said muffler.
- D. Special Precautions for Inhabited Areas:
 - 1. In inhabited areas, particularly residential, operations shall be performed in a manner to minimize unnecessary noise generation.
 - 2. In residential areas, special measures shall be taken to suppress noise generated by repair and service activities during the night hours.

1.11 DUST/AIR POLLUTION CONTROL

- A. The CONTRACTOR shall comply with all Federal, State and local regulatory requirements with respect to air pollution prevention.
- B. The CONTRACTOR shall take whatever steps, procedures, or means as are required to prevent dust conditions being caused by operations in connection with the execution of

the Work; and on any road which the CONTRACTOR or any of their Subcontractors are using, excavation or fill areas, demolition operations, or other activities.

- C. Control shall be by sprinkling, use of dust palliatives, modification of operations, or any other means acceptable to agencies having jurisdiction.
- D. Damage to personal property, etc., resulting from the CONTRACTOR's construction operations shall be borne by the CONTRACTOR at no cost to the OWNER.
- E. The CONTRACTOR shall keep the streets and work area clean at all times by means of mechanical sweepers or hand sweeping. Water will be used for dust control only, and not for cleaning streets.
- F. Burning of waste, rubbish, or other debris will not be permitted on or adjacent to site.

1.12 WASTE DISPOSAL

- A. The CONTRACTOR shall dispose of surplus materials, waste products, and debris and shall make necessary arrangements for such disposal. The CONTRACTOR shall obtain written permission from property owner prior to disposing surplus materials, waste products, or debris on private property.
- B. All waste disposal shall be done in accordance with applicable laws and regulations.
- C. Landfill Disposal:
 - 1. If the CONTRACTOR proposes to dispose of construction debris, trench spoils, excavation spoils, etc., at a landfill, the CONTRACTOR shall be responsible to provide and pay for all permits and analyses required by the landfill.
 - 2. If the analyses determine that the material is hazardous, then an equitable adjustment of the Contract for the cost of hazardous waste disposal will be made in accordance with the General Conditions, and the following:
 - a. Time extension or contract costs will not be granted for delays that could have been avoided by the CONTRACTOR redirecting their forces and equipment to perform other work on the contract.
- D. Ditches, washes, or drainageways shall not be filled.
- E. Disposal operations shall not create unsightly or unsanitary nuisances.
- F. The CONTRACTOR shall maintain the disposal site in a condition of good appearance and safety during the construction period.
- G. Prior to final acceptance of the work, the CONTRACTOR shall have completed the leveling and cleanup of the disposal site.

1.13 CLEAN UP

- A. Throughout the period of construction, the CONTRACTOR shall keep the work site free and clean of all rubbish and debris, and shall promptly remove from the site, or from property adjacent to the site of the work, all unused and rejected materials, surplus earth, concrete, plaster, and debris.

- B. Upon completion of the work, and prior to final acceptance, the CONTRACTOR shall remove from the vicinity of the work all plant, surplus material, and equipment belonging to the CONTRACTOR or used under their direction during construction.

1.14 TEMPORARY ENCLOSURES

- A. When sandblasting, spray painting, spraying of insulation, or other activities inconveniencing or dangerous to property or the health of employees, the public or construction workers, are in progress, the area of activity shall be enclosed adequately to contain the dust, over spray, or other hazard.
- B. In the event there are no permanent enclosures of the area, or such enclosures are incomplete or inadequate, the CONTRACTOR shall provide suitable temporary enclosures as required by the ENGINEER to meet field conditions in accordance with the recommendations of the owner-furnished equipment supplier (if applicable) and the CONTRACTOR's equipment supplier requirements.
- C. Said temporary or permanent enclosures shall be adequately ventilated to ensure the safety of the workers.

1.15 DRAINAGE

- A. The CONTRACTOR shall take all necessary actions as required to meet discharge requirements of the State of California and other pertinent local ordinances and regulations pertaining to dewatering and/or site drainage discharged into storm drains and creeks. This may include, but may not be limited to, the use of retention basins and silt basins to settle most of the solids prior to discharge.
- B. In excavation, fill, and grading operations, care shall be taken to disturb the pre-existing drainage pattern as little as possible.
- C. Particular care shall be taken not to direct drainage water onto private property or into streets or drainageways inadequate for the increased flow.
- D. Drainage means shall be provided to protect the work.

1.16 TEMPORARY LIGHTING

- A. The CONTRACTOR shall provide temporary lighting in all work areas sufficient to maintain a lighting level during working hours not less than the lighting level required by OSHA standards.

1.17 CONSTRUCTION FACILITIES

- A. Construction hoists, elevators, scaffolds, stages, shoring, and similar temporary facilities shall be of ample size and capacity to adequately support and move the loads to which they will be subjected. Railings, enclosures, safety devices, and controls required by law or for adequate protection of life and property shall be provided.
- B. Temporary supports shall be designed with an adequate safety factor to assure adequate load bearing capability. Whenever required by safety regulations, the CONTRACTOR shall submit design calculations for staging and shoring prior to application of loads.

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1.18 REMOVAL OF TEMPORARY FACILITIES AND UTILITIES

- A. At such time or times as any temporary construction facilities and utilities are no longer required for the work, the CONTRACTOR shall notify the ENGINEER of their intent and schedule for removal of the temporary facilities and utilities, and obtain the ENGINEER's approval before removing the same.
 - 1. Unless otherwise approved by OWNER, CONTRACTOR'S office and ENGINEER'S field offices shall remain on the project site a minimum of 7 days after OWNER's final acceptance of the work.
- B. As approved, the CONTRACTOR shall remove the temporary facilities and utilities from the site as CONTRACTOR's property and leave the site in such condition as specified, as directed by the ENGINEER, and/or as shown on the Drawings.
- C. In unfinished areas, such as planted medians, the condition of the site shall be left in a condition that will restore original drainage, evenly graded, seeded or planted as necessary, and left with an appearance equal to, or better than original.

PART 2 - PRODUCTS (NOT USED)

2.1 ENGINEER'S FIELD OFFICES

- A. Furnish and maintain equipment specified for exclusive use of OWNER and its representatives.
- B. Ownership of equipment furnished under this article will remain, unless otherwise specified, that of CONTRACTOR.
- C. Equipment furnished shall be new or like new in appearance and function.
- D. Minimum Features:
 - 1. Integrated sanitary facilities including toilet and wash basin with hot and cold running water.
 - 2. 110-volt lighting and wall plugs.
 - 3. Fluorescent ceiling lights.
 - 4. Electric heating and self-contained air conditioning unit properly sized for Project locale and conditions. Provide ample electric power to operate installed systems.
 - 5. Railed stairways and landings at entrances.
 - 6. Sign on entrance door reading "Water Works Engineers", letter height 4 inches minimum.
 - 7. Exterior Door(s):
 - a. Number: Two.
 - b. Type: Solid core.
 - c. Lock(s): Cylindrical; keyed alike.
 - 8. Number of Windows: Four.
 - 9. Minimum Interior Height: 8 feet
- E. Floor Space: Minimum 425 square feet.
- F. Rooms:
 - 1. Two, with minimum private office floor space of 80 square feet.
 - 2. One restroom.

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3. Remainder of space configured for open meeting or storage space.

G. Security guard screens on all windows.

H. Provide and Maintain the Following in The Quantity Shown:

Office Equipment-General:

1. Bottled Water Service: One.
2. Paper Cup Dispenser with Cups: One .
3. Paper Towel Dispenser with Towels: One.
4. Desk: Two , steel, 30 inches by 60 inches.
5. Swivel desk Chair: Two .
6. Folding Table: Two, 36 inches by 72 inches.
7. Steel Folding Chairs: Eight.
8. Four Drawer Steel File with Lock and Key: Two , legal width.
9. Drawing Rack with Drawing Hangers: Two.
10. Bookcase: Two , 36 inches wide by 48 inches high.
11. Wastepaper Basket: Two .
12. Clothes Rack: One.
13. First-Aid Kit: One.
14. Carbon Dioxide (10-Pound) Fire Extinguisher: One.

2.2 PROJECT SIGN

- A. Provide and maintain two, 8-foot wide by 4-foot high signs constructed of ¾-inch exterior high density overlaid plywood. Sign shall bear name of Project, OWNER, CONTRACTOR, ENGINEER, and other participating agencies. Lettering shall be blue applied on a white background by an experienced sign painter. Paint shall be exterior type enamel. Information to be included will be provided by OWNER. Signs to be located as directed by OWNER. Once sign information is provided by OWNER, CONTRACTOR shall submit proposed sign layout, color, materials, etc. for ENGINEER'S approval prior to mobilization. Signs shall be installed on the project site as directed by OWNER within 7 days of CONTRACTOR starting mobilization.

PART 3 - EXECUTION (NOT USED)

3.1 ENGINEER'S FIELD OFFICE

- A. Make available for ENGINEER'S use prior to the start of any work at Site. ENGINEER'S field office shall remain on the site for a minimum of 7 days after final acceptance of the work.
- B. Locate on common site with CONTRACTOR'S construction offices; level, block, tie down, skirt, provide stairways, and relocate when necessary and approved. Construct on proper foundations, provide proper surface drainage and connections for utility services.
- C. Provide minimum 100 square feet of aggregate base, minimum depth of 4 inches, at each entrance.
- D. Raise grade under field office, as necessary, to an elevation adequate to avoid flooding.
- E. Provide sanitary facilities in compliance with state and local health authorities.

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- F. Provide all necessary hookups, piping, storage tanks, etc. as required to provide fully functioning restroom facilities in ENGINEER's field office.
- G. Exterior Door Keys: Furnish two sets of keys.
- H. CONTRACTOR shall maintain in good repair and appearance including weekly cleaning service and replenishment of field office supplies.

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SECTION 01505

MOBILIZATION

PART 1 - GENERAL

1.1 GENERAL

- A. Mobilization shall include the obtaining of all bonds, insurance, and licenses; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; all as required for the proper performance and completion of the work.
- B. Mobilization shall include but not be limited to the following principal items:
 - 1. Moving on to the site of all CONTRACTOR's plant and equipment.
 - 2. Installing temporary construction power, wiring, and lighting facilities.
 - 3. Establishing fire protection system.
 - 4. Developing construction water supply.
 - 5. Furnishing the work access plan as specified in Section 01500, Temporary Construction Facilities and Utilities.
 - 6. Providing all on-site CONTRACTOR communication facilities, including telephones, and radio pagers and any radio communications facilities required for the CONTRACTOR to coordinate their forces.
 - 7. Providing on-site sanitary facilities and potable water facilities as specified in Section 01500, Temporary Construction Facilities and Utilities.
 - 8. Arranging for and erection of the CONTRACTOR's work and storage yard, including site security.
 - 9. Posting all EPA and OSHA required notices and establishment of safety programs.
 - 10. Post all required labor and EEOE notices.
 - 11. Have the CONTRACTOR's superintendent at the job site full time.
 - 12. Submittal and OWNER acceptance of the Construction Schedule.
 - 13. Establishing site security, lighting, fencing, and signing.
 - 14. Obtaining all bonds, insurance and licenses.
 - 15. Providing an organization chart of the project and for the CONTRACTOR's firm. The project chart shall include the name, title and responsibilities of each position which is involved in the work.
 - 16. Other mobilization items approved by the ENGINEER required to support the complete work (e.g., Health and Safety Plans for Hazardous Waste).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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SECTION 01610

GENERAL PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE

- A. All products furnished and installed under this contract shall conform to the general stipulations set forth in this Section except as otherwise specified in other Sections.

1.2 COORDINATION

- A. The CONTRACTOR shall coordinate all details of the products and equipment with other related parts of the work, including verification that all structures, piping, wiring, and equipment components are compatible. The CONTRACTOR shall be responsible for all structural and other alterations in the work required to accommodate products or equipment differing in dimensions or other characteristics from that contemplated in the Contract Drawings or Specifications.

1.3 DESIGN REQUIREMENTS

- A. Where CONTRACTOR design is specified, design and installation of systems, equipment, and components, including supports and anchorage, shall be in accordance with provisions of 2016 edition of the California Building Code (CBC).
 1. Basic Wind Speed: 115 mph, Exposure C.
 2. Seismic:
 - a. S_s (maximum short-term spectral response acceleration) = 0.538
 - b. S_1 (maximum 1-second spectral response acceleration) = 0.260
 - c. S_{DS} (design short-term spectral response acceleration) = 0.491
 - d. S_{D1} (design 1-second spectral response acceleration) = 0.326
 - e. I_e (Seismic Importance Factor) = 1.5
 - f. Risk Category = IV
 - g. Seismic Use Group = III
 3. Maximum Rain Intensity: 3-inches/hour
- B. Proof of Compliance:
 1. Structural integrity and anchorage shall be certified by an approved calculation that demonstrates the adequacy of the anchorage system for seismic forces. This calculation may be based on principles of structural analysis and engineering mechanics, or based on similarity to approved shake-table tests.
 2. The CONTRACTOR shall submit for review and approval test data or calculations certified by a Civil or Structural Engineer registered in the State of California to show compliance with the above requirements.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Altitude: Provide materials and equipment suitable for installation and operation under rated conditions at 100 feet above sea level.

- B. Provide equipment and devices installed outdoors or in unheated enclosures capable of continuous operation within an ambient temperature range of 15 degrees F to 120 degrees F.

1.5 WORKMANSHIP AND MATERIALS

- A. The CONTRACTOR shall guarantee all equipment against faulty or inadequate design, improper assembly or erection, defective workmanship or materials, and leakage, breakage, or other failure. Materials shall be suitable for service conditions.
- B. All equipment shall be designed, fabricated, and assembled in accordance with recognized and acceptable engineering and shop practice. Individual parts shall be manufactured to standard sizes and gages so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall not have been in service at any time prior to delivery, except as required by tests.
- C. Except where otherwise specified, structural and miscellaneous fabricated steel used in equipment shall conform to AISC standards. All structural members shall be designed for shock or vibratory loads. Unless otherwise specified, all steel which will be submerged, all or in part, during normal operation of the equipment shall be at least 1/4 inch thick.
- D. Except where otherwise specified, all metal which will be exposed to weather, submerged or otherwise exposed to moisture shall be either non-ferrous or stainless steel, as the application may require.

1.6 LUBRICATION

- A. Equipment shall be adequately lubricated by systems which require attention no more frequently than weekly during continuous operation. Lubrication systems shall not require attention during startup or shutdown and shall not waste lubricants.
- B. Lubricants of the type recommended by the equipment manufacturer shall be provided in sufficient quantity to fill all lubricant reservoirs and to replace all consumption during testing, startup, and operation prior to acceptance of equipment by OWNER. Unless otherwise specified or permitted, the use of synthetic lubricants will not be acceptable.
- C. Lubrication facilities shall be convenient and accessible. Oil drains and fill openings shall be easily accessible from the normal operating area or platform. Drains shall allow for convenient collection of waste oil in containers from the normal operating area or platform without removing the unit from its normal installed position.

1.7 ELECTRIC MOTORS

- A. Unless otherwise specified, motors furnished with equipment shall meet the following requirements:
 - 1. Designed and applied in accordance with NEMA, ANSI, IEEE, AFBMA, and NEC for the duty service imposed by the driven equipment, such as frequent starting, intermittent overload, high inertia, mounting configuration, or service environment.
 - 2. Premium efficiency rated.
 - 3. Rated for continuous duty at 40-degrees Celsius ambient, unless the application is well recognized for intermittent duty service as a standard industry practice.
 - 4. Insulated with Class F insulation and designed for a service factor of 1.15, or greater.

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5. Three phase motors used in conjunction with variable speed drives shall have Class F insulation with a Class B temperature rise at rated nameplate horsepower, and 1.15 service factor.
6. When operating at service factor load, maximum observable temperature rise of insulation and motor parts, as determined by resistance or thermometer methods, shall not exceed the NEMA allowable limits for the type of motor, the type of enclosure, and the particular application with regard to continuous or intermittent duty.
7. To ensure long motor life, nameplate horsepower, regardless of service factor, shall be at least 115 percent of the maximum load imposed by the driven equipment.
8. Designed for full voltage starting.
9. Designed to operate from an electrical system that may have a maximum of 5 percent voltage distortion per IEEE Standard 519.
10. Derated, if required, for the altitude at which the equipment is installed.
11. Clamp-type grounding terminal shall be inside motor conduit box.
12. External conduit boxes shall be oversized at least one size larger than NEMA standard.
13. Totally enclosed motors shall have a continuous moisture drain which also excludes insects.
14. Bearings shall be either oil or grease lubricated.
15. Manufacturer's standard motor may be supplied on integrally constructed, packaged assemblies such as appliances, tools, unit heaters, and similar equipment specified by model number, in which case a redesign of the unit would be required to furnish motors of other than the manufacturer's standard design. However, in all cases, totally enclosed motors are preferred and shall be furnished if offered by the manufacturer as a standard option.
16. Totally enclosed motors shall be furnished on:
 - a. Equipment for installation below grade.
 - b. Equipment operating in wet or dust-laden locations.
17. Drip-proof motors, or totally enclosed motors at the supplier's option, shall be furnished on equipment in indoor, above-grade, clean, and dry locations.
18. Explosion-proof or submersible motors shall be furnished as required by applicable codes, as specified in other Sections, or at the supplier's option.
19. Motors shall be rated and constructed as follows:
 - a. Below 1/2 hp:
 - 1) 115 volts, 60 Hz, single phase.
 - 2) Built-in manual-reset thermal protector, or integrally mounted stainless steel enclosed manual motor starter.
 - b. 1/2 hp and above:
 - 1) 460 volts, 60 Hz, 3 phase.
 - 2) Where specified or required by the drawings, motors used on 240 volt systems shall be 230 volts, 60 Hz, 3 phase.

1.8 DRIVE UNITS

- A. The nominal input horsepower rating of each gear or speed reducer shall be at least equal to the nameplate horsepower of the drive motor. Drive units shall be designed for 24 hours continuous service.
- B. Unless otherwise specified, the use of gearmotors will not be acceptable.
- C. Gear reducers:

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1. Each gear reducer shall be a totally enclosed unit with oil or grease lubricated antifriction, rolling element bearings throughout.
 2. Helical, spiral bevel, combination bevel-helical, and worm gear reducers shall have a service factor of at least 1.50 based on the nameplate horsepower of the drive motor. Shaft-mounted and flange-mounted gear reducers shall be rated AGMA Class II. Helical gear reducers shall have a gear strength rating to catalog rating of 1.5. Each gear reducer shall bear an AGMA nameplate.
 3. The thermal horsepower rating of each unit shall equal or exceed the nameplate horsepower of the drive motor. During continuous operation, the maximum sump oil temperature shall not rise more than 100°F above the ambient air temperature in the vicinity of the unit and shall not exceed 200°F.
 4. Bearings:
 - a. Each grease lubricated bearing shall be installed in a bearing housing designed to facilitate periodic regreasing of the bearing by means of a manually operated grease gun.
 - b. Each bearing housing shall be designed to evenly distribute new grease, to properly dispose of old grease, and to prevent overgreasing of the bearing.
 - c. The use of permanently sealed, grease lubricated bearings will not be acceptable.
 - d. An internal or external oil pump and appurtenances shall be provided if required to properly lubricate oil lubricated bearings.
 - e. A dipstick or sight glass arranged to permit visual inspection of lubricant level shall be provided on each unit.
 5. Gear reducers that require the removal of parts or periodic disassembly of the unit for cleaning and manual regreasing of bearings will not be acceptable.
 6. Certification shall be furnished by the gear reducer manufacturer indicating that the intended application of each unit has been reviewed in detail by the manufacturer and that the unit provided is fully compatible with the conditions of installation and service.
- D. V-belt drives:
1. Each V-belt drive shall include a sliding base or other suitable tension adjustment. V-belt drives shall have a service factor of at least 1.6 at maximum speed based on the nameplate horsepower of the drive motor.

1.9 SAFETY GUARDS

- A. All belt or chain drives, fan blades, couplings, and other moving or rotating parts shall be covered on all sides by a safety guard.
- B. Safety guards shall be fabricated from 16 USS gauge or heavier galvanized or aluminum-clad sheet steel or 1/2 inch mesh galvanized expanded metal.
- C. Each guard shall be designed for easy installation and removal.
- D. All necessary supports and accessories shall be provided for each guard. Supports and accessories, including bolts, shall be galvanized.
- E. All safety guards in outdoor locations shall be designed to prevent the entrance of rain and dripping water.

1.10 ANCHOR BOLTS

- A. Equipment suppliers shall furnish suitable anchor bolts for each item of equipment.

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- B. Anchor bolts, together with templates or setting drawings, shall be delivered sufficiently early to permit setting the anchor bolts when the structural concrete is placed.
- C. Anchor bolts shall comply with Section 05051, Anchors, Inserts and Epoxy Dowels and, unless otherwise specified, shall have a minimum diameter of 1/2-inch.
- D. Unless otherwise indicated or specified, anchor bolts for items of equipment mounted on baseplates shall be long enough to permit 1-1/2 inches of grout beneath the baseplate and to provide adequate anchorage into structural concrete.

1.11 EQUIPMENT BASES

- A. Unless otherwise indicated or specified, all equipment shall be installed on concrete bases at least 6 inches high.
- B. Cast iron or welded steel baseplates shall be provided for pumps, compressors, and other equipment.
- C. Each unit and its drive assembly shall be supported on a single baseplate of neat design.
- D. Baseplates shall have pads for anchoring all components and adequate grout holes.
- E. Baseplates for pumps shall have a means for collecting leakage and a threaded drain connection.
- F. Baseplates shall be anchored to the concrete base with suitable anchor bolts and the space beneath filled with grout as specified in Section 03600, Grout.

1.12 SPECIAL TOOLS AND ACCESSORIES

- A. Equipment requiring periodic repair and adjustment shall be furnished complete with all special tools, instruments, and accessories required for proper maintenance. Equipment requiring special devices for lifting or handling shall be furnished complete with those devices.

1.13 SHOP PAINTING

- A. Surface Protection:
 - 1. All steel and iron surfaces shall be protected by suitable paint or coatings applied in the shop.
 - 2. Surfaces that will be inaccessible after assembly shall be protected for the life of the equipment.
 - 3. Exposed surfaces shall be finished smooth, thoroughly cleaned, and filled as necessary to provide a smooth uniform base for painting.
 - 4. Electric motors, speed reducers, starters, and other self-contained or enclosed components shall be shop primed or finished with a high-grade oil-resistant enamel suitable for coating in the field with an alkyd enamel.
 - 5. Coatings shall be suitable for the environment where the equipment is installed.
- B. Shop Primer:
 - 1. Surfaces to be painted after installation shall be prepared for painting as recommended by the paint manufacturer for the intended service, and then shop painted with one or more coats of the specified primer.

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2. Unless otherwise specified, the shop primer for steel and iron surfaces shall be:
 - a. Cook "391-N-167 Barrier Coat",
 - b. Koppers "No. 10 Inhibitive Primer",
 - c. Tnemec "37H Chem-Prime HS",
 - d. Valspar "13-R-28 Chromox Primer",
 - e. Or equal.
- C. Machined, polished, and nonferrous surfaces which are not to be painted shall be coated with rust-preventive compound, Houghton "Rust Veto 344", Rust-Oleum "R-9", or equal.

1.14 PREPARATION FOR SHIPMENT

- A. All equipment shall be suitably packaged to facilitate handling and protect against damage during transit and storage. All equipment shall be boxed, crated, or otherwise completely enclosed and protected during shipment, handling, and storage. All equipment shall be protected from exposure to the elements and shall be kept thoroughly dry at all times.
- B. Painted surfaces shall be protected against impact, abrasion, discoloration, and other damage. All painted surfaces which are damaged prior to acceptance of equipment shall be repainted to the satisfaction of ENGINEER.
- C. Grease and lubricating oil shall be applied to all bearings and similar items.
- D. Each item of equipment shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment.

1.15 STORAGE

- A. Upon delivery, all equipment and material shall immediately be stored and protected until installed in the work.
- B. Pumps, motors, electrical equipment, and all equipment with antifriction or sleeve bearings shall be stored in weathertight structures maintained at a temperature above 60° F. Equipment, controls, and insulation shall be protected against moisture and water damage. All space heaters furnished in equipment shall be connected and operated continuously.
- C. Equipment and materials shall not show any pitting, rust, decay, or other deleterious effects of storage when installed in the work.

1.16 INSTALLATION AND OPERATION

- A. Equipment shall not be installed or operated except by, or with the guidance of, qualified personnel having the knowledge and experience necessary for proper results. When so specified, or when employees of the CONTRACTOR or their subcontractors are not qualified, such personnel shall be field representatives of the manufacturer of the equipment or materials being installed.
- B. Qualified field representatives shall be provided by the equipment manufacturers as required by Section 01750, Testing, Training and Startup.

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- C. All equipment installed under this Contract, including that furnished by OWNER shall be placed into successful operation according to the written instructions of the manufacturer or the instructions of the manufacturer's field representative. All required adjustments, tests, operation checks, and other startup activity shall be provided.
- D. Acceptance of work in connection with the installation of equipment furnished by others will be subject to approval of the field representative. The CONTRACTOR shall be responsible for planning, supervising, and executing the installation of work, and the approval or acceptance of ENGINEER or the field representative will not relieve the CONTRACTOR of responsibility for defective work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

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SECTION 01700

INITIAL SUPPLY OF TREATMENT CHEMICALS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Provide treatment chemicals as indicated herein.

1.2 QUALITY ASSURANCE

- A. Chemicals shall meet standards specified in this Section.

1.3 SUBMITTALS

- A. Product Data:
1. Material Safety Data Sheet (MSDS).
 2. Manufacturer's delivery and unloading information including available volumes for delivery and packaging information.
 3. Chemical supplier's certification that the chemical meets applicable standards.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Chemicals shall be delivered, stored, and handled in accordance with the Manufacturer's supplied MSDS and applicable sections of the 2003 International Fire Code.
- B. Chemicals shall be delivered to the site by manufacturer's representative with proper identification and manufacturer's name clearly visible.
- C. Chemicals shall be stored indoors, protected from damage, extreme temperature variation, and contamination.

PART 2 - PRODUCTS

2.1 TREATMENT CHEMICALS

- A. Provide the following:

Chemical Name and Formula	Form	Strength	Chemical Volume	Location	Standard
Sodium Hypochlorite	Liquid	12.5%	500 gal	Booster Pump Station	AWWA B300

PART 3 - EXECUTION (NOT USED)

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SECTION 01750

TESTING, TRAINING AND STARTUP

PART 1 - GENERAL

1.1 GENERAL

- A. Scope:
 - 1. This Section covers general equipment and system testing and startup requirements, services of the manufacturer's representatives and special coordinating services required of the CONTRACTOR that shall apply during construction and training of the OWNER's personnel for facilities operation.
 - 2. Specific testing and tracking procedures and requirements found in the Technical Specifications shall also apply.
- B. The CONTRACTOR shall inform all Subcontractors and manufacturers of the requirements herein and include the required services in their costs for the work specified in these Contract Documents. Where a minimum amount of time is stated in the Technical Specifications for manufacturers' services, any additional time required to perform the specified services shall be provided at no additional cost to the OWNER.
- C. Scheduling:
 - 1. Equipment testing and plant startup are requisite to satisfactory completion of the Contract and, therefore, shall be completed within the contract time.
 - 2. All equipment testing and plant startup activities shall be realistically allowed for and shown on the CONTRACTOR's Construction Schedule, in accordance with Section 01320, Progress Schedule.
 - 3. All equipment testing and plant startup activities shall be scheduled in conformance with the restrictions specified in Section 01130, Special Project Constraints.
- D. Equipment testing shall be satisfactorily completed prior to commencing plant startup associated with the particular equipment item or equipment package. The equipment shall not be considered ready for testing until the following conditions are satisfied:
 - 1. Manufacturer's certification of equipment installation has been accepted by the ENGINEER.
 - 2. Electrical and/or instrumentation Subcontractor certification of motor control logic has been accepted by the ENGINEER.
 - 3. Related Technical Submittals, O&M Manual and Final Shop Drawings have been accepted by the ENGINEER.
 - 4. Operator training services have been furnished by the CONTRACTOR (operational testing only).
 - 5. Testing procedures have been submitted in writing and accepted by the ENGINEER in accordance with Section 01330, Submittal Procedures. All testing procedures and results shall be submitted in writing.
- E. The requirements of plant startup specified herein shall also apply to the startup of individual treatment plant processes and facilities.
- F. Startup Plan:

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1. Not less than 3 months prior to initial equipment or system startup, the CONTRACTOR shall submit to the ENGINEER for review, a detailed Facilities Startup Plan for the associated items of equipment and/or systems.
2. The Startup Plan shall include:
 - a. A detailed sub-network of the CONTRACTOR's Construction Progress Schedule including the following activities:
 - 1) Manufacturer's Services;
 - 2) Installation Certifications;
 - 3) Operator Training;
 - 4) O&M Manual;
 - 5) Functional Testing;
 - 6) Performance Testing;
 - 7) Operational Testing;
 - 8) All other activities necessary to affect a coordinated and successful Testing, Training and Startup.
 - b. Written testing plan with proposed data logs for each item of equipment to be tested.
 - c. A discussion of any coordination required with the Owners staff and/or any system or equipment outage requirements.
 - d. The Plan shall be updated and/or revised as necessary prior to subsequent Construction Progress Meetings.
 - e. Testing shall not be scheduled earlier than 30 days after approval of the Plan.

1.2 SERVICES DURING CONSTRUCTION

A. General:

1. Manufacturer's Representative:

- a. The CONTRACTOR shall provide the services of competent and experienced technical representatives of the manufacturers of all equipment and systems furnished under the contract, for as many days as may be necessary for assembly, installation, testing assistance and operator training.
- b. Manufacturer's field representatives shall observe, instruct, guide, and direct CONTRACTOR's erection or installation procedures, or perform an installation check, as required.
- c. In each case, the CONTRACTOR shall arrange to have the manufacturer's representative revisit the job site as often as necessary until operator training is complete and testing and startup problems have been resolved to the satisfaction of the ENGINEER.
- d. This requirement applies to manufacturers of all equipment furnished (excluding manually operated valves smaller than 24 inches in size, and any other items of equipment specifically exempted by the ENGINEER in writing), whether or not specifically set forth in the Technical Specifications.
- e. The CONTRACTOR shall maintain a service record on each item of equipment and shall deliver these service records to the ENGINEER prior to acceptance of operational testing.

B. Fulfillment of Specified Minimum Services:

1. The CONTRACTOR shall obtain prior written approval from the ENGINEER for providing manufacturers' services.
2. All requests to the ENGINEER for prior approval shall (1) be in writing, (2) be submitted not less than 10 calendar days prior to the providing of the subject services, (3) state the service to be provided, and (4) state the reason(s) why the timing of the service is appropriate.

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3. Request made to the ENGINEER less than 10 calendar days prior to the manufacturers' services may not receive consideration and response prior to the times the services are provided.
 4. Visits of manufacturers and their representatives to the jobsite or training classroom without prior approval as provided herein may not act to fulfill the specified minimum man-day requirements.
- C. Certificate of Proper Installation:
1. Equipment requiring factory tests shall not be delivered to the jobsite until the CONTRACTOR submits acceptable certified test results to the ENGINEER.
 2. Equipment shall not be considered ready for functional testing until after the following certifications have been submitted and accepted by the ENGINEER.
 - a. Manufacturer Representatives:
 - 1) The CONTRACTOR shall require that each manufacturer's representative furnish to the ENGINEER a written and signed report addressed to the OWNER certifying that the equipment has been properly installed, adjusted, lubricated, is in accurate alignment, is free from any undue stress imposed by connecting piping or anchor bolts, has been operated satisfactorily under full-load conditions and is ready for full-time operation.
 - 2) For pumps, compressors, blowers, engines, motors, and other rotating or reciprocating equipment, the report shall certify that the equipment operates within the manufacturer's allowable limits for vibration.
 - 3) The report shall also certify that all controls, protective devices, instrumentation, and control panels furnished as part of the manufacturer's equipment package are properly installed and calibrated; and that the control logic for equipment startup, shutdown, sequencing, interlocks, and emergency shutdown has been tested and is properly operating.
 - 4) The CONTRACTOR shall also sign said certification.
 - 5) The CONTRACTOR shall submit "Manufacturer's Certification of Proper Installation" on the OWNER form.
 - b. Electrical and Instrumentation Subcontractor:
 - 1) The CONTRACTOR shall require that the electrical and/or instrumentation Subcontractor shall furnish a written and signed report to the ENGINEER certifying that the motor control logic for the equipment item that resides in motor control centers, control panels, control boards, microprocessors, distributed processing units, computers, and the like furnished by the electrical and/or instrumentation Subcontractor has been properly tested and calibrated.
 - 2) The report shall certify that the control logic for equipment startup, shutdown, sequencing, interlocks, and emergency shutdown has been tested and is properly operating.
 - 3) The CONTRACTOR shall also sign said certification.

1.3 STARTUP AND TESTING

- A. General:
1. The CONTRACTOR shall provide the effective coordination of all parties necessary for the successful project startup.
 2. The ENGINEER shall not be responsible to instruct the CONTRACTOR in the startup of the project, however, the ENGINEER will be available prior to and during startup to provide operational and technical support to the CONTRACTOR.

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3. The CONTRACTOR shall furnish all labor, consumables (power, water, chemicals, air, etc.) tools, equipment, instruments, and services required and incidental to completing all functional, performance and operational testing of installed equipment.
 4. The CONTRACTOR shall submit for favorable review the proposed test procedures to the ENGINEER for review at least 30 days prior to testing.
 5. After favorable review of the test procedures, the CONTRACTOR shall give the ENGINEER written notice confirming the date of testing at least five working days before the time the equipment is scheduled to be tested.
 6. All testing shall be witnessed by the ENGINEER to be considered valid.
 7. Test Reports:
 - a. CONTRACTOR shall submit written detailed results of all functional, performance and operational testing.
 - b. Upon successful completion of Operational testing all equipment installation, testing and maintenance records shall be submitted to the ENGINEER.
 - c. Said records shall be bound separately for each piece of equipment or system and shall be collected by type of record.
 8. For factory tests, written test results shall be submitted to the ENGINEER at least 10 days prior to shipment.
- B. Functional testing:
1. All items of mechanical and electrical equipment shall be functionally tested by the CONTRACTOR after installation for proper operation.
 2. A minimum of ten (10) days prior to the start of functional testing, the CONTRACTOR shall submit interconnection diagrams for the equipment and for the alarms, controls and instruments associated with the equipment. This requirement shall not relieve the CONTRACTOR of meeting any requirements in the technical specifications for earlier submittal of the interconnection diagrams.
 3. Minimum Test Requirements
 - a. The functional test of each piece of mechanical equipment shall continue for not less than eight (8) continuous hours without interruption.
 - b. The functional test shall include checking for proper rotation, alignment, speed, flows, pressure, vibration, sound level, etc. Initial equipment and system adjustment and calibrations shall be performed in the presence of and with the assistance of the manufacturer's representative.
 - c. The functional test shall include a demonstration of the proper performance of all alarms, local and remote controls, instrumentation, equipment functions, and all other electrical, mechanical and piping systems.
 - d. All parts shall operate satisfactorily in all respects, under continuous full load, and in accordance with the specified requirements, for the full duration of the eight-hour test period.
 - e. If any part of a unit shows evidence of unsatisfactory or improper operation during the eight-hour test period, correction or repairs shall be made and the full eight-hour test operation, as specified herein, shall be repeated after all parts operate satisfactorily.
- C. Performance testing:
1. Where performance testing is required by the Technical Specifications, the testing shall be supervised by the manufacturer's representative. These services shall continue until such times as the applicable equipment or system has been successfully tested for performance and has been accepted by the ENGINEER for operational testing.
 2. Performance testing shall take place after functional testing is successfully completed in accordance with Article 1.3 B.

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3. Performance testing shall demonstrate that the equipment meets all performance requirements specified.
- D. Startup/operational testing:
1. Upon successful completion of operator training and the functional, performance and leakage testing, the CONTRACTOR shall startup the plant facilities and test the equipment operation and performance by conducting a seven (7) day, continuous operational test of the completed facilities as an operational process unit to demonstrate to the ENGINEER's satisfaction that all equipment and systems required by these specifications will operate in the manner in which they are intended to perform.
 2. The OWNER will provide CONTRACTOR-trained operating personnel for the duration of the operational test. Said operation shall be conducted and under the supervision and direction of the CONTRACTOR and/or manufacturer's representative.
 3. Operational Defects:
 - a. All defects in materials or workmanship which appear during the operational test shall be immediately corrected by the CONTRACTOR.
 - b. In the event of a malfunction or deficiency that results in shutdown or partial operation of a system or process unit or results in performance that is less than that specified, the startup duration shall be repeated for that corresponding system or process unit and any other affected equipment so its proper operation and performance as required by the Contract Documents is demonstrated for a minimum of seven (7) continuous and trouble free days.
 4. If the operational test is interrupted through no fault of the CONTRACTOR, the test may resume at the earliest mutually agreeable time.
 5. No unit process or part thereof shall be placed in service until it has successfully completed operational testing.
 6. During plant startup, the CONTRACTOR shall provide the appropriate construction trades and the services of authorized Manufacturer's representatives for operational testing and as necessary, to correct faulty equipment operation.
 7. After completion of all startup/operational testing, the CONTRACTOR shall repaint, hose, scrub, clean up and otherwise return the work to a "like new" condition, prior to OWNER acceptance.

1.4 TRAINING OF OWNER PERSONNEL

- A. General:
1. Operation and maintenance training of OWNER's personnel shall be provided for mechanical, electrical, instrumentation and control equipment as listed in this Section or elsewhere in the Specifications.
 2. For the purposes of this requirement, operations training is considered to be separate from maintenance training. Instructions are to be tailored to the needs of each group.
 3. These training services shall be conducted by the manufacturer's representative and shall ensure measurable and observable means that OWNER personnel are qualified to perform equipment task requirements, including essential knowledge, skills and abilities.
 4. Training shall be conducted by competent representatives who are certified by the manufacturer to be thoroughly familiar with the subject matter as well as instructional methods.
 5. Training materials shall be submitted to the OWNER (see Paragraph 1.4 C below) for review. Acceptance of training materials is required prior to start of training.
 6. All training shall be completed prior to beginning operational testing.

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7. The OWNER shall have the right to videotape any or all training sessions, or may designate separate sessions or portions thereof for the sole purpose of videotaping.
- B. Training coordinator:
1. The CONTRACTOR shall designate and provide one or more persons to be responsible for coordinating and expediting training duties.
 2. The person or persons so designated shall be present at all training coordination meetings with the OWNER.
- C. Training schedule:
1. The CONTRACTOR's coordinator shall coordinate the training periods with OWNER's personnel and manufacturer's representatives, and shall submit a training schedule and the training materials for each piece of equipment or system for which training is to be provided.
 2. The training schedule shall be submitted not less than 21 calendar days prior to the time that the associated training is to be provided and shall be based on the then current Plan of Operation.
 3. Equipment and/or systems shall be deemed suitable for use in training upon satisfactory completion of functional testing.
 4. All training with regards to a unit process or part thereof shall be completed prior to the start of operational testing.
 5. As a minimum, training shall be provided on the following equipment and systems:
 - a. Booster Pumps
 - b. Electronic Control Valve (Altitude Valve)
 - c. Chemical Feed System
 - d. HVAC Systems
 - e. Electrical Systems
 - f. Instrumentation and Controls
 - g. Automatic Gate Operator
 - h. Irrigation System
 - i. Other systems not identified but where training would be beneficial to OWNER's staff.
 6. The CONTRACTOR shall provide distinct and separate training sessions for both operations and maintenance personnel, meeting the following criteria:
 - a. Maintenance Training:
 - 1) Maintenance training shall be provided for all items in 1.4.C.5 above.
 - 2) Maintenance training shall be scheduled on at least one day shift, Monday through Thursday.
 - 3) Training shall emphasize theory of operations, troubleshooting, and preventative maintenance and repair procedures.
 - 4) The discussion shall encompass issues relating to instrumentation, electrical, and mechanical systems.
 - b. Operations training:
 - 1) Operations training shall be provided for each piece of equipment listed in Paragraph 1.4.C.5 above.
 - 2) Operations and/or Maintenance training shall be scheduled on three consecutive day shifts, Tuesday through Thursday.
 - c. Training session schedules shall be approved by the ENGINEER.
 - d. Training shall emphasize theory of operations, startup instructions, emergency and normal shutdown instructions, lockout procedures, troubleshooting, preventative maintenance, and alarm and control logic.
 7. The CONTRACTOR shall confirm each training period a minimum of three working days prior to the schedule time.

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8. If a manufacturer's representative fails to conduct a scheduled training class, the CONTRACTOR hereby agrees to compensate the OWNER for labor costs, including overhead, for all OWNER personnel in attendance for the entire scheduled training period.
9. If the CONTRACTOR or the manufacturer's representative fails to provide training that qualifies the OWNER personnel to perform equipment task requirements, the CONTRACTOR hereby agrees to provide remedial training to ensure OWNER personnel proficiency at no additional cost to the OWNER.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 RECORD KEEPING

- A. The CONTRACTOR shall maintain as a minimum, the following records:
 1. Equipment manufacturer's shop drawings.
 2. Daily logs indicating all equipment testing and startup activities.
 3. Log and time sheets of all manufacturer's representatives performing services on the jobsite.
 4. Updated equipment testing and startup schedules.
 5. Records of system cleaning.
 6. Hydrostatic and pressure test records.
 7. Equipment alignment and vibration measurements and corrective actions.
 8. Equipment lubrication records.
 9. Insulation resistance measurements.
 10. Electrical phase, voltage and amperage measurements.
 11. Electrical breaker inspection, test, and adjustment records.
 12. Logs of abnormal circuits and lifted wires.
 13. Testing and validation of all central and alarm functions.
 14. Data sheets of all testing and calibration of instrumentation devices and control loops including documentation of set points.
 15. Equipment and system release logs (from construction to startup).
 16. Daily work reports.

3.2 GENERAL PROCEDURES

- A. The general work procedures listed below outline the work to be performed by the CONTRACTOR. Additional procedures applicable to specific equipment items are specified elsewhere.
- B. Technical assistance and support:
 1. Obtain the assistance of the appropriate construction trades and the manufacturer or vendor, as required for technical assistance during equipment installation, testing, and startup by the CONTRACTOR and for training of the OWNER's Operation and Maintenance personnel.
 2. Furnish names and telephone numbers of manufacturer's and vendor's current technical service representatives for use by the ENGINEER.
- C. Instructions:

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1. Maintain an adequate manufacturer's instruction file so that the information will be readily available during equipment testing and startup.
 2. Prior to equipment testing, finalize, and transmit to the ENGINEER the applicable technical manuals as required under Section 01330, Submittal Procedures of the Contract Specifications.
- D. Removal of rust preventives:
1. Prior to equipment testing, remove all rust preventives and oils used to protect the equipment during the construction period whenever these protective materials will be detrimental to operation or equipment maintenance.
- E. Lubricants:
1. At least 60 days prior to startup, provide a list of the manufacturer's recommended lubricants for use in the plant. All equipment lubrication shall be listed with the lubricant types and quantities recommended and approved by the equipment manufacturers.
 2. Provide the necessary lubricants for startup and the initial 60 days of operation.
 3. Flush systems and install the initial charge of all lubricants. Dispose of flushing oil in accordance with applicable regulations.
 4. The CONTRACTOR shall lubricate the equipment in accordance with the manufacturer's recommendations until the equipment is accepted by the OWNER.
 5. Maintain a lubrication record for each item of equipment. The CONTRACTOR shall submit the lubrication records to the ENGINEER prior to equipment testing.
- F. Packing and seals:
1. Install, adjust, and replace packing, mechanical seals, and accessories, as necessary, during the equipment testing and startup period.
 2. Adjust seal water and flushing water flow rates in accordance with the equipment manufacturer's recommendations.
- G. Removal of temporary bracing:
1. Prior to equipment testing, remove all temporary supports, bracing, or other foreign objects that were installed in vessels, transformers, rotating machinery, or other equipment to prevent damage during shipping, storage, and erection, and repair any damage sustained.
- H. Rotation, alignment, and vibration:
1. Prior to equipment testing, check rotating machinery for correct direction of rotation and for freedom of moving parts before connecting the driver.
 2. Prior to equipment testing, perform the cold alignment and hot alignment to the manufacturer's tolerances.
 3. Prior to equipment testing, test equipment vibration and correct any vibration in excess of the manufacturer's recommendation.
- I. Tie-ins at the contract limits:
1. Provide proper notification, preparation, and coordination for safe tie-ins and minimal interference with the plant operation.
 2. Obtain approval and make the necessary tie-ins at the unit limits as required by the Contract Documents and as approved by the ENGINEER.
 3. Prior to startup, remove the temporary blind flanges, plugs, bulkheads, seals, etc.
- J. Leak and pressure tests:

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1. Provide the ENGINEER with 3-day advance notification in writing of the schedule for non-operating field leak tests or field pressure tests on piping and field fabricated equipment, unless otherwise directed by the ENGINEER.
 2. Provide the water, air and any special media required for the test purposes.
 3. Prior to startup, conduct all leak and pressure tests in accordance with applicable codes, regulations, and the Contract Documents, and as approved by the ENGINEER. The CONTRACTOR is advised that the tests shall be witnessed by the ENGINEER, to be considered valid.
 4. Maintain a record of the leak and pressure test data and work completed.
 5. Dispose of the test media in a manner that is acceptable to and approved by the OWNER and applicable regulatory agencies.
 6. Isolate in-line equipment as necessary for protection against test pressure.
- K. Pressure/vacuum safety relief devices:
1. Prior to equipment testing, test and adjust all safety devices as recommended by the equipment manufacturer.
 2. Prior to plant startup, provide the ENGINEER with a list of all field or factory equipment settings.
- L. Flushing and chemical/mechanical cleaning:
1. Prior to equipment operation, conduct all flushing, blowing, and chemical/mechanical cleaning operations without using the permanently installed equipment.
 2. Provide any special media needed for flushing and/or cleaning purposes.
 3. Dispose of all media in a manner that is acceptable to and approved by the OWNER and the applicable regulatory agencies.
 4. All systems shall be free of trash and construction debris before initiating startup.
 5. Maintain a record of the work completed.
- M. Screens, strainers, and blind flanges:
1. Provide and install temporary strainers, screens, and blind flanges as necessary to protect the equipment and to test the equipment and pipelines.
 2. Prior to startup, remove all of the temporary blinds and temporary appurtenances.
 3. Clean the screens and strainers as required during startup.
 4. At the end of startup, clean all of the permanently installed screens and strainers.
- N. Purging/inerting:
1. Prior to startup, purge and/or passivate the facilities as specified.
 2. Install purge/inerting connections in accordance with the manufacturer's recommendations.
 3. Provide purge or inerting materials and conduct the necessary operations as recommended by the equipment manufacturer.
- O. Drying out:
1. Prior to startup, dry out the facilities as specified or recommended by the equipment manufacturer to prevent contamination of catalysts, operating materials, and/or product.
 2. Dry out systems, protective coatings, refractories, and linings as specified or recommended by the equipment manufacturers.

3.3 SPECIFIC PROCEDURES

- A. In addition to the work responsibilities described in Subsection 3.2, the procedures outlined below further define the work responsibilities of the CONTRACTOR for specific systems and items of equipment.
- B. Mechanical equipment:
1. Level baseplates and soleplates and grout under all load bearing surfaces.
 2. Install suitable supports and flexible connections to alleviate any piping stresses that may be imposed on pumps, compressors, and drivers.
 3. In accordance with the manufacturer's recommendations, chemically clean lube oil, seal oil, and cooling systems. Dispose of waste and cleaning media in a manner that is acceptable to and approved by the OWNER and applicable regulatory agencies.
 4. In accordance with the manufacturer's recommendations, charge the lube oil, seal oil, and cooling systems with flushing media and circulate for cleaning purposes. Dispose of any flushing media in a manner that is acceptable to and approved by the OWNER and applicable regulatory agencies.
 5. Charge the lube oil systems, seal oil systems, and cooling systems with the amount and type of operating oil or coolant recommended by the manufacturer.
 6. Operate the equipment and check for excessive vibration, abnormal operating noises, overheating and lubricant leakage, etc., and test any safety shutdown/alarm devices for proper operation, and make any operating tests required by the ENGINEER. The adjustments required for proper operation shall be made prior to operational testing.
 7. Utilize manufacturer's representative for technical assistance during installation and startup.
 8. Prior to startup, all sidewalks, gratings, handrails, safety chains, safety shields, etc., shall be installed.
 9. Prior to startup, demonstrate to the ENGINEER's satisfaction that all chemical solution pipelines are connected to the intended tank(s), feeder(s), pump(s), and application points, and that the pipes, appurtenances contained therein and diffusers will operate at the intended flow rates.
 10. Prior to startup, the applicable safety equipment, emergency shower and eyewash units, fire extinguishers, fire suppression equipment, self-contained breathing apparatus, toxic and/or combustible gas detectors (including the respective personnel warning system), protective clothing, emergency repair kits, etc., shall be installed in an acceptable manner-subject to the ENGINEER's approval, and be fully ready for operation.
 11. All safety hazards, e.g., exposed drive shafts or rotating equipment members, exposed electrical circuitry, open electrical junction boxes and panels, improperly supported piping and conduits, missing safety devices, etc., shall be corrected prior to supplier training of the OWNER's personnel.
 12. The CONTRACTOR shall perform a comprehensive safety inspection and correct any safety deficiencies found before implementing plant startup.
 13. Roadways that are required for ambulance service, fire fighting access, delivery of treatment chemicals and supplies, and disposal of the treatment byproducts shall be completed prior to startup.
 14. Prior to startup, install all warning and safety signs, labels, and devices.
- C. Tanks:
1. Test all tanks and internals, as required to demonstrate conformance to the Contract Documents. Dispose of test media in a manner that is acceptable to and approved by the OWNER and the applicable regulatory agencies.

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2. Prior to startup, conduct chemical cleaning or flushing operations as specified. Dispose of wastes and cleaning media in a manner that is acceptable to and approved by the OWNER and the applicable regulatory agencies.
 3. Prior to startup, install all chemical identification, warning, and safety signs and labels.
- D. Electrical power and lighting systems:
1. Provide the ENGINEER with 3-day advance notification in writing of the test schedule. The CONTRACTOR is advised that the tests shall be witnessed by the ENGINEER.
 2. Perform insulation resistance tests on all wiring 120 volt and larger. Do not meggar instruments or solid-state devices.
 3. Perform insulation resistance tests on all motor and transformer windings from phase to phase and phase to ground.
 4. Perform grounding system tests to determine the continuity of connections and the value of resistance to ground.
 5. Fill electrical gear with oil and/or other media as recommended by the equipment manufacturer.
 6. Prior to energizing electrical equipment, startup, test and set switchgear and circuit breaker relays for proper coordination and operation.
 7. The CONTRACTOR shall obtain the services of a qualified "independent testing service", member of the National Electric Testing Association, to perform a thermographic survey on all switchgear buses, insulators and power connections when energized and under at least 20 percent load. Significant hot spots shall be further checked by infrared pyrometer for exact temperature rise. The CONTRACTOR shall troubleshoot and correct the thermographic hot spots. Correction shall be verified by repeating the thermographic survey at no additional cost to the OWNER.
 8. The CONTRACTOR shall obtain the services of a qualified "independent testing service", member of the National Electric Testing Association, to inspect and test the protective relays and the 800-ampere and larger drawout breakers for proper installation, adjustment, and operation in accordance with the manufacturer recommendations.
 9. The CONTRACTOR shall obtain the services of a qualified "independent testing service", member of the National Electrical Testing Association, to perform DC high potential tests on all cables that will operate at more than 2,000 volts to ground.
 10. Obtain local electrical inspector's approval where required.
 11. Energize all substations, with approval of the Utility Company and the ENGINEER after completion of all electrical testing.
 12. Prior to startup, perform tests and adjustments on all switchgear and motor control equipment to demonstrate proper operation and conformance to the Contract Documents and manufacturer's recommended settings.
 13. Prior to startup, test installation of emergency power and lighting systems for proper operation, including light intensity.
 14. Prior to startup, provide the ENGINEER with a record of all test data and the work completed.
 15. Vacuum clean all electrical equipment prior to startup and acceptance.
- E. Piping systems:
1. Provide the ENGINEER with 3-day advance notification in writing of test schedule.
 2. Hydrostatically or pneumatically test all piping as required by the codes and contract documents.
 3. After successful testing of the piping, slowly drain the system and then flush the system. Orifice plates shall be installed after testing. If installed with the piping,

they will be removed and replaced with spacers or pipe spools of equal length prior to the pressure test.

4. Dewater the system, remove blind flanges, and perform tightness tests, as required by the ENGINEER.
5. Insulate or paint piping, flanges, threaded joints, or field welds after the specified testing of each item has been completed unless instructed otherwise by the ENGINEER.
6. Leave exposed all welded joints (longitudinal, girth, and nozzle) in underground piping that have not been shop tested until the specified testing has been completed. After final testing of these joints, cover the system.
7. Prior to substantial completion and startup, check pipe hangers, supports, guides, and pipe specialties for the removal of all shipping and erection stops and for the correctness of the cold and hot settings for the design service, make adjustments as necessary to obtain proper installation. Provide the ENGINEER with instructions for the hot settings.
8. As necessary during equipment testing and at the end of substantial completion and startup, clean or replace the screens and filter elements as appropriate for the filter type and service.
9. Prior to startup, verify, to the extent required by the ENGINEER, that specified valve packing has been provided on valves installed in the plant.
10. Prior to startup, install all of the valve and piping system identification labels.
11. Prior to startup, check and record the position of all process system valves.
12. Prior to startup, correct support, vibration, and thermal expansion problems detected during the preliminary equipment testing.
13. Prior to the startup, retorque all hot and cold service bolting as required to ensure a permanent and proper installation.
14. Prior to startup, demonstrate to the ENGINEER's satisfaction that each piping system (e.g., chemical, sample, utility, irrigation process, etc.) functions as designed and required by the Contract Documents.

+ + END OF SECTION + +

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SECTION 01800

PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 GENERAL

- A. Closeout is hereby defined to include general requirements near the end of the Contract Time, in preparation for Final Completion, Final Payment, normal termination of Contract, occupancy by OWNER and similar actions evidencing completion of the Work.
- B. Specific requirements for individual units of Work are specified in Sections of Divisions 2 through 16.
- C. Where a conflict exists between this section and the Contract Documents, the conditions in the Contract Documents take precedence.

1.2 CERTIFICATION OF SUBSTANTIAL COMPLETION

- A. Prior to requesting the ENGINEER's inspection for certification of each phase as Substantially Complete, the CONTRACTOR shall certify in writing that each phase of the Work is Substantially Complete and shall submit a list of known items still to be completed or corrected (Contractor's punchlist) prior to Contract Completion.
- B. The following items shall be completed:
 - 1. OWNER has been advised of any pending insurance changeover requirements.
 - 2. Specific warranties, maintenance agreements, final certifications and similar documents have been submitted.
 - 3. All tools, spare parts, extra stocks of materials, and similar physical items have been delivered to OWNER.
 - 4. Instruction of OWNER's operation/maintenance personnel and start up testing has been completed.
 - 5. Submittal and acceptance of all O&M manuals.
 - 6. Changeover of locks to OWNER's cores/keys.
- C. Punchlist:
 - 1. When the CONTRACTOR considers that the Work, or a portion or phase thereof which the OWNER agrees to accept separately, is Substantially Complete, the CONTRACTOR shall certify in writing that the work is Substantially Complete and shall prepare and submit to the ENGINEER a comprehensive list of items to be completed or corrected prior to Contract Completion (punchlist).
 - 2. The ENGINEER may add additional work items to the punchlist.
 - 3. Failure to include an item on the punchlist does not alter the responsibility of the CONTRACTOR to complete all Work in accordance with the Contract Documents.
 - 4. Upon receipt of the CONTRACTOR's punchlist, the ENGINEER will make an inspection to determine whether the Work or designated portion thereof is Substantially Complete.
 - 5. If the ENGINEER's inspection discloses any item, whether or not included on the CONTRACTOR's list, that is not in accordance with the requirements of the Contract Documents, the CONTRACTOR shall, upon notification by the ENGINEER and before

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- an issuance of the Certificate of Operational Completion is provided, complete or correct such item.
6. The CONTRACTOR shall then submit a request for another inspection by the ENGINEER.
 7. When the Work or designated portion thereof is accepted by the ENGINEER to be Substantially Complete, the ENGINEER will prepare a Certificate of Operational Completion.
 8. The date of Operational Completion shall be the date of the ENGINEER's inspection and acceptance.

1.3 FINAL CLEANUP

- A. At completion, leave project clean and ready for use.
 1. Legally dispose of waste materials, debris and rubbish off the site.
 2. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from exposed and enclosed surfaces.
 3. Repair, patch and touch up all affected curbs, gutters, and sidewalks to match adjacent surfaces.
 4. Broom clean paved surfaces, rake clean other surfaces of grounds. Vacuum clean all interior surfaces, rake clean other surfaces of grounds.

1.4 CONTRACT AS-BUILT DRAWINGS

- A. The CONTRACTOR shall prepare and submit Contract As-Built Drawings for the OWNER.
 1. The CONTRACTOR shall make a record of changes during construction on prints of the Drawings provided by the OWNER for this purpose (Contract As-Built Drawings) as described in Section 01330, Submittal Procedures.
 2. ENGINEER will verify on a monthly basis and provide written verification that the Contract As-Built Drawings are being developed and kept updated prior to submitting CONTRACTOR'S progress payment to the OWNER.
 3. The reproducible drawings on which changed conditions are recorded shall be returned to the ENGINEER prior to Final Completion.

1.5 WARRANTIES

- A. The Contract Documents cover the CONTRACTOR's responsibility to remedy defects due to faulty workmanship and materials.
- B. Special warranties are required by various Sections of these Specifications. Assemble written warranties, label and submit to the ENGINEER.
 1. Equipment warranties shall be written in the manufacturer's standard form and shall be countersigned by the Subcontractor or supplier and the CONTRACTOR.
 2. All other warranties shall be written on the Subcontractor's or supplier's letterhead and shall be countersigned by the CONTRACTOR.

1.6 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Spare parts and maintenance materials are required by various Sections of the Specifications.
 1. Parts and materials shall be packaged so as to preclude damage in normal handling and storage.
 2. Packages shall be labeled with full description of contents and project name and clearly identified as to which item of equipment they belong to. CONTRACTOR shall

- maintain a spare parts inventory list which shall be provided to the OWNER prior to Final Completion.
- 3. Submit packaged parts and materials to ENGINEER.
- 4. Submit the value of all spare parts.

1.7 FINAL INSPECTION

- A. Prior to requesting ENGINEER's final inspection for certification of Final Completion and Final Payment, complete the following and list known exceptions (if any):
 - 1. Submit Final Payment request with final releases and supporting documentation not previously submitted and accepted.
 - 2. Submit copy of final punchlist of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by ENGINEER.
 - 3. Submit Consent of Surety.
 - 4. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Certify in writing that the work has been completed in accordance with the Contract Documents, and request ENGINEER's final inspection.
- C. Reinspection:
 - 1. Within seven (7) days after receipt of the CONTRACTOR's notice that the work has been completed, including punchlist items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstance, the ENGINEER will reinspect the work.
 - 2. Upon completion of reinspection, ENGINEER will either prepare a certificate of Final Completion or advise the CONTRACTOR of work not complete or obligations not fulfilled as required for Final Completion.
 - 3. If necessary, inspection procedure will be repeated.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

+ + END OF SECTION + +

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SECTION 01810

CLEANING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. This Section covers the work necessary for cleaning during construction and final cleaning on completion of the Work.

1.2 GENERAL

- A. At all times maintain areas covered by the Contract and public properties free from accumulations of waste, debris, and rubbish caused by construction operations.
- B. Pollution Control:
 - 1. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 2. Do not burn or bury rubbish and waste materials on project site.
 - 3. Volatile wastes shall be properly stored in covered metal containers and removed daily.
 - 4. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 - 5. Do not dispose of wastes into streams or waterways.
- C. Construction materials such as concrete forms and scaffolding shall be neatly stacked by the CONTRACTOR when not in use. The CONTRACTOR shall promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids, and cleaning solutions from surfaces to prevent marring or other damage.
- D. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- E. Use cleaning materials only on surfaces recommended by cleaning material manufacturers.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CLEANING DURING CONSTRUCTION

- A. During execution of Work, clean site and public properties and dispose of waste materials, debris, and rubbish to assure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.
- C. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. Empty containers within one day after they are full.

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- D. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from exposed and semi-exposed surfaces.
- E. Repair, patch, and touch up marred surfaces to specified finish to match adjacent surfaces.
- F. Vacuum clean all interior spaces, including inside cabinets. Broom clean paved surfaces, rake clean other surfaces of grounds.
- G. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- H. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- I. Vacuum clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until building is ready for substantial completion or occupancy.

3.2 FINAL CLEANING

- A. Refer to the requirements of the Contract Documents in addition to the requirements of this Section.
- B. See Section 01800, Project Closeout, for additional requirements.
- C. At the completion of Work on all Contracts and immediately prior to final inspection, cleaning of the entire Project will be accomplished according to the following provisions:
 - 1. The CONTRACTOR shall thoroughly clean, sweep, wash, and polish all work and equipment, including finishes. The cleaning shall leave the structures and site in a complete and finished condition to the satisfaction of the ENGINEER.
 - 2. Should the CONTRACTOR not remove rubbish or debris or not clean the building and site as specified above, the OWNER reserves the right to have the cleaning done at the expense of the CONTRACTOR.
 - 3. Employ professional cleaners for final cleaning.
 - 4. In preparation for substantial completion of occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
 - 5. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish.
 - 6. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.
 - 7. Broom clean paved surfaces; rake clean other surfaces of grounds.
 - 8. Replace air-handling filters if units were operated during construction.
 - 9. Clean ducts, blowers, and coils, if air-handling units were operated without filters during construction.
 - 10. Clean luminaires in accordance with manufacturer's recommendations. Clean all light fixtures.
 - 11. Remove from the OWNER's property all temporary structures and all materials, equipment, and appurtenances not required as a part of, or appurtenant to, the completed work. See Section 01500 - Temporary Construction Facilities and Utilities.

+ + END OF SECTION + +

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SECTION 02140

DEWATERING

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Furnish all labor, materials, equipment and incidentals required and remove and dispose of all surface water and groundwater encountered.
- B. Groundwater was identified in the geotechnical report; the level of groundwater will vary over time and groundwater may be present during construction. The Contractor shall assume dewatering to meet the requirements of these contract documents is required and included in lump sum bid at no additional cost to Owner.

1.2 SUBMITTALS

- A. Submit a detailed dewatering plan showing all details of proposed dewatering system including proposed areas for drainage disposal and treatment processes if necessary. Dewatering plan shall be submitted within 7 days of mobilization and shall be approved prior to any grading activities. Dewatering plans shall be developed for each phase of the work.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Piping, pumping equipment and all other materials required to provide dewatering of excavations shall be suitable for the intended purpose. Standby pumping units shall be maintained at the site to be used in case of failure of the normal pumping units.

PART 3 – EXECUTION

3.1 DEWATERING AND DRAINAGE SYSTEM

- A. General:
 - 1. Continuously control all water during the course of construction, including surface water and groundwater, to prevent any damage to any excavation, fill or to any other construction activities occurring within the site.
 - 2. Maintain all dewatering systems full time (24-hours/day) during the entire time the excavation is open. Do not shut down dewatering systems at night, on weekends or on holidays, or any other time the excavation is open.
 - 3. Provide and maintain proper equipment and facilities to remove all water entering each excavation to be kept dry during subgrade and pipe bedding preparation and continually thereafter until the structure to be built, or the pipe to be installed therein is inspected by the ENGINEER and backfill operations have been completed.
 - 4. Provide adequate alarm, monitoring and back-up systems for all dewatering systems to maintain control of all water during all times any excavation is open.

5. Temporary dewatering and drainage systems shall be in place and operational prior to beginning any demolition or earthwork activities.
6. Collect water entering the excavation from surface runoff in shallow ditches around the perimeter of the excavation, drain to sumps and pump from the excavation to maintain a bottom free from standing water and groundwater level a minimum of 2 feet below lowest point of excavation or subgrade.
7. Take all additional precautions to prevent uplift of any structure during construction. All such arrangements shall be subject to the approval of the ENGINEER.
8. Dispose of drainage so that flow or seepage back into the excavated area will be prevented. Disposal area shall be approved by the ENGINEER.
9. Prevent flotation by maintaining a positive and continuous operation of the dewatering system. If for any reason the dewatering system is found to be inadequate, make additions, changes and replacements, as necessary, to provide a satisfactory system at no additional cost to the OWNER. All damage resulting from failure to properly dewater excavations shall be repaired to the satisfaction of the Engineer at no additional cost to the OWNER.
10. CONTRACTOR shall continuously control all water during the course of construction to ensure that any earthwork materials on the site that could be used later in the project are completely protected until needed. If suitable materials are left unprotected and it results in materials being deemed unsuitable due to moisture, contamination, etc., CONTRACTOR shall remove materials from the site and replace at no additional cost to OWNER.

B. Surface Water:

1. Provide and maintain adequate drainage and dewatering system to prevent surface water from entering excavations and to remove and dispose of all rainwater entering excavations, trenches, or other parts of the Work.
2. Keep the different working areas on the site free of surface water at all times. Special care will be taken to eliminate depressions that could serve as mosquito pools.
3. The diversion and removal of surface water will be performed in a manner that will prevent the accumulation of water behind temporary structures or at any other locations within the construction area where it may be detrimental.

C. Groundwater:

1. Provide, operate and maintain dewatering system to permit excavation and subsequent construction activities in a dry, safe environment.
2. System shall be of sufficient size and capacity to maintain groundwater level a minimum of 2 feet below the lowest point of excavation.
3. CONTRACTOR shall make an assessment of the potential for dewatering induced settlement of surrounding soils and structures. CONTRACTOR shall provide all necessary equipment and facilities, including re-injection wells, cutoff walls, infiltration trenches, etc., to prevent damage to adjacent structures.

D. Disposal of water:

1. Disposal of collected water including but not limited to groundwater, surface water, and storm water shall conform to any and all applicable permit requirements.
2. Contractor shall monitor, test, record, and make any and all necessary adjustments to project BMP's to ensure compliance with project SWPPP and other permit requirements. This includes all monitoring, testing, recording, and reporting water quality information for all discharges from the site; including but not limited to discharges caused by run-on whether naturally occurring or storm

water related, storm water, non-stormwater; groundwater; and any project generated discharges.

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SECTION 02200

SITE PREPARATION

PART 1 - GENERAL

1.1 DEFINITIONS

- A. Interfering or Objectionable Material: Trash, rubbish, and junk; vegetation and other organic matter, whether alive, dead, or decaying; topsoil.
- B. Clearing: Removal of interfering or objectionable material lying on or protruding above ground surface.
- C. Grubbing: Removal of vegetation and other organic matter including stumps, buried logs, and roots greater than 0.5 inch caliper to a depth of 6 inches below subgrade.
- D. Stripping: Removal of topsoil remaining after applicable scalping is completed.
- E. Project Limits: Areas, as shown or specified, within which Work is to be performed.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

- A. Clear, grub, and strip areas actually needed for waste disposal, borrow, or site improvements within limits shown or specified.
- B. Do not injure or deface vegetation that is not designated for removal.

3.2 LIMITS

- A. As follows, but not to extend beyond Project limits.
 - 1. Excavation 5 feet beyond top of cut slopes.
 - 2. Trench Excavation: 4 feet from trench centerline, regardless of actual trench width.
 - 3. Waste Disposal:
 - a. Clearing: 5 feet beyond perimeter.
 - b. Scalping and Stripping: Not required.
 - c. Grubbing: Around perimeter as necessary for neat finished appearance.
 - 4. Structures: 5 feet outside of new structures.
 - 5. Roadways: Clearing , grubbing and stripping 50 feet from centerline.
 - 6. Overhead Utilities:
 - a. Clearing and Grubbing: Entire width of easements and rights-of-way.
 - b. Scalping and Stripping: Wherever grading is required.
 - 7. Other Areas: As shown.
- B. Remove rubbish, trash, and junk from entire area within Project limits.

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3.3 CLEARING

- A. Clear areas within limits shown or specified.
- B. Fell trees so that they fall away from facilities and vegetation not designated for removal.
- C. Cut stumps not designated for grubbing flush with ground surface.
- D. Cut off shrubs, brush, weeds, and grasses to within 2 inches of ground surface.

3.4 GRUBBING

- A. Grub areas within limits shown or specified.

3.5 STRIPPING

- A. Do not remove topsoil until after scalping is completed.
- B. Strip areas within limits to minimum depths shown or specified. Do not remove subsoil with topsoil.

3.6 DISPOSAL

- A. Clearing and Grubbing Debris: Dispose of debris offsite.
- B. Strippings:
 - 1. Dispose of strippings that are unsuitable for topsoil or that exceed quantity required for topsoil offsite or approved by ENGINEER.
 - 2. Stockpile topsoil in sufficient quantity to meet Project needs. Dispose of excess strippings as specified for clearing and grubbing.

+ + END OF SECTION + +

SECTION 02220

DEMOLITION

PART 1 - GENERAL

1.1 DEFINITIONS

- A. "Demolish": CONTRACTOR shall remove from the site as property of CONTRACTOR. Demolition includes disconnecting, removal, loading, repairs, cleanup, transportation, unloading, disposal permits and fees, disposal, and all other items required to remove the material from the site.
- B. "Salvage": CONTRACTOR shall remove from area of Work and place in location designated by ENGINEER. Equipment is property of OWNER. Salvage includes disconnecting, removal, repairs, cleanup, loading, transportation, unloading, and all other items required to remove and relocate the material.
- C. "OWNER to Remove": OWNER will remove from area of Work prior to CONTRACTOR commencing demolition Work for this area.
- D. "Relocate": CONTRACTOR shall relocate material shown to new locations shown on Drawings or stated herein. Relocation includes disconnecting, removal, reconnecting, attaching, repairs, and all other items required to relocate material to new location.
- E. "Abandon": CONTRACTOR shall disconnect and leave in place as specified.
- F. "Materials": Any and all items and objects that are scheduled, specified, or shown to be demolished, salvaged, removed, relocated, or abandoned.

1.2 SUBMITTALS

- A. Submittals:
 - 1. Product Information: Grout, sealants, and bonding agents to be used for patching.
- B. Informational Submittals:
 - 1. Plan and schedule phased demolition, including limits of demolition, as part of and consistent with the progress schedule specified in Section 01320, PROGRESS SCHEDULE.
 - 2. Methods of demolition and equipment proposed to demolish materials.
 - 3. Copies of any authorizations and permits required to perform Work.
 - 4. Copies of Hazardous Materials Inspection Reports.
 - 5. Repair procedures for demolition of materials beyond limits shown on Drawings.

PART 2 - PRODUCTS

2.1 GENERAL

- A. CONTRACTOR shall provide all materials and equipment in suitable and adequate quantity as required to accomplish the Work shown, specified herein, and as required to complete the Project.

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PRODUCTS

PART 3 - EXECUTION

3.1 GENERAL

- A. Drawings are based on available information. The Work may differ slightly from what is shown. CONTRACTOR shall be responsible for determining the work required by inspecting the site.

3.2 SAFETY REQUIREMENTS

- A. All Work shall be done in conformance with all applicable rules and regulations pertaining to safety.
- B. Hazardous Materials:
 - 1. See General Conditions.
 - 2. Existing facilities, or portions thereof, to be demolished may contain hazardous materials such as asbestos cement piping, residual chemicals in existing or abandoned piping, lead-based paint, mercury seals, or other unknown hazardous materials.

3.3 SEQUENCE

- A. Be responsible for the sequence of Work.
- B. Conform to constraints as specified in Section 01130, SPECIAL PROJECT CONSTRAINTS.

3.4 COORDINATION

- A. Coordination with ENGINEER:
 - 1. Only materials specified herein, shown on the Demolition Photographs or the Drawings, or approved by ENGINEER in the field shall be demolished, salvaged, removed, relocated, or abandoned.
 - 2. Verify materials scheduled to be demolished, salvaged, removed, relocated, or abandoned with ENGINEER prior to performing Work.
 - 3. Do not remove materials without prior approval of ENGINEER.
 - 4. Provide at least 3 working days' notice to ENGINEER prior to start of Work.
 - 5. Notify ENGINEER to turn off affected services or facilities before starting Work.
 - 6. Provide temporary services during interruptions to affected services or facilities as acceptable to ENGINEER.
 - 7. ENGINEER will indicate limits of Work if not clearly shown.
- B. Coordination with Utility Owners:
 - 1. Notify utility owners to turn off affected services or facilities before starting Work.
 - 2. Provide not less than 72 hours notice to utility owners prior to shutdown, unless otherwise directed by utility owners.
 - 3. Provide temporary services during interruptions to affected services or facilities as acceptable to utility owners.

3.5 LIMITS

- A. Drawings define minimum portions of materials to be demolished. Unless otherwise shown, rough cuts or breaks may be made to limits of demolition shown. If rough cuts or breaks are made exceeding limits shown, CONTRACTOR shall repair the cuts or breaks back to the dimensions shown on Drawings at CONTRACTOR's expense.
- B. If limits are not clear on the Drawings or Demolition Photographs, limits shall be as directed by ENGINEER.
- C. All areas not within the limits of demolition Work shown on the Drawings, or as specified herein, shall be left undisturbed, unless necessary for demolition of materials.

3.6 DEMOLITION

- A. General:
 - 1. Inspect condition of materials to be demolished prior to bidding to assess potential for salvage value.
 - 2. Remove all materials associated with existing equipment that is to be demolished.
 - 3. Materials within limits of demolition will become the property of CONTRACTOR.
 - 4. All materials from the demolition process shall be removed safely from the project site as soon as possible. They shall be disposed of in accordance with applicable federal, state, and city regulations. CONTRACTOR is responsible for determining these regulations and shall bear all costs associated with disposal of the materials.
- B. Pavement and Curbs:
 - 1. Provide saw cut at all concrete and pavement surfaces and curb removal limits and where neat connection lines are required.
 - 2. Surfaces exposed by demolition activities shall be repaired and finished to provide a uniform, smooth, level transition between adjacent surfaces.
- C. Concrete, CMU, and Reinforcing:
 - 1. In areas where concrete or CMU portions are to be removed from a structure, the edge of removal shall be cut with a concrete saw to leave a perpendicular edge or by core-drilling where a circular hole is required.
 - 2. Damaged concrete shall be removed to solid concrete. Damaged concrete shall include concrete that is soft, spalled, cracked, or otherwise damaged as determined by ENGINEER.
 - 3. Depth of removal shall be as determined by ENGINEER unless otherwise shown or specified.
 - 4. Reinforcing shall be cut and removed unless otherwise shown or instructed by ENGINEER.
 - 5. Spalled edges may be required to be resawn at the discretion of the ENGINEER.
 - 6. Protect adjacent structures and equipment from damage during Work.
 - 7. Exposed surfaces following demolition activities shall be repaired and finished to provide a uniform, smooth, and level transition between adjacent surfaces.
 - 8. Remove and repair designated cracked and damaged concrete areas shown in accordance with this section and Section 03300, CAST-IN-PLACE CONCRETE.
- D. Concrete Embedded Items:
 - 1. Except for core drills, demolish anchor bolts, reinforcing steel, conduit, and other materials that are concrete embedded to a minimum of 1 inch below final finished

surface. For core drills, coat rebar exposed by core drilling with System No. 304 in accordance with Section 09900, PAINTING.

2. Plug empty pipes and conduits with fireproof sealant to maintain fire ratings for floors or walls.
 3. Patching:
 - a. Demolish damaged concrete. Damaged concrete shall be removed to solid concrete. Damaged concrete shall include concrete that is soft, spalled, cracked, or otherwise damaged as determined by ENGINEER.
 - b. Coat with approved bonding agent.
 - c. Patch with nonshrink, nonmetallic grout.
- E. Piping:
1. Pressurized Services: Install restrained caps or plugs at the demolished ends, unless otherwise shown.
 2. Gravity Services: Install concrete plugs, 5-foot minimum length.
- F. Utilities:
1. Excavate utility lines serving structures to be demolished.
 2. Demolish electrical, sanitary, and storm drainage lines serving structures to be demolished.
 3. Support or relocate utility lines exposed by Work.
 4. For water and gas lines to be demolished or capped and terminated, provide a permanent leakproof closure. Closure type shall be as recommended by utility owner.
- G. Electrical:
1. Remove conduits and wiring from materials to be demolished back to nearest junction box.
 2. For existing circuits to remain operational, intercept existing conduit at the most convenient location, or as shown, and splice and extend conduit to new location. Install new conductors as required to accomplish intended results. New conductors shall be continuous without splices between junction boxes.
 3. For existing circuits no longer needed, demolish conductors from conduits.
 4. Demolish all surface-mounted conduit which is no longer needed.
 5. For conduit below grade or concealed within walls, cap and abandon in place.

3.7 SALVAGE

- A. Salvage materials for OWNER's own use where shown.
- B. Remove materials with extreme care so as not to damage.
- C. Promptly remove materials from Work area.
- D. Store materials in location designated by ENGINEER.
- E. Clean and protect materials from dust, dirt, natural elements, and store as directed.

3.8 RELOCATION

- A. ENGINEER will determine condition of materials prior to removal.
- B. Remove all materials associated with items to be relocated.

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- C. Existing materials shall not be damaged during removal.
- D. Properly store and maintain materials in same condition as when removed.
- E. Clean and protect materials from dust, dirt, natural elements, and store as directed.

3.9 ABANDONMENT

- A. Structures: Break holes into or core drill floor slabs, catch basins, and other below-grade concrete structures to be abandoned in place to allow water to freely migrate through.
- B. Piping and Conduits:
 - 1. General: Piping and conduits to be abandoned shall be capped with a watertight plug at demolished end in a manner that will prevent entrance of soil, groundwater, or moisture.
 - 2. Pressurized Services: Install restrained caps or plugs at the demolished ends, unless otherwise shown.
 - 3. Gravity Services: Install concrete plugs, 5-foot minimum length.

3.10 REPAIR AND REPLACEMENT

- A. Any damaged materials scheduled to be salvaged or relocated shall be repaired by the CONTRACTOR to the satisfaction of ENGINEER or replaced at the CONTRACTOR's expense.
- B. Any damage to areas not within the limits of demolition Work shown on the Demolition Photographs, Drawings, or as specified herein shall be repaired or replaced to original precontract conditions at the CONTRACTOR's sole expense.

3.11 DISPOSAL

- A. Dispose of materials offsite in licensed landfills and in accordance with all local, state, and federal regulations. CONTRACTOR is responsible for obtaining any and all necessary permits for disposal.

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SECTION 02300

EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section includes: All excavation, backfill, fill, retaining walls, grading, subgrade preparation and disposing of earth materials as required. It also includes all temporary means needed to prevent discharge of sediment to watercourses from dewatering systems or erosion.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM)
1. ASTM C33, Standard Specification for Aggregate Material.
 2. ASTM C150 Standard Specification for Portland Cement
 3. ASTM C618 Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
 4. ASTM D422, Method for Particle-Size Analysis of Soils.
 5. ASTM D423, Liquid Limit of Soils.
 6. ASTM D427, Shrinkage Factors of Soils.
 7. ASTM D698, Test Method for Laboratory Compaction Characteristics of Soil.
 8. ASTM D1140 Standard Test Methods for Amount of Material in Soils Finer Than the No. 200 (75-um) Sieve
 9. ASTM D1556, Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
 10. ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil
 11. ASTM D2166, Unconfined compressive strength of soils.
 12. ASTM D2922, Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 13. ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
 14. ASTM D4832 Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders
- B. U.S. Environmental Protection Agency (U.S. EPA)
1. EPA 9090 – Compatibility Test for Wastes and Membrane Liners
- C. APWA Greenbook
1. Section 200-2.5 Processed Miscellaneous Base
- D. Occupational Safety and Health Administration (OSHA)
1. Title 29, Code of Federal Regulations, Part 1926
- E. SECTION 01400 - QUALITY CONTROL

1.3 SYSTEM DESCRIPTION

- A. Permits and Regulations:

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1. Perform excavation Work in compliance with applicable requirements of governing authorities having jurisdiction.
2. Obtain all necessary permits for Work in roads, rights-of-way, railroads, etc. Also, obtain permits as required by local, state and federal agencies for discharging water from excavations, for erosion control, and for prevention of air and water pollution.

1.4 SUBMITTALS

- A. Earthwork Reports: CONTRACTOR'S approved Testing laboratory or geotechnical consultant shall submit copies of the following reports directly to ENGINEER:
 1. Tests on all materials covered by this specification section
 2. Tests on borrow material.
 3. Tests on footing and pad subgrade.
 4. Field density tests.
 5. Optimum moisture - maximum density curve for each material used for backfill.
 6. Reports of observations and statements of compliance with the project geotechnical report for all borrow material, fill, backfill, and grading including subgrades.
 7. Quality Control Plan: Names and phone numbers of independent testing companies that will be used to perform CONTRACTOR'S soil testing, asphalt concrete testing, placement observation, certifications required by the building permit (if any), statement of qualifications, and proposed procedures for performing tests and providing test results and certifications to ENGINEER.
 8. Refer to specification section 01400 Quality Control for additional requirements.
- B. Submit to the ENGINEER samples of all materials, including but not limited to select backfill, general backfill, bedding, crushed stone, lime treatment, aggregate base, sand, topsoil, and any other materials requested by ENGINEER. Submit samples of the proposed material at least seven days in advance of its anticipated use.
- C. Contractor shall submit all pot holing results to engineer a minimum of 30 days in advance of starting work on any item that requires potholing
- D. Submit PVC geomembrane liner product data sheet, installation manual, and certification from the manufacturer.
- E. Submit a Final Project Soils Testing and Observation Report.
 1. The purpose of the final report is to summarize the daily or monthly reports and indicate that all the work for the grading operation was properly performed.
 2. The final report shall be a copy of all the monthly reports and a letter tying all the monthly reports (table with reports dates) and a statement that all the work (subgrade approval, compaction tests, sampling, laboratory testing, and reporting) for the grading operation was properly performed in accordance of 01400 Quality Control.
- F. Permits:
 1. CONTRACTOR shall submit copies of all permits a minimum of 7 days in advance of starting any associated work.
- G. Quantities:
 1. CONTRACTOR shall also submit backup calculations to substantiate all payment requests for work covered by this spec section.

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- H. Excavation Support Plan:
 - 1. CONTRACTOR shall submit in advance of performing any excavation,
 - 2. CONTRACTOR shall designate on-site competent person(s) and provide copies of training records.
- I. Quality control plan for earthwork activities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General:
 - 1. All materials shall be tested by the CONTRACTOR'S quality control laboratory or by supplier's quality control laboratory for conformance to the project requirements. Test results shall be submitted to the ENGINEER for approval.
 - 2. No material shall be placed without the approval of the ENGINEER. Materials not approved by the ENGINEER through the standard project submittal procedures will not be allowed to be installed. If CONTRACTOR places unapproved materials, a stop notice will be issued and CONTRACTOR shall be solely responsible for all schedule and cost ramifications of placing materials without obtaining contractual required approvals.
- B. Marking Tape:
 - 1. Plastic (Non-Detectable, for metallic pipes that also have pipe locating wire or as required):
 - a. Inert polyethylene, impervious to known alkalis, acids, chemical reagents, and solvents likely to be encountered in soil.
 - b. Thickness: Minimum 4 mils.
 - c. Width: 12 inches.
 - d. Identifying Lettering: Minimum 1-inch high, permanent black lettering imprinted continuously over entire length.
 - e. Manufacturers and Products:
 - 1) Reef Industries; Terra Tape.
 - 2) Pro-Line; Non-Detectable Tape.
 - 3) Or equal.
 - 2. Metallic (Detectable, for nonmetallic pipes or as required):
 - a. Solid aluminum foil, visible on unprinted side, encased in a protective high visibility, inert polyethylene plastic jacket.
 - b. Foil Thickness: Minimum 5.5 mils.
 - c. Width: 12 inches.
 - d. Identifying Lettering: Minimum 1-inch high, permanent black lettering imprinted continuously over entire length.
 - e. Joining Clips: Tin or nickel-coated, furnished by tape manufacturer.
 - f. Manufacturers and Products:
 - 1) Reef Industries; Terra "D".
 - 2) Pro-Line; Detectable Tape.
 - 3) Or equal.
 - 3. Marking tape shall be marked with the following statements:
 - a. Influent/Effluent Pipeline: "RESTRAINED PIPE"
 - b. Sanitary Sewer Pipeline: "CAUTION - SANITARY SEWER PIPELINE BURIED BELOW."
 - c. Storm Drain Pipeline: "CAUTION - STORM DRAIN PIPELINE BURIED BELOW."

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- d. For Existing Utilities Within Trench Limits: "CAUTION - BURIED PIPELINE/CONDUIT" or as specified by utility owner.
- 4. Color:
 - a. Influent/Effluent Pipeline: Blue, as specified in ANSI Z53.1 Safety Color Code.
 - b. Sanitary Sewer Pipeline: Green, as specified in ANSI Z53.1 Safety Color Code.
 - c. Others Disturbed: Color, as specified for specific utility in ANSI Z53.1 Safety Color Code.
- C. Pipe Locating Wire (Tracer Wire):
 - 1. Pipe locating wire shall be Agave insulated AWG No. 12, soft drawn, single-strand copper wire, direct burial tracer wire 600 volts E-246360 rated with 45 mil blue colored polyethylene jacket.
 - 2. Provide at least 6-mil PVC electrical tape insulation around wire where adjacent to metal pipe, valves, and in all valve boxes.
- D. Filter Fabric
 - 1. Filter fabric shall be Mirafi, Type 140N; Dupont, Type PAR, Style 3401, or equal product by Amoco and shall conform to the following requirements:
 - 2. Minimum grab strength of 120 lbs per ASTM D1682.
 - 3. Apparent open size (AOS) to be equal to or greater than the U.S. Standard Sieve No. 100 (0.210 mm) per ASTM D4751.
 - 4. Percent open area not to exceed about 25 percent. The percent open area is defined as the ratio of the sum of 20 or more individual open areas (times 100) to the sum of the corresponding 20 or more individual total areas.
 - 5. Coefficient of permeability shall not be less than 10⁻² cm/sec.
- E. Fill Material:
 - 1. Common Fill (Select or Engineered Fill):
 - a. Common Fill materials shall consist of soils obtained from on-site excavations or off-site sources that are uniformly mixed, contain no organic material, and have been passed through a 3" screen or otherwise processed to achieve a maximum particle size of 3". As defined in project specific Geotechnical Report as Engineered Fill. Select fill or backfill is material selected by the ENGINEER from the excavation.
 - b. The maximum plasticity of off-site materials shall be less than 12 as determined by a Plasticity Index (PI) Test in accordance with ASTM D4318.
 - c. If on-site material is unsuitable as determined by the ENGINEER then imported fill shall be used.
 - d. If on-site material becomes unsuitable as a result of increased moisture content, it shall be the CONTRACTOR's responsibility to off haul the unsuitable material and imported fill shall be provided by CONTRACTOR at no cost to the OWNER. Contract time extensions will not be approved by OWNER for CONTRACTOR delays caused by unsuitable materials.
 - e. All imported fill shall be approved by the OWNER in advance of delivery to the site. CONTRACTOR shall provide full analytical test results for all proposed non-virgin fill materials.

Sieve Size	% Passing
3-inch	100
¾-inch	70-100
No. 200	0-30
Liquid Limit	Plasticity Index

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<30	<12
Organic Content	
<3%	

- F. $\frac{3}{4}$ " Aggregate Base (Aggregate Base):
1. Class 2, $\frac{3}{4}$ " maximum particle size conforming to Section 26 of the Caltrans Standard Specifications. Recycled aggregate base shall not be used.
- G. 1-1/2" Aggregate Base:
1. Class 2, 1-1/2" maximum particle size conforming to Section 26 of the Caltrans Standard Specifications. Recycled aggregate base shall not be used.
- H. Drain Rock (1" Rock)
1. Drain rock shall consist of a washed uniform-graded processed gravel with 100 percent passing 1 1/2" and less than 3 percent passing No. 4 sieve.
- I. Crushed Stone ($\frac{3}{4}$ " Crushed Rock):
1. Crushed stone will be a washed crushed rock or gravel conforming to the requirements of ASTM C33, Sieve Size #57.
- J. Granular Fill (Pervious Backfill or Granular Bedding):
1. Washed chips
 2. Unfrozen, friable, and no clay balls, roots, or other organic material.
 3. Clean or gravelly sand or gravel or crushed rock, with particle sizing distribution, as determined in accordance with ASTM D422, of:
 - a. 100 percent passing
 - 1) 1/2 inch for pipe 12" or smaller
 - 2) 3/4 inch for pipe over 12"
 - b. less than 50% percent passing 3/8 inch
 - c. Less than 10% passing No. 8 sieve;
 - d. less than 3 percent passing a No. 100 sieve; and
 - e. less than 2 percent passing a No. 200 sieve.
 4. Maximum particle size and other requirements as follows, unless otherwise specified.
 - a. 1/2 inch maximum particle size for pipe 12" or smaller; and
 - b. 3/4 inch maximum particle size for pipe over 12".
- K. Sand:
1. Natural or manufactured granular material, containing no organic material.
 2. Sand, clean or clean to silty, less than 12 percent passing No. 200 sieve.
 3. Individual Particles: Free of sharp edges.
 4. Maximum Size Particle: Pass a No. 4 sieve.
 5. If more than 5 percent passes No. 200 sieve, the fraction that passes No. 40 sieve shall be non-plastic as determined in accordance with ASTM D4318.
- L. Gravel Surfacing
1. Gravel Surfacing will be crushed rock, angular, and well-graded.
 2. Maximum size of $\frac{3}{4}$ ", at least 50% passing the No 4. screen, between 10 and 30% passing the No. 10 screen and no more than 15% passing the No. 40 screen.
 3. Color to be selected by OWNER.

- M. Controlled Low Strength Material (CLSM):

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1. Select and proportion ingredients to obtain compressive strength between at 28-days between 100 psi and 200 psi in accordance with ASTM D4832. Sufficient cement shall be added to meet the strength and material requirements given below and as required to provide sufficient strength for compacting overlying trench backfill. Provide certified mix design and test results in accordance with submittal requirements.
2. Materials:
 - a. Cement: ASTM C150, Type I or II, two sacks minimum per cubic yard.
 - b. Aggregate: ASTM C33, maximum Size 7. The amount of material passing a No. 200 sieve shall not exceed 12 percent. The above No. 200 sieve material shall be well graded so as to avoid segregation. The minus #200 sieve fraction shall be nonplastic.
 - c. Fly Ash (if used): ASTM C618, Class F.
 - d. Water: Clean, potable, containing less than 500 ppm of chlorides.
3. Mix Design:
 - a. The CONTRACTOR and its suppliers shall determine the materials and proportions used to meet the requirements of these Specifications. Make daily checks of the aggregate gradation and adjust the mix design as required. Modify the CLSM mix as necessary to meet the flowability, pumpability, and set time requirements for each individual pour.
 - b. At least 30 days before placing CLSM, submit to the ENGINEER a mix design for each CLSM to be used. The mix design shall include trial lab and field data, with pairs of 6-inch by 12-inch cylinder breaks performed at 7, 14, and 28 days. Molds shall be plastic or waxed cardboard. The mix design shall be performed by an independent laboratory under the direction of an engineer licensed in California.
 - c. No CLSM shall be placed until the ENGINEER has approved the mix design. The ENGINEER's approval of the mix design shall be understood to indicate conditional acceptance. Final acceptance will be based on tests conducted on field samples and conformance with these Specifications.
 - d. Prior to placing backfill over CLSM, CLSM shall achieve an indentation diameter less than or equal to 75 mm (3 inches) as determined in accordance with ASTM C6024.

N. Polyvinyl chloride (PVC) geomembrane liner:

1. Certified Properties
 - 1) Thickness per ASTM 5199: 30 mils
 - b. Minimum Tensile Properties per ASTM D882
 - 1) Strength at Break: 73 lbs/in.
 - 2) Elongation at Break: 380%
 - 3) Modulus at 100% Elongation: 32 lbs/in.
 - c. Tear Strength per ASTM D1004: 8 lbs min.
 - d. Dimensional Stability per ASTM D1204: 3%
 - e. Low Temperature Impact per ASTM D1790: -20 deg F
2. Index Properties
 - a. Specific Gravity per ASTM D792: 1.2
 - b. Water Extraction (% loss max) per ASTM D1239: 0.15%
 - c. Average Plasticizer Molecular Weight per ASTM D2124: 400
 - d. Volatile Loss (Max % wt loss) per ASTM D1203: 0.7%
 - e. Resistance to Soil Burial per ASTM G160
 - 1) Breaking Factor: 5%

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- 2) Elongation at Break: 20%
- 3) Modulus Force at 100% Elongation: 20%
- f. Hydrostatic Resistance per ASTM D751: 100 psi
- 3. Seam Requirements
 - a. Shear Strength per ASTM D3083: 58.4 lbs/in.
 - b. Peel Adhesion per ASTM D413: 15 lbs/in.
- 4. Manufacturer's and Products
 - a. Watersaver Company; Colorado
 - b. Or equal.

2.2 STOCKPILES

- A. Anything that is temporary fill or permanent fill shall meet compaction requirements. Stockpiles are not temporary fill and do not need compacting. The stockpile base elevation needs to be surveyed prior to any stockpile placement. After stockpile removal, the ground shall be surveyed to confirm that the entire stockpile has been removed.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Inspection:
 - 1. Provide ENGINEER with sufficient notice and with means to examine the areas and conditions under which excavation, fill, and grading are to be performed.
 - 2. ENGINEER will notify CONTRACTOR if conditions are found that may be detrimental to the proper and timely completion of the Work.
 - 3. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.
 - 4. CONTRACTOR'S third party independent quality control laboratory or geotechnical consultant shall perform any and all inspection, observation, and testing necessary to comply with special inspection requirements.
- B. "Pot-holing":
 - 1. Excavate and backfill, in advance of the construction, test pits to determine conditions or location of existing utilities and structures as required to complete the work.
 - 2. Determine the location of each existing facility involved within the area of the excavation for Work under this Contract.
 - 3. Exercise care during such location work to avoid damaging and/or disrupting the affected facility.
 - 4. CONTRACTOR is responsible for repairing, at his expense, damage to any structure, piping, or utility caused by his Work.
 - 5. Contractor shall include pot holing activities in the project schedule.
- C. Temporary Fencing:
 - 1. Furnish and install a temporary security fence surrounding excavations and work area, including stockpile and storage areas.
 - 2. Provide fence openings with gates only at vehicular, equipment and worker access points.

3.2 EROSION CONTROL

- A. General: Implement the construction procedures outlined herein to assure minimum damage to the environment during construction. Take all additional measures required to conform to the requirements of applicable codes and regulations.
 - 1. Whenever possible, locate and construct access and temporary roads to avoid environmental damage. Make provisions to regulate drainage, avoid erosion and minimize damage to vegetation.
 - 2. Where areas must be cleared for storage of materials or temporary structures, provisions will be made for regulating drainage and controlling erosion, subject to the ENGINEER'S approval.
 - 3. Remove only those shrubs and grasses that must be removed for construction. Protect the remainder to preserve their erosion-control value.
- B. Control Measures: Apply measures to control erosion and to minimize the siltation of the existing waterways, and natural ponding areas. Such measures include, but are not limited to, the use of berms, baled straw silt barriers, gravel or crushed stone, mulch, slope drains and other methods.
 - 1. Install erosion and sediment control practices where shown and according to applicable standards, codes and specifications. The practices will be maintained in effective working condition during construction and until the drainage area has been permanently stabilized.
 - 2. Temporary measures will be coordinated with the construction of permanent drainage facilities and other Work to the extent practicable to assure economical, effective, and continuous erosion and siltation control.
 - 3. CONTRACTOR will provide special care in areas with steep slopes. Disturbance of vegetation will be kept to a minimum to maintain stability.
 - 4. After stabilization, remove all straw bale dikes, debris, etc., from the site.
- C. Dust Control:
 - 1. Prevent blowing and movement of dust from exposed soil surfaces and access roads to reduce on- and off-site damage and health hazards.
 - 2. Control may be achieved by irrigation in which the site is sprinkled with water until the surface is moist.
 - 3. Repeat the process as needed.
- D. Failure to Comply: In the event CONTRACTOR repeatedly fails to satisfactorily control erosion and siltation, the OWNER reserves the right to employ outside assistance or to use its own forces to provide the corrective measures indicated. The cost of such work, plus engineering costs, will be deducted from monies due CONTRACTOR.

3.3 DEWATERING

- A. General: Conform to the requirements of Specification Section 02140 - Dewatering.
- B. Continuously control all water during the course of construction, including surface water and groundwater, to prevent any damage to any excavation, fill or to any other construction activities occurring within the site.
- C. CONTRACTOR shall continuously control all water during the course of construction to ensure that any earthwork materials on the site that could be used later in the project are completely protected until needed. If suitable materials are left unprotected and it results in materials being deemed unsuitable due to moisture,

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contamination, etc., CONTRACTOR shall remove materials from the site and replace at no additional cost to OWNER.

3.4 EXCAVATION SUPPORT SYSTEMS

A. Trench Support

1. Provide, install and maintain trench shields for all trench excavations for which trench shields are required (at a minimum, as required by OSHA).
2. Follow all OSHA guidelines and other applicable laws and ordinances.
3. Elevation of Bottom:
 - a. Excavation of earth material below the bottom of a shield will not exceed the limits established by ordinances, codes, laws and regulations.
 - b. When using a shield for pipe installation, the bottom of the shield will not extend below the mid-diameter of installed pipe at any time.
 - c. When using a shield for the installation of structures, the bottom of the shield shall not extend below the top of the bedding for the structures.
4. Moving Shield: When a shield is removed or moved ahead, extreme care will be taken to prevent the movement of pipe or structures or the disturbance of the bedding for pipe or structures. Pipe or structures that are disturbed are to be removed and reinstalled as specified.

B. Below Grade Structure Excavation Support

1. Provide, install and maintain excavation support systems for all structural excavations where excavation support is required (at a minimum, as required by OSHA).
2. Follow all OSHA guidelines and other applicable laws and ordinances.
3. Prepare excavation support plan addressing the following topics:
 - a. Details of shoring, bracing, sloping or other provisions for worker protection from the hazards of caving ground
 - b. Design assumptions and calculations
 - c. Methods and sequencing of installing excavation support
 - d. Proposed locations of stockpiled excavated materials
 - e. Minimum lateral distance from the crest of slopes for vehicles, equipment and materials
 - f. Location of vertical and horizontal monitoring points on structures and recommended frequency of monitoring for excavation support system stability and performance
4. Design of excavation support systems and excavation support plan shall be prepared by a civil or structural engineer registered in the state in which the system is installed.
 - a. Excavation support system shall consist of h-pile and lagging, sheet piles, or other reliable method of excavation support.
 - b. The use of below-ground tiebacks is allowed, however, Contractor is responsible for locating and avoiding potential conflicts with existing utilities in the area in which the tie-backs are installed. All tiebacks shall be further than 3 feet from any conflicting utility. Tiebacks shall not use existing structures for support. Tiebacks cannot extend beyond property boundary.

C. Removal of Excavation Support

1. Completely remove all excavation support unless ENGINEER specifically allows requested excavation support to remain in place after backfill.
2. Remove all excavation support in a manner that will maintain support as excavation is backfilled and will not leave voids in the backfill.

3.5 EXCAVATION

A. General:

1. Material removed: Excavations include earth, sand, clay, gravel, hardpan, boulders, rock, silt, cobbles, pavements, rubbish and all other materials within the excavation limits.
2. Excavations for structures and pipelines will be open excavations. Provide excavation protection system(s) required by ordinances, codes, law and regulations to prevent injury to workers and to prevent damage to new and existing structures or pipelines.

B. Structural Excavation:

1. The elevation of the bottom of footings shown is approximate only. ENGINEER may order such changes in dimensions, and elevations as may be required to secure a satisfactory footing.
2. Hand-trim all structure excavations to permit the placing of full widths and lengths of footings on horizontal beds. Rounded and undercut edges will not be permitted.
3. Excavations shall allow for aggregate base, forms, working space, installation of shoring or bracing or the safe sloping of banks.

C. Pipe Trench Excavation:

1. No more than 100' of trench may be opened in advance of pipe laying.
2. Minimize trench width to the greatest extent practical, but conform to the following:
 - a. Sufficient to provide room for installing, jointing and inspecting piping, but in no case wider at top of pipe than pipe barrel outside diameter plus 3'.
 - b. Enlargements at pipe joints may be made, if required, and approved by ENGINEER.
 - c. Sufficient for shoring and bracing, or shielding and dewatering.
 - d. Sufficient to allow thorough compaction of backfill adjacent to bottom half of pipe.
 - e. Depth of trench will be as shown. If required and approved by ENGINEER, depths may be revised.

D. Subgrades:

1. Subgrades for roadways, structures and trench bottoms shall be firm, unyielding, dense, and thoroughly compacted and consolidated; free from mud, muck, and other soft or unsuitable materials; and remain firm, unyielding and intact under all construction operations.
2. Subgrades that are otherwise solid, but which become soft or mucky on top due to construction operations, shall be reinforced with select fill.
3. The finished elevation of stabilized subgrades shall not be above subgrade elevations shown.
4. Subgrades should be proof rolled prior to use or placement of engineered fill. Proof rolling should be performed using a loaded water truck, loaded scraper, loaded 10 wheeled truck or any other equipment of sufficient size and weight that is approved by Engineer. Engineer shall observe the proof rolling and verify that the subgrade is firm and unyielding prior to further construction on the subgrade soils.
5. If the trench bottom is not firm and unyielding, then trench subgrade shall be stabilized with placement of a geotextile fabric on the trench bottom and wrap it with at least one foot of 1-inch drain rock or compacted processed miscellaneous base as per APWA Greenbook Section 200-2.5.

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6. CONTRACTOR'S dewatering operations shall maintain the groundwater level a minimum of 2 feet below the subgrade at all times.
- E. Material Storage: Stockpile satisfactory excavated materials in approved areas, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.
 1. Locate and retain soil materials away from edge of excavations.
 2. Dispose of excess soil material and waste materials as specified hereinafter.
- F. Unauthorized Excavation:
 1. All excavation outside the lines and grades shown, and which is not approved by ENGINEER, together with the removal and disposal of the associated material is at the CONTRACTOR'S expense.
 2. Unauthorized excavations shall be filled and compacted with select fill by the CONTRACTOR at CONTRACTOR's expense and will not be approved for payment under the GMP.

3.6 PLACEMENT OF FILL AND BACKFILL

- A. General:
 1. Backfill excavations as promptly as Work permits, but not until completion of the following:
 - a. Acceptance by the ENGINEER of construction below finish grade.
 - b. Inspection, testing, approval, and recording of locations of underground piping and ductwork.
 - c. Removal of concrete formwork.
 - d. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.
 - e. Removal of trash and debris.
 2. Remove and replace with approved fill material, as specified, fill containing organic materials or other unacceptable material "and uncertified fill.
 3. Compact all fill and backfill as specified in Subsection 3.7.
- B. Structural Backfill:
 1. Select fill shall be placed as structural backfill where shown on the Drawings or indicated herein.
 2. Constraints:
 - a. Backfill water-holding basins or structures only after satisfactory leakage tests have been conducted as specified in Sections Concrete, Precast Concrete, and Prestressed Concrete Tank.
 - b. No backfill or fill material shall be placed when free water is standing on the surface of the area.
 - c. No compaction of fill will be permitted with free water on any portion of the fill to be compacted.
 - d. No fill shall be placed or compacted in a frozen condition or on top of frozen material.
 - e. Any fill containing organic materials or other unacceptable material previously described shall be removed and replaced with approved fill material prior to compaction.
 3. Levels of backfill against concrete walls are not to differ by more than 2' on either side of walls, unless walls are adequately braced or all floor framing is in place up to and including grade level slabs.
 4. Wherever a pipe passes through a structure backfill, the structure backfill shall be placed and compacted to an elevation 12" above the top of the pipe before the trench is excavated.

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C. Backfill in Pipe Trenches:

1. Pipeline trenches may be backfilled prior to pressure testing, but no structure shall be constructed over any pipeline until it has been tested.
2. Unless otherwise shown, place all pipe on a minimum 6" thick layer of Granular Fill. The bedding shall extend 12" above the top of the pipe.
3. Install bedding as follows:
 - a. Spread and compact bedding and grade to provide a uniform and continuous support beneath the pipe at all points between bell holes or pipe joints.
 - b. After each pipe section is placed, deposit and compact sufficient bedding material under and around each side of the pipe to hold the pipe in proper position and to maintain alignment during subsequent pipe jointing and bedding operations.
 - c. Bedding material shall be deposited and compacted uniformly and simultaneously on each side of the pipe to prevent lateral displacement. Then place and compact the bedding material to an elevation 12" above the top of pipe.
4. Above the level of bedding, place Select or Common Fill, as specified elsewhere in these specifications.
5. Controlled Low Strength Material (CLSM):
 - a. When CLSM pipe zone material is indicated, the pipe may be supported above the trench floor on pea gravel bags or sandbag supports. The CONTRACTOR shall demonstrate to the ENGINEER, 7 days prior to full pipeline backfill installation, placement of CLSM as described below. This demonstration shall occur on the first 300 feet of trench, The CLSM pipe zone material shall be installed as indicated.
 - 1) Bedding and Embedment: Place and consolidate CLSM pipe zone material using the following techniques:
 - a) Following placement and anchoring of the pipe, remove all loose soil and debris from trench walls and floor. Remove any unstable soil at the top of the trench which might fall into the trench during placement of the CLSM.
 - b) Deliver the CLSM to the trench in ready mix trucks or traveling pug mill and utilize pumps or chutes to place the CLSM in the trench. Direct CLSM to one side of the pipe, taking care not to displace the pipe at any time. Continue placing CLSM on one side of the pipe until CLSM has gone under the pipe and up the other side to a depth of 6 inches above the pipe bottom. Use at least two handheld vibrators to continuously liquefy and move CLSM into all voids. Adjust water in mixture to maintain fluid consistency but maintain strength requirements. Continue placing CLSM on both sides of the pipe continuously using two vibrators for every 30 feet of pipe run.
 - c) Maintain stability of pipe and conduit throughout CLSM placement and curing. CLSM will likely require placement in lifts to prevent pipe flotation. No movement of the pipe caused by flotation will be allowed. If any movement occurs, the CLSM material shall be removed and/or repaired in full conformance with these Contract Documents at no additional cost to the OWNER. Remove all sloughed material or other debris from top of previously placed CLSM.
 - d) Indentation in the CLSM of a diameter of less than or equal to 3" in accordance with ASTM C6024 is required prior to placing each lift as well as trench zone material or other fill on top of CLSM. A smaller cure period will be allowed if it can be demonstrated to the ENGINEER that it will support the individual lift or trench zone material. The CLSM shall

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be sufficiently strong to support trench backfill material and the compaction effort required to achieve the specified compaction.

D. Marking Tape:

1. Continuously install marking tape along centerline of all buried piping, on top of last lift of pipe zone material unless otherwise shown. Coordinate with piping installation drawings. Install in accordance with manufacturer's recommendations.
 - a. Metallic Marking Tape: Install with nonmetallic piping and waterlines. Join ends with clips provided by the manufacturer.
 - b. Plastic Marking Tape: Install with metallic piping.

E. Pipe-Locating Wire:

1. Pipe-locating wire shall be provided for the entire length of all water pipelines and shall be continuous around restrained joint sections.
2. Install pipe locating wire by strapping to the top of the pipe with PVC tape, polyethylene-backed tape, or tie locks. Test pipe locating wire with pipe locator equipment prior to final acceptance.
3. Stub the pipe-locating wire up inside each valve box or flush-mounted Type C corrosion monitoring stations. Sufficient excess length shall be provided at terminal connections to allow continuation of the pipe-locating wire to the terminal connection.
4. Wire splices shall be made with compression fittings or soldering; wrapped with Tac-Tape, Aqua-Seal, or equal, and wrapped with electrical tape. Prevent bare copper wire from contacting metallic appurtenances including, but not limited to, pipe, buried valves, or fittings.

F. Resume backfilling operations using the techniques described above to complete the pipe zone backfill. ENGINEER will approve the pipe zone backfill prior to initiating the trench zone backfill.

G. Embankments:

1. To the maximum extent available, use excess earth obtained from structure and trench excavations for construction of acceptable embankments. Obtain additional material from borrow pits, if such pits are shown, otherwise obtain additional material from offsite sources as necessary.
2. Strip, scarify, level, key, and roll the subgrade so that surface materials of the subgrade will be compact and well bonded with the first layer of the embankment.
3. Wherever a pipe is to pass through a fill or embankment, place and compact the fill or embankment material to an elevation 12" above the top of the pipe before the trench is excavated.

H. Crushed Stone:

1. Place where shown on the Drawings, to the limits shown.
2. Place in hand-tamped lifts, not to exceed 6".

I. Replacement of Unacceptable Excavated Materials: In cases where over-excavation for the replacement of unacceptable soil materials is required, backfill the excavation to the required subgrade with select backfill material and thoroughly compacted.

3.7 COMPACTION

A. General:

1. Compaction by inundation with water will not be permitted.

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2. Provide equipment capable of discing, aerating, and mixing the soil to ensure reasonable uniformity of moisture content throughout the material and to reduce the moisture content by air drying, if necessary.
3. Perform compaction with equipment suitable for the type of fill material being placed. Select equipment that is capable of providing the minimum relative compaction required by these Specifications. Use hand-operated compacting equipment within a distance of 3 feet from the wall of any completed below grade structure. Between 3 feet and 12 feet adjacent to structures, compaction may be completed with lightweight compaction equipment weighing less than 15,000 pounds. Beyond 12 feet adjacent to structures, there are no equipment weight restrictions. Provide equipment that is capable of compacting in restricted areas next to structures and around piping.

B. Fill Compaction Density Requirements: The degree of compaction required for several types of materials are listed below. Moisten or aerate material as necessary to provide the moisture content specified, or if not specified, that will facilitate obtaining the specified compaction.

MATERIAL	Required Minimum Density (ASTM D 1557)	Maximum Uncompacted Lift*
Common Fill:	90%	8"
Select Fill and Trench Backfill:		
Within 2 feet of final grade	95%	8"
More than 2 feet below final grade	90%	8"
Aggregate Base:	95%	8"
Granular Fill	90%	6"
Sand	90%	6"
Gravel Surfacing	95%	6"

*Where large areas of backfill allow for use of large, heavy equipment, ENGINEER may, at their option, allow uncompacted lifts up to 12".

- C. Moisture Content: All fill and backfill shall be prepared and thoroughly mixed to achieve optimum moisture content, $\pm 3\%$, with the following exception: On site clayey soils moisture content is limited to optimum to $+3\%$.
- D. Testing: Testing shall be performed as specified under Paragraph 3.11, "Field Quality Control".
- E. Subgrade compaction shall be as shown in subsection 3.8, "Grading".

3.8 GRADING

- A. General:
 1. Uniformly grade areas within limits of grading under this Section, including adjacent transition areas.
 2. Smooth subgrade surfaces within specified tolerances, and compact with uniform levels or slopes between points where elevations are shown or between such points and existing grades.

- B. Adjacent to Structures: Grade areas adjacent to structures to drain away from structures (including fences) and to prevent ponding.
- C. Walks: Shape surface of areas under walks to line, grade and cross-section, with finish surface not more than 1" above or below the required subgrade elevation.
- D. Pavements: Shape surface of areas under pavement to line, and grade and cross-section with finish surface not more than 1/2" above or below the required subgrade elevation.
- E. Under Building Slabs: Grade smooth and even, free of voids, compacted as specified and to required elevation. Provide final grades within a tolerance of 1/2" when tested with a 10' straightedge.
- F. Special Areas: In turfed areas or areas covered with gravel, stone, wood chips, or other special cover, grade to within not more than 1-inch above or below the required subgrade elevations.
- G. Subgrade Compaction: After excavating or grading, compact subgrade surfaces to the required minimum densities as follows for each area classification.

Area	Required Minimum Density (ASTM D 1557)
Beneath Structures, Tanks, and Buildings	95%
Beneath Asphalt Concrete Pavement	95%
Landscaped Areas	85%
Other areas not specifically described above	90%

3.9 PAVEMENT BASE COURSE

- A. Shoulders:
 - 1. Place shoulders along edges of base course to prevent lateral movement.
 - 2. Construct shoulders of acceptable soil materials, placed in such quantity to compact to thickness of each base course layer.
 - 3. Compact and roll at least a 12" width of shoulder simultaneously with compacting and rolling of each layer of base course.
- B. Placing:
 - 1. Place base course material on prepared subgrade in layers of uniform thickness conforming to indicated cross-section and thickness.
 - 2. Maintain to +/- 3% of optimum moisture content for compacting base material during placement operations.

3.10 MEMBRANE LINER INSTALLATION

- A. Prior to placing the top 1-foot of coarse aggregate, the subgrade base shall be compacted and then the leak detection trench shall be lined with 30-mil thick geomembrane liner as specified in this Section using waterproof joints.
- B. Laps shall be sealed by glue at all joints in accordance with the manufacturer's instructions.

- C. Placement of the 30 mil sheeting shall start at the outside circumference of the tank and be carried to the center of the tank.
- D. The Contractor shall not drive stakes through the membrane unless a method of membrane repair has been submitted and approved by the ENGINEER.
- E. The liner shall be cut/fitted to provide a uniform layer of liner material against the start and termination surfaces with a maximum fold thickness and layers at any point as shown on plans
- F. Liner shall be held tight to tank by tensioned bull tape with minimum wraps and spacing as shown on plans.

3.11 FIELD QUALITY CONTROL:

- A. General: Testing by a testing laboratory of materials, testing for moisture content during placement and compaction of fill materials, subgrade certification, fill placement observation, and of compaction requirements for compliance with technical requirements of the Specifications, geotechnical report, and building permit requirements shall be the CONTRACTOR's responsibility.
- B. The CONTRACTOR shall retain one or more independent testing agencies to perform all quality control testing, placement observation, and certification required for all materials except portland cement concrete. The required testing includes but is not limited to all soil, aggregates, imported gravel, aggregate base, asphalt concrete, and CLSM. Each independent testing agency shall perform the testing under the supervision of an engineer registered in California. Technicians performing the testing shall be certified to operate the equipment, employed by the testing agency, and have at least 1 full year of experience in the type of tests being performed.
- C. A Quality Control Plan shall be submitted by the CONTRACTOR to the ENGINEER at least 30 days before earthwork operations begin. It shall include the names, addresses, and phone number of the companies, the major personnel that will be involved, and resumes of the individuals that will be supervising, performing testing and observing CONTRACTOR'S earthwork operations. Copies of certificates held by the companies and the testing personnel shall be included.
- D. CONTRACTOR's independent testing agency shall perform all field and laboratory testing as described in these Specifications. Tests shall include specific gravity, sand equivalent, durability, abrasion resistance, soundness, gradation, Plasticity Index, compaction curves, lab and field moisture contents, compressive strength, and field density. Other tests shall be performed by the CONTRACTOR's independent testing agency as may be required to meet the Specifications. Mix design testing for portland cement concrete, CLSM, and asphalt concrete shall also be performed by the CONTRACTOR. Field sampling and testing for portland cement concrete will be performed by the ENGINEER.
- E. CONTRACTOR shall schedule all lab testing so that materials arriving at the site have been previously approved by the ENGINEER for use on the Project.
- F. All lab tests shall be performed on Samples obtained from the source of actual material that will be used on the Project. No test results more than 90 days old shall be submitted for review.

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- G. The location of field density tests shall be determined by the ENGINEER.
- H. Frequency of tests: Frequency will be not less than as follows:
1. For trenches:
 - a. In open fields: Minimum of 2 locations every 500 linear feet or less, for each lift
 - b. Along dirt, gravel, or paved roads or off traveled right-of-way: Minimum of 2 locations every 250 linear feet or less, for each lift
 - c. Crossing roads: Minimum of 2 locations along each crossing, for each lift
 2. For structural backfill: Minimum of 1 every 50 cubic yards.
 3. In embankment or fill: Minimum of 1 every 200 cubic yards.\
 4. Base material: Minimum of 1 every 50 cubic yards
 5. Footing Subgrade: 1 every 50 linear feet, for each lift.
 6. Paved Areas, Structure Subgrades: 1 every 500 square feet, but in no case less than 3 tests, for each lift.
- I. The ENGINEER may modify the frequency or spacing of tests to provide for testing at specific structures or locations where the ENGINEER deems additional testing is required. The CONTRACTOR shall perform such additional testing up to 15 percent above the frequency and total number of tests specified at no additional cost to the OWNER.
- J. Verbal and hand-written test results shall be provided to the ENGINEER and CONTRACTOR immediately following the field testing. Written test data sheets including daily reports shall be provided to the ENGINEER by close of business the day the tests were completed. Typed lab test results shall be provided to the ENGINEER not more than 3calendar days following completion of the tests; however, the results must be reviewed and approved by the ENGINEER prior to placing the material in the trenches or incorporating it in the Work.
- K. CONTRACTOR'S independent testing laboratory and geotechnical consultant shall provide a final project soils testing and observation report prior to final acceptance and release of payment in accordance with the contract requirements.
- L. Any location where a failing test occurs shall be recompacted and retested until a passing test is obtained. Specified testing values are minimums and no tests shall be accepted below the specified minimums. No material shall be placed over the failing test area until the failing material is recompacted and a passing test is obtained, and the area is approved by the ENGINEER. The limits of the failing test shall be assumed to be halfway between the failing location and the nearest passing location. Additional tests may be taken to determine the limits of unsatisfactory compaction.
- M. Along with the monthly progress pay application submittal, the CONTRACTOR shall provide to the ENGINEER a typed summary of all tests performed for the previous month including test location by station or location, elevation, depth below finished grade, material tested, wet density, moisture content, dry density, maximum density curve used, and percent relative compaction. Lab test results shall also be included in the monthly report with clear description of material tested, intended use on the Project, and a statement of compliance or noncompliance with the Project requirements..
- N. Any material which does not meet the Specifications shall be removed from the site and replaced with material in compliance.

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- O. Material which has been softened or modified prior to placing the overlying lift shall be removed down to material which is in compliance.

3.12 DISPOSAL OF EXCAVATED MATERIALS

- A. Material removed from the excavations that does not conform to the requirements for fill or is in excess of that required for backfill shall be hauled away from the project site and disposed of by CONTRACTOR in compliance with ordinances, codes, laws and regulations at no additional cost to the OWNER.
- B. Except and delineated on drawings, a site is not available to dispose of excess material.
- C. CONTRACTOR shall provide the OWNER a letter of acceptance from the property owner of any offsite location where CONTRACTOR temporarily or permanently stores excavated materials removed from the project site.

+ + END OF SECTION + +

SECTION 02360

MECHANICALLY STABILIZED EARTH FOUNDATION IMPROVEMENT SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Mechanically Stabilized Earth (MSE) foundation improvement system having structural geogrids and liners that interact with cohesionless soil to create a stiffened, high modulus raft foundation. Work consists of:
 - 1. Providing supplier representative for pre-construction meeting with Contractor and Engineer.
 - 2. Furnishing structural geogrid reinforcement as specified herein and shown on the construction drawings.
 - 3. Storing, cutting and placing structural geogrid reinforcement as specified herein and as shown on the construction drawings.
 - 4. Placement and compaction of reinforced fill within the MSE foundation improvement system as specified herein and as shown on the Drawings.
 - 5. Incidental earthwork as necessary to complete the MSE foundation improvement system specified herein and as shown on the construction drawings.
 - 6. Installing liners as per the construction drawings.
- B. Related Sections
 - 1. Section 02200 - Site Preparation
 - 2. Section 02300 - Earthwork
- C. Alternates
 - 1. Geotextile materials will not be considered as an alternate to geogrid materials for the MSE foundation improvement system. A geotextile may be used in the cross-section to provide separation, filtration or drainage; however, no structural contribution will be attributed to the geotextile.
 - 2. Alternate geogrid materials shall not be used unless submitted to the Engineer and approved in writing by the Engineer at least 7 business days before the bid opening. Polyester geogrids, whether coated or uncoated, will not be approved for use in calcareous, alkaline, or highly acidic environments including lime-treated or cement-treated soils, crushed limerock, or soils potentially exposed to leachate from cement, lime, or de-icing salts. In no case shall polyester geogrids be used in soils with a pH > 9.
 - 3. To be considered, submittal packages for alternate geogrid materials must include:
 - a. A sample of the alternate geogrid material and certified specification sheets.
 - b. Recommended installation instructions.
 - c. An explanation of engineering techniques used, and sample design drawings and calculations prepared and sealed by a Professional Engineer licensed in the State, and if applicable, the company registration information.
 - d. Additional information as required by the Engineer.
 - 4. Engineer approval of alternative systems and suppliers will be based upon the following considerations:
 - a. The reinforcement for the system has been reviewed and pre-approved for use.

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- b. The supplier has a large enough operation, adequate financial resources, and necessary experience to supply and support the construction on a reliable and timely basis.
- c. The material supplier/manufacturer has adequate Professional Engineers' Errors and Omissions insurance to cover the potential liability incurred as designer of record for the system.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb/ft³ (2,700 kN-m/m³))
- C. Tensar International Corporation, Inc. (TIC)
 - 1. Dimension™ Solution Software version 2.x

1.3 DEFINITIONS

- A. Geogrid - A polymeric grid formed by a regular network of integrally connected tensile elements with apertures of sufficient size to allow interlocking with surrounding soil, rock, or earth and function primarily as reinforcement.
- B. Multi-Layer Geogrid - A geogrid product consisting of multiple layers of grid which are not integrally connected throughout.
- C. Resistance to Long-Term Degradation - Resistance to loss of load capacity or structural integrity when subjected to chemically aggressive environments measured via EPA 9090 immersion testing. Values shown are typical values.
- D. Reinforced Fill - Compacted structural fill placed above and below the layers of geogrid, the reinforced fill boundaries shall be defined as the limits of the MSE foundation system as indicated on the construction drawings.

1.4 SYSTEM DESCRIPTION

- A. Design Requirements - The MSE foundation improvement system shall have been designed using the Dimension Solution Software or other approved methodology.
- B. Performance Requirements for the MSE Foundation Improvement System - Design calculations should substantiate that the proposed MSE foundation improvement system satisfies the allowable total and differential settlement and bearing capacity factor of safety design parameters as shown in the construction drawings or as required by the Engineer.

1.5 SUBMITTALS

- A. Submit geogrid product data sheet and certification from the manufacturer.
- B. Submit manufacturer's installation instructions and general recommendations.
- C. Working Drawings for Alternative Foundation Support Systems or Materials.

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1. Complete details, including working drawings and supporting design calculations, for any alternative approved foundation support systems or materials shall be submitted by the Contractor to the Engineer for review at least 4 weeks before construction. The Contractor shall submit 6 sets of detailed design calculations, construction drawings, and shop drawings for approval. The calculations and drawings shall be prepared and sealed by a Professional Engineer licensed in the State. The design submittal provided by the Contractor shall indicate the procedures by which the geogrid soil reinforcement will be installed. Working drawings and calculations shall include the following:
 - a. Existing ground elevations that have been verified by the Contractor for each location involving construction of a foundation system.
 - b. Complete design calculations substantiating that the proposed design satisfies the design parameters shown in the construction drawings or as required by the Engineer.
 - c. Complete details of all elements required for the proper construction of the system.
 - d. Earthwork requirements including specifications for material and compaction of backfill.
 - e. Other information requirements shown in the construction drawings or called out by the Engineer.
2. The Contractor shall not start work on any alternative foundation improvement system or material until such drawings have been approved by the Engineer. Approval of the working drawings shall not relieve the Contractor of any of his/her responsibility under the contract for the successful completion of the work.

1.6 QUALITY ASSURANCE

- A. Designer - The design of the MSE foundation improvement system shall be performed by a Professional Engineer who is registered in the State where the project is located and who is familiar with geotechnical engineering.
- B. Pre-Construction Conference - Before construction of the MSE foundation improvement system, hold a meeting at the site with the geogrid supplier, Contractor, and the Designer to review the construction procedure. Notify the Owner, the Engineer, and/or Architect at least 3 business days in advance of the time of the meeting. The representative of the geogrid supplier shall be available on an "as needed" basis during construction.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Storage and Protection
 1. Prevent excessive mud, wet concrete, epoxy, or other deleterious materials from coming in contact with and affixing to the geogrid materials.
 2. Store at temperatures above -20 degrees F (-29 degrees C).
 3. Rolled materials may be laid flat or stood on end.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Geogrid:
 1. The Tensar Corporation, Morrow, GA,

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2. Or Equal.

2.2 MATERIALS

- A. Structural Soil Reinforcement Geogrid – The geogrid component of the MSE foundation improvement system shall be TriAx™ TX5 or TX7 and shall be integrally formed and produced from a punched sheet of polypropylene which is then oriented in three substantially equilateral directions so that the resulting ribs shall have a high degree of molecular orientation, which continues at least in part through the mass of the integral node.
- B. The resulting geogrid structure shall have apertures that are triangular in shape, and shall have ribs with a depth-to-width ratio greater than 1.0.
- C. The geogrid shall have the nominal characteristics shown in the table below, and shall be certified in writing by the manufacturer to be TX5 or TX7:

TX5				
Properties	Longitudinal	Diagonal	Transverse	General
Rib pitch, mm (in)	40 (1.60)	40 (1.60)	-	
Mid-rib depth, mm (in)	-	1.3 (0.05)	1.2 (0.05)	
Mid-rib width, mm (in)	-	0.9 (0.04)	1.1 (0.04)	
Rib shape				rectangular
Aperture shape				triangular

TX7

Properties	Longitudinal	Diagonal	Transverse	General
Rib pitch, mm (in)	40 (1.60)	40 (1.60)	-	
Mid-rib depth, mm (in)	-	2.0 (0.08)	1.6 (0.06)	
Mid-rib width, mm (in)	-	1.0 (0.04)	1.3 (0.05)	
Rib shape				rectangular
Aperture shape				triangular

2.3 BACKFILL MATERIALS

- A. Reinforced Backfill - The fill material in the reinforced fill zone shall be cohesionless material with a maximum particle size of 2 inches, have less than 15 percent passing the No. 200 Sieve, and an internal friction angle of at least 30 degrees. In addition, if gravel is used as the fill material, it shall be well graded.

2.4 CONSTRUCTION DOCUMENTATION

- A. The Contractor shall establish and maintain quality control for foundation construction operations to assure compliance with contract requirements and maintain detailed records of their quality control for all construction operations. Three copies of all records of inspections and tests, and all of the records of corrective action taken, shall be furnished to the Engineer on a monthly basis when work under this section is being performed.

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. The Contractor shall check the geogrid upon delivery to verify that the proper material has been received. The geogrid shall be inspected by the Contractor to be free of flaws or damage occurring during manufacturing, shipping, or handling.

3.2 FOUNDATION PREPARATION

- A. Brush, trees, logs, topsoil, and other debris shall be removed as specified in the contract documents. No fill shall be placed on frozen ground. After clearing, grade smooth, compact, and establish the proper elevations as shown on the construction drawings or as directed by the Engineer.

3.3 STRUCTURAL GEOGRID INSTALLATION

- A. Structural geogrid shall be laid at the proper elevation and alignment as shown on the construction drawings.
- B. For square or rectangular footings, the structural geogrid shall be oriented such that the roll direction runs perpendicular to the roll direction of the previous layer of

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geogrid. For strip footings, the structural geogrid shall be oriented such that the roll length runs parallel to the footing direction. A minimum of 2 layers of structural geogrid are required for the MSE foundation improvement system.

- C. Geogrid may be temporarily secured in place with staples, pins, sand bags or backfill as required by fill properties, fill placement procedures or weather conditions, or as directed by the Engineer.
- D. Overlap
 - 1. Structural geogrid sections shall be overlapped as indicated on the construction drawings or as directed by the Engineer.
 - 2. Minimum overlap is 1 foot (300 millimeters).
 - 3. Care shall be taken to ensure that structural geogrid sections do not separate at overlaps during construction. To prevent separation, simple joining methods may be utilized, such as wire ties, plastic ties, hog rings, staples or hooks. Joint spacings of 20 to 30 feet are normally adequate to prevent grid separation at overlaps.

3.4 GRANULAR FILL PLACEMENT OVER STRUCTURAL GEOGRID

- A. The fill in the reinforced zone shall be placed in lift thickness as directed in the construction drawings or as directed by the Engineer. The fill in the reinforced zone shall be compacted to a density of at least 95 percent maximum density as determined by Modified Proctor Test (ASTM D1557). Otherwise, the fill in the reinforced zone shall be placed in lifts and compacted as directed under Section 02300. Granular fill material shall be placed, spread and compacted in such a manner that minimizes the development of wrinkles in the geogrid and/or movement of the geogrid.
- B. A minimum loose fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid. When integrally-formed geogrids are used, rubber-tired equipment may pass over the geogrid reinforcement at slow speeds (less than 10 mph). When coated geogrids or geogrids composed of small-diameter fibers are used, rubber-tired equipment shall not be allowed directly on the geogrid. Sudden braking and sharp turning movements shall be avoided.
- C. Pre-wet granular fill below the tank concrete floor slab and wall footing to a saturated surface dry condition immediately prior to pouring concrete.

3.5 REPAIR

- A. Any geogrid damaged during installation shall be replaced by the Contractor at no additional cost to the Owner.
- B. Coated geogrids shall not be used if the coating is torn, shedding, cracked, punctured, flawed or cut, unless a repair procedure is carried out as approved by the Engineer. The repair procedure shall include placing a suitable patch over the defective area or applying a coating solution identical to the original coating.

- C. Dewater measures, as discussed in the project specifications, should be constructed to maintain groundwater at least two feet below subgrade and to maintain a dry, firm, and unyielding work area.

3.6 PROTECTION

- A. Follow the Manufacturer's recommendations regarding protection from exposure to sunlight.

3.7 MEMBRANE LINER INSTALLATION

- A. Prior to placing the top 1-foot of coarse aggregate, the compacted subgrade base and leak detection trench shall be lined with 30-mil thick sheeting as specified in this Section using waterproof joints.
- B. Laps shall be sealed by glue at all joints in accordance with the manufacturer's instructions.
- C. Placement of the 30 mil sheeting shall start at the outside circumference of the tank and be carried into the center of the tank.
- D. The Contractor shall not drive stakes through the membrane unless an acceptable method of membrane repair is utilized.

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SECTION 02390

RIPRAP

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Administrative Submittals: Trip tickets showing source, type, and weight of each load of material delivered to site.
- B. Quality Control Submittals:
 - 1. Certified Test Results for Each Class of Riprap for Each Quarry Used to Supply Material:
 - a. Gradation.
 - b. Abrasion resistance.
 - c. Bulk density.

PART 2 - PRODUCTS

2.1 GEOTEXTILES

- A. Provide geotextile under all Riprap.
- B. Geotextile shall be non-woven, synthetic, UV resistant fabric.

2.2 RIPRAP

- A. Riprap shall conform to the following specification:
 - 1. Conforming to Section 72-2 of the CalTrans Standard Specifications
- B. Free of roots and other organic or deleterious matter.
- C. Hard and durable quarry stone free from fractures, bedding planes, pronounced weathering, and earth or other adherent coatings.
- D. Minimum Dimension of Individual Pieces: Not less than 1/3 maximum dimension.
- E. Abrasion Resistance: Maximum 35 percent wear as determined in accordance with ASTM C535.
- F. Bulk Density: Minimum 150 pounds per dry cubic foot.
- G. Gradation: Smaller pieces shall generally fill voids between larger pieces without either excess or deficiency of one or more sizes of stone.

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PART 3 - EXECUTION

3.1 PLACING RIPRAP

- A. Utilize power and hand tools to produce a subgrade that is true to the slope or grades indicated.
- B. Place geotextile prior to placing riprap. Overlap seams at least 24 inches.
- C. Place riprap as follows:
 - 1. Intermix different sizes of pieces to eliminate segregation and to fill voids between larger pieces with smaller pieces and work surface free from irregularities.
 - 2. Use placement and intermixing methods that avoid disturbing prepared subgrade or damaging existing facilities, completed Work, or adjacent property.

+ + END OF SECTION + +

SECTION 02770

ASPHALT CONCRETE PAVING

PART 1 - GENERAL

1.1 SUBMITTALS

A. Information Submittals:

1. Asphalt Concrete Mix Formula:
 - a. Submit minimum of 15 days prior to start of production.
 - b. Submittal to include the following information:
 - 1) Gradation and portion for each aggregate constituent used in mixture to produce a single gradation of aggregate within specified limits.
 - 2) Bulk specific gravity for each aggregate constituent.
 - 3) Measured maximum specific gravity of mix at optimum asphalt content determined in accordance with ASTM D2041.
 - 4) Percent of asphalt lost due to absorption by aggregate.
 - 5) Percentage of asphalt cement, to nearest 0.1 percent, to be added to mixture.
 - 6) Optimum mixing temperature.
 - 7) Optimum compaction temperature.
 - 8) Temperature-viscosity curve of asphalt cement to be used.
2. Test Report for Asphalt Cement:
 - a. Submit minimum 10 days prior to start of production.
 - b. Show appropriate test method(s) for each material and the test results.
3. Statement of qualification for independent testing laboratory.
4. Test Results:
 - a. Mix design.
 - b. Asphalt concrete core.
 - c. Gradation and asphalt content of uncompacted mix.

1.2 QUALITY ASSURANCE

A. Qualifications:

1. Independent Testing Laboratory: In accordance with ASTM E329.
2. Asphalt concrete mix formula shall be prepared by approved certified independent laboratory under the supervision of a certified asphalt technician.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Temperature: Do not apply asphalt materials or place asphalt mixes when ground temperature is lower than 10 degrees C (50 degrees F) or air temperature is lower than 4 degrees C (40 degrees F). Measure ground and air temperature in shaded areas away from heat sources or wet surfaces.
- B. Moisture: Do not apply asphalt materials or place asphalt mixes when application surface is wet.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Asphalt Material: Conform to the following specification:
 - 1. Asphalt Material shall be a hot mix asphalt concrete, consisting of a mixture of mineral aggregate and paving asphalt conforming to Section 92 of the Caltrans Standard Specifications, PG 64-10.
 - 2. Seal coat material shall be conforming to Section 37 of the Caltrans Standard Specifications.

PART 3 - EXECUTION

3.1 GENERAL

- A. Traffic Control:
 - 1. In accordance with all applicable specification sections and laws.
 - 2. Minimize inconvenience to traffic but keep vehicles off freshly treated or paved surfaces to avoid pickup and tracking of asphalt.
- B. Driveways: Repave driveways from which pavement was removed. Leave driveways in as good or better condition than before start of construction.

3.2 LINE AND GRADE

- A. Provide and maintain intermediate control of line and grade, independent of underlying base, to meet finish surface grades and minimum thickness.
- B. Shoulders: Construct to line, grade, and cross-section shown.

3.3 PREPARATION

- A. Prepare subgrade as specified.
- B. Thoroughly coat edges of contact surfaces with emulsified asphalt or asphalt cement prior to laying new pavement. Prevent staining of adjacent surfaces.

3.4 PAVEMENT APPLICATION

- A. General: Place asphalt concrete mixture on approved, prepared base in conformance with this section.
- B. Pavement Mix:
 - 1. Prior to Paving:
 - a. Sweep primed surface free of dirt, dust, or other foreign matter.
 - b. Patch holes in primed surface with asphalt concrete pavement mix.
 - 2. Place asphalt concrete pavement mix in one single lift.
 - 3. Total Compacted Thickness: As shown on Drawings.
 - 4. Apply such that meet lines are straight and edges are vertical.
 - 5. Collect and dispose of segregated aggregate from raking process. Do not scatter material over finished surface.

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6. After placement of pavement, seal meet line by painting a minimum of 150 millimeters (6 inches) on each side of joint with cut-back or emulsified asphalt. Cover immediately with sand.
- C. Compaction: Roll until roller marks are eliminated and density of 92 percent of measured maximum density determined in accordance with ASTM D2041.
- D. Tolerances:
1. General: Conduct measurements for conformity with crown and grade immediately after initial compression. Correct variations immediately by removal or addition of materials and by continuous rolling.
 2. Completed Surface or Wearing Layer Smoothness:
 - a. Uniform texture, smooth, and uniform to crown and grade.
 - b. Maximum Deviation: 1/8 inch from lower edge of a 3.6-meter (12-foot) straightedge, measured continuously parallel and at right angle to centerline.
 - c. If surface of completed pavement deviates by more than twice specified tolerances, remove and replace wearing surface.
 3. Transverse Slope Maximum Deviation: 1/4 inch.
- E. Seal Coat:
1. General: Apply seal coat of paving grade or emulsified asphalt to finished surface at longitudinal and transverse joints, joints at abutting pavements, areas where asphalt concrete was placed by hand, patched surfaces, and other areas as directed by ENGINEER.
 2. Preparation:
 - a. Surfaces that are to be sealed shall be maintained free of holes, dry, and clean of dust and loose material.
 - b. Seal in dry weather and when temperature is above 2 degrees C (35 degrees F).
 3. Application:
 - a. Fill cracks over 1.5 millimeters (1/16 inch) in width with asphalt-sand slurry or approved crack sealer prior to sealing.
 - b. When sealing patched surfaces and joints with existing pavements, extend minimum 150 millimeters (6 inches) beyond edges of patches.

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SECTION 02810

IRRIGATION SYSTEM

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Work includes all labor, material, equipment, appliances, fixtures and tests necessary for a new operating landscape irrigation system as indicated on the Drawings and as specified herein.
- B. Work included in this Section:
 - 1. Preparation
 - 2. Installation
 - 3. Temporary repairs
 - 4. Field quality control
 - 5. Irrigation system operation demonstration
 - 6. Cleanup
 - 7. Site observation before acceptance
- C. All irrigation system work shall be in accordance with City of Roseville Recycled Water System Construction Standards and all associated requirements.
- D. Irrigation system shall be for use with City of Roseville Recycled Water System, including all requirements of ON-SITE RECYCLED WATER FACILITIES per section 141-12 of City of Roseville Recycled Water System Construction Standards.

1.2 SUBMITTALS

- A. Provide System Irrigation Plan for review by ENGINEER.
 - a. Irrigation system quantities shown on the Drawings are for estimation only. Provide the actual materials and equipment quantities.
 - b. Shop drawing showing proposed irrigation system location and depths of proposed system components.
 - c. List of all proposed materials and equipment to be used indicated by description, manufacturer and model number, if applicable. Include catalog cuts where applicable (see Materials and Equipment submittal requirements this section).
 - d. Written documentation that the irrigation system materials and equipment listed on the Drawings is available and in compliance with requirements herein and City standards. Any substitutions required due to unavailability must be requested in writing before confirmation of ordering.
 - e. A schedule identifying system component procurement, storage, and anticipated delivery dates for review and approval.
- 2. In addition to ENGINEER review of plan in accordance Section 01330 Submittal Procedures, CONTRACTOR's plan will be reviewed City of Roseville Parks and Recreation Department.
 - a. CONTRACTOR shall submit, upon request by ENGINEER, an additional submittal addressing City of Roseville Parks and Recreation Department submittal review comments and format requirements.

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- B. Materials and Equipment: Submit the data on the following materials and equipment in accordance with Section 01330, Submittal Procedures.
1. Pipe and fittings
 2. Pipe solvent and primer
 3. Wire
 4. Wire connectors
 5. Valves
 6. Valve boxes
 7. Drip emitters
 8. Irrigation controllers

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use only new materials of brands and types noted on the Drawings, specified herein, or equals as approved by the Engineer
- B. Pipe and Fittings
1. All exposed irrigation pipe shall be Steel Pipe:
 - a. Galvanized standard weight schedule 40 steel water pipe complying with ASTM A53 with threaded, galvanized standard weight malleable iron fittings and/or couplings.
 2. All buried irrigation pipe shall be PVC Pipe:
 - a. Pipe: Schedule 40 Polyvinyl Chloride (PVC). Type I, Grade I or Class 12454-B conforming to ASTM D1784 and ASTM D1785.
 - b. Fittings: Schedule to match pipe above, ASTM D2466 and ASTM D2467 for socket weld type and Schedule 80 ASTM D2464 for threaded type.
 - c. Solvent socket weld except where connection to threaded valves and equipment may require future disassembly.
 - d. Solvent Cement: As recommended by the pipe and fitting manufacturer conforming to ASTM D2564.
- C. Valves and Valve Boxes
1. Shutoff valves: PVC ball valves:
 - a. Service: Water.
 - b. Features:
 - 1) Rated 150 psi at 73 degrees F
 - 2) ASTM D1784, Type I, Grade 1 polyvinyl chloride body, ball, and stem, end entry
 - 3) Double union design, solvent-weld socket ends
 - 4) EPDM or Teflon seat
 - 5) EPDM O-rings and stem seals
 - c. Manufacturers and Products:
 - 1) Nibco; Chemtrol Tru-Bloc.
 - 2) ASAHI/America; Duo-Bloc.
 - 3) Or Equal.
 2. Automatic control valves:
 - a. Electrically remote-control valves shall be Rain Bird PESB-D Series, or equal, size as noted on the Drawings. Valve shall include a pressure-regulating module.
 - b. Each valve for drip irrigation system shall also include a Rain Bird PRB-QKCHK-100 filter set immediately downstream of the control valve

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- c. Each electric remote control valve shall be provided with a PVC ball valve for manual flow adjustment
- 3. Valve Boxes
 - a. 12" x 17" x 12" deep rectangular box for electrical remote control valves as manufactured by Carson Products, Inc., Model 1419-12, with bolt-down cover, or approved equal.
- D. Sprinkler Heads and Drip Emitters
 - 1. Drip Emitters:
 - a. Rain Bird pressure-compensating modules, point-source emission devices, threaded inlet model PC-24, orange, 24 gph, or equal.
 - b. Set emitters on riser nipples
- E. Automatic irrigation controller
 - 1. The automatic controller shall be Irri-trol MC-4 4-station controller, or equal.
 - 2. Transformer input: 120 VAC, 60 Hz
 - 3. Transformer output: 24 VAC
 - 4. Enclosure:
 - a. Provide a vandal-resistant controller enclosure made of cold-rolled steel. Enclosure shall be Model No. SB-18CR, manufactured by V.I.T. Products, or equal.
 - b. Enclosure shall be painted with powder-coated finish, forest green color. Finish shall be applied by the enclosure manufacturer before delivery to the project site. Submit color sample for approval before ordering.
- F. Control Wiring
 - 1. Connections between the automatic controller and the electric control valves shall be made with direct burial copper wire, AWG-UF 600 volt.
 - 2. Control wire shall be a different color wire for each control valve. Common wire shall be white. Wire color shall be continuous over its entire length.
 - 3. Install wires in accordance with the valve manufacturer's specifications and wire charts.
 - 4. Wire size shall not be less than #14 gauge for control wires and no less than #12 gauge for common wire.
 - 5. Wire Splices shall be made with either Scotch-Lok #3576 "Connector Sealing Packs", Rain Bird "Snap Tite" wire connectors, or approved equal. Use one splice per connector sealing pack.
 - 6. Field wire splices between the automatic controller and the electrical control valves shall not be allowed without prior approval of Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Trenching
 - 1. Trenching shall be conducted in a manner that minimizes impacts on any retained vegetation.
 - 2. Excavate trenches straight and support pipe continuously on bottom of trench. Lay pipe to an even grade. Trenching excavation shall follow the layout as indicated on the Drawings.
 - 3. Cover: Provide the following minimum soil cover:
 - a. 18" for pressure supply lines
 - b. 12" for non-pressure lines

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- c. 18" for control wire
- d. 24" for sleeve pipe and conduit

B. Backfilling

- 1. Backfill material and compaction requirements shall conform to the requirements of Section 02300 and the pipe trench standard detail.

C. Irrigation Assemblies

- 1. Routine of irrigation lines as indicated on the Drawings is diagrammatic only. Install lines and various assemblies in such a manner as to conform to the Drawings.
- 2. At no time shall multiple assemblies be installed in plastic lines. Provide each assembly with its own outlet.
- 3. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.
- 4. On PVC to metal pipe connections, work the metal connections first. Teflon tape or approved equal shall be used on all threaded PVC to PVC and threaded PVC to metal joints. Apply a light wrench pressure only. Where threaded PVC connections are required, use threaded PVC adapters into which the pipe may be solvent welded.

D. Control Wire Installation

- 1. Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines, wherever possible.
- 2. Wiring shall be set at a minimum 6" distance from pipes.
- 3. Where more than one wire is placed in a trench, the wires shall be taped together at intervals of 10 feet.
- 4. An expansion curl shall be provided within 3 feet of each wire connection. Expansion curl shall be of sufficient length at each splice connection at each electric control valve so that in case of repair the valve bonnet may be brought to the surface without disconnecting the control wires. Control wires shall be laid loosely in the trench without stress or stretching control wire conductors.
- 5. When control wiring is trenched separately from main-line trenches, continuous warning tape shall be installed with the wiring.

E. Drip Irrigation

- 1. Install drip irrigation systems to adequately water the plant materials at locations shown on the Drawings and as prescribed herein.
- 2. The major portions of the irrigation system shall be installed before the installation of any plants. Irrigation of all plants shall begin the same day as plant installation and shall meet the requirements of this section.
- 3. All irrigation installation operations must be conducted in coordination with plant location field marking and planting hole excavation. Plant locations must be field marked and approved, and planting holes must be excavated before installation of individual drip emitters.
- 4. PVC piping and fittings shall connect drip nozzles to lateral line pipe. Provide the required couplings and fittings for emitter to pipe connections. All PVC lateral line piping shall be set below grade. At no time shall flexible tubing be used.
- 5. After its pipe installation is complete, each drip system shall first be flushed for 30 minutes minimum, to ensure that debris, rocks and dirt are removed. Ensure that all sites are being irrigated and that flow is continuous. The drip systems shall be capped while the system is still operating to ensure that no debris, rocks, or dirt enter the pipes. The drip systems shall then have the emitters installed.

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6. Drip emitters shall be set on grade at plant locations. Before installation, stake and mark the locations of the drip risers for approval by the Engineer. For all container plants, drip emitters shall be set within the planting basin. Provide 2 drip emitters per plant, offset 180-degrees.
7. Emitters shall be connected to the PVC piping at the individual planting locations. Emitters shall be installed while the system is operating to ensure that no debris enters the lines. The emitters shall be placed adjacent to the root crown after plant installation. After all the emitters have been installed on each run, that line shall be rechecked under pressure for leaks around the emitter or emitter coupler. Any leaks shall be repaired to ensure a fully-operational system.

F. Controller

1. Controller location shall be as shown on the Drawings.
2. The controller shall be installed according to the manufacturer's specifications inside the vandal-proof controller enclosure.
3. Connect all control wires from the valves
4. All wires required above ground shall be placed in metal conduits painted flat black.

3.2 TESTING

- A. Test pressure piping under hydrostatic pressure of 150 psi for a period of 2 hours. Testing of pressure pipe shall occur before installation of any electric control valves. Allowable leakage is specified in Section 15990.

3.3 IRRIGATION SYSTEM OPERATION DEMONSTRATION

- A. The entire irrigation system shall be under complete and automatic operation for a period of 7 days before beginning of planting.
- B. Operation will be witnessed by Engineer.

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SECTION 02830

CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings: Detailed information and specifications for materials, finishes, and dimensions.
- B. Samples: Approximately 6 inches square, or 6 inches long of posts, rails, braces, fabric, wire, ties, and fittings.
- C. Quality Control Submittals:
 - 1. Manufacturer's recommended installation instructions.
 - 2. Evidence of Supplier and installer qualifications.

1.2 SCHEDULING AND SEQUENCING

- A. Complete necessary site preparation and grading before installing chain link fence and gates.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Match style, finish, and color of each fence component with that of other fence components.

2.2 CHAIN LINK FENCE FABRIC

- A. PVC-coated galvanized fabric conforming to ASTM F668, Class 1 or 29.
 - 1. Color: Black.
 - 2. Manufacturers and Products:
 - a. Colorbond Corp., Raritan, NJ; Colorbond II.
 - b. Cyclone Fence, United States Steel, Chicago, IL; Cyclone Color Fence System.
- B. Height: 72 inches, unless otherwise shown.
- C. Wire Gauge: No. 9.
- D. Pattern: 2-inch diamond-mesh.
- E. Diamond Count: Manufacturer's standard and consistent for fabric furnished of same height.
- F. Loops of Knuckled Selvages: Closed or nearly closed with space not exceeding diameter of wire.
- G. Wires of Twisted Selvages:

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1. Twisted in a closed helix three full turns.
2. Cut at an angle to provide sharp barbs that extend minimum 1/4-inch beyond twist.

H. Privacy Slats:

1. HDPE or PVC Top Lock slats sized for No. 9 gauge 2-inch mesh, approximately 1 3/32-inches wide.
2. Length to match the fabric height minus 2 inches.
3. Color selected by OWNER.

2.3 POSTS

A. General:

1. Strength and Stiffness Requirements: ASTM F669, Heavy Industrial Fence, except as modified in this section.
2. Steel Pipe: ASTM F1083.
3. Roll-Formed Steel Shapes: Roll-formed from ASTM A570, Grade 45, steel.
4. Protective Coatings:
 - a. Zinc Coating: ASTM F1234, Type A external and internal coating.
5. Color Coating: ASTM F1043, minimum 10 mils thickness over zinc coating to match color of chain link fabric.

B. Line Posts:

1. Steel Pipe:
 - a. Outside Diameter: 2.375-inch.
 - b. Weight: 3.65 pounds per foot.
2. Roll-Formed Steel C Shape:
 - a. Outside Dimensions: 2.25-inch by 1.625-inch.
 - b. Weight: 2.70 pounds per foot.
3. Steel H-Section:
 - a. Outside Dimensions: 2.25-inch by 1.70-inch.
 - b. Weight: 3.26 pounds per foot.

C. End, Corner, Angle, and Pull Posts:

1. Steel Pipe:
 - a. Outside Diameter: 2.875-inch.
 - b. Weight: 5.79 pounds per foot.

D. Posts for Removable Fence Panels: As specified for end, corner, angle, and pull posts.

E. Posts for Swing Gates:

1. Material: ASTM F1043 Group IA ASTM F1083 schedule 40 pipe.
2. Gate Post Size per ASTM F900:

For gate fabric height up to and including 6 feet	
Gate Leaf Width	Post Outside Diameter
Up to 4 ft	2.375-inch
Over 4 ft to 10 ft	2.875-inch
Over 10 ft to 18 ft	4.0-inch
For gate fabric height over 6 feet to 12 feet	
Up to 6 ft	2.875-inch
Over 6 ft to 12 ft	4.0-inch
Over 12 ft to 18 ft	6.625-inch
Over 18 ft to 24 ft	8.625-inch

- a. Roll-formed steel shapes may be substituted for steel pipe posts for gate leaf widths up to 6 feet and fabric heights up to 8 feet.
 - 1) Outside Dimensions: 3.5-inch by 3.5-inch.
 - 2) Weight: 4.85 pounds per foot.

2.4 TOP RAILS AND BRACE RAILS

- A. Galvanized steel pipe or roll-formed steel C shapes, color-coated.
- B. Protective Coatings: As specified for posts.
- C. Color Coating: ASTM F1043, minimum 10 mils thickness over zinc coating to match color of chain link fabric.
- D. Strength and Stiffness Requirements: ASTM F669, Top Rail, Heavy or Light Industrial Fence.
- E. Steel Pipe:
 - 1. ASTM F1083.
 - 2. Outside Diameter: 1.66-inch.
 - 3. Weight: 2.27 pounds per foot.
- F. Roll-Formed Steel C Shapes:
 - 1. Roll formed from ASTM A570, Grade 45.
 - 2. Outside Dimensions: 1.625-inch by 1.25-inch.
 - 3. Weight: 1.40 pounds per foot.

2.5 FENCE FITTINGS

- A. General: In conformance with ASTM F626, except as modified by this article.
- B. Post and Line Caps: Designed to accommodate passage of top rail through cap, where top rail required.
- C. Tension and Brace Bands: No exceptions to ASTM F626.
- D. Tension Bars:
 - 1. One-piece.
 - 2. Equal in length to full height of fabric.
- E. Truss Rod Assembly: 3/8-inch diameter.
- F. Barb Arms: 45-degree arms for supporting three strands of barbed wire.

2.6 TENSION WIRE

- A. Zinc-coated steel marcelled tension wire conforming to ASTM A824, Type II, Class 2.

2.7 GATES

- A. General:
 - 1. Gate Operation: Opened and closed easily by one person.

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2. Welded Steel Joints: Paint with zinc-based paint.
 3. Chain Link Fabric: Attached securely to gate frame at intervals not exceeding 15 inches.
- B. Swing Gates: ASTM F900.
1. Hinges:
 - a. Furnished with large bearing surfaces for clamping in position.
 - b. Designed to swing either 180 degrees outward, 180 degrees inward, or 90 degrees in or out, as shown, and not twist or turn under action of gate.
 2. Latches: Plunger bar arranged to engage stop, except single gates of openings less than 10 feet wide may each have forked latch.
 3. Gate Stops: Mushroom type or flush plate with anchors, suitable for setting in concrete.
 4. Locking Device and Padlock Eyes: Integral part of latch, requiring one padlock for locking both gate leaves of double gates.
 5. Hold-Open Keepers: Designed to automatically engage gate leaf and hold it in open position until manually released.
- C. Fabric Salvage: Knuckled.
- D. Appurtenances and Framework: As specified.

2.8 REMOVABLE FENCE PANELS

- A. Panel Length:
1. Equal division of total length of removable fence section.
 2. Maximum 10 feet.
- B. Frames: ASTM F1184, Type I.

2.9 CONCRETE

- A. Provide as specified in Section 03300, CAST-IN-PLACE CONCRETE.

PART 3 - EXECUTION

3.1 GENERAL

- A. Install chain link fences and gates in accordance with ASTM F567, except as modified in this section, and in accordance with fence manufacturer's recommendations, as approved by ENGINEER. Erect fencing in straight lines between angle points.
- B. Provide all necessary hardware for a complete fence and gate installation.

3.2 PREPARATION

- A. Establish locations of fence lines, gates, and terminal posts.

3.3 POST SETTING

- A. Driven posts are not acceptable.

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- B. Post Hole Depth:
 - 1. Minimum 3 feet below finished grade.
 - 2. 2 inches deeper than post embedment depth below finish grade.
- C. Backfill post holes with concrete to 2 inches above finished grade.
- D. Before concrete sets, crown and finish top of concrete to readily shed water.

3.4 BRACING

- A. Brace gate and corner posts diagonally to adjacent line posts to ensure stability.

3.5 TOP RAILS

- A. Install top rail sleeves with springs at 105 feet maximum spacing to permit expansion in rail.

3.6 CHAIN LINK FABRIC

- A. Do not install fabric until concrete has cured minimum 7 days.
- B. Install fabric with twisted and barbed selvage at top.

3.7 GATES

- A. Hang gates and adjust hardware so gates operate satisfactorily from open or closed position.
- B. Set gate stops in concrete to engage center drop rod or plunger bar.

3.8 ELECTRICAL GROUNDING

- A. Ground fences in accordance with applicable requirements of IEEE C2, National Electrical Safety Code.

3.9 FIELD QUALITY CONTROL

- A. Gate Tests: Prior to acceptance of installed gates and gate operator systems, demonstrate proper operation of gates under each possible open and close condition specified.

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SECTION 02850

FABRICATED STEEL GATES AND OPERATORS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings: Detailed drawings, information and specifications for materials, finishes, and dimensions.
- B. Quality Control Submittals:
 - 1. Manufacturer's recommended installation instructions.
 - 2. Evidence of Supplier and installer qualifications.

1.2 SCHEDULING AND SEQUENCING

- A. Complete necessary site preparation and grading before installing fabricated steel gates and operators.

PART 2 - PRODUCTS

2.1 FABRICATED STEEL GATES

- A. Fabricate steel access gates and person gates as shown on the Drawings.
- B. Shop fabricate steel gates and deliver to site completely finished and painted.
 - 1. Clean all weld residue and grind welds smooth prior to painting.
 - 2. Paint with System 300, as described in Section 09900 PAINTING.
- C. Steel Frame: Provide steel fabricated in accordance with Section 05500 MISCELLANEOUS METALS.
- D. Metal Panel:
 - 1. Galvanized steel sheet meeting ASTM A653, G-60. Provide profile and thickness shown on the Drawings.

2.2 FABRICATED STEEL GATE OPERATORS

- A. Provide gate operators as shown on the Drawings, suitable for operation of the gates, as shown on the drawings.
- B. Features:
 - 1. Motor: 1 HP, 460 volt, three phase, 60 Hz. Provide size "O" contactor type magnetic starter, reversing, prewired with overcurrent and overload protection.
 - 2. Speed Reduction: Heavy duty sprockets, belt and drive chain, permanently lubricated.
 - 3. Housing: Heavy gage, weather-resistant, lockable, galvanized steel, NEMA 3R enclosure.
 - 4. Drive Chain: No. 50 minimum. Provide all mounting hardware required to connect to gate.

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5. Safety Clutch: Adjustable friction type, designed to slip if gate meets obstruction.
6. Magnetic Brake: Solenoid activated disc type, designed to reduce gate coasting.
7. Emergency Operation: Manual no tool disconnect in case of power failure.
8. Limit Switches: Adjustable rotary type, full-open and full-closed limit switches.
9. Audible Warning: Provide audible warning signal during gate operation, suitable for outdoor installation.
10. Capable of operating 1200 pound gate.

C. Controls:

1. All controls shall be suitable for operation of a 120 volt, single phase, 60 hertz power supply. Provide a fused 480/120 volt transformer, 125 percent sized, to provide power to all controls and devices. Provide all controls, transformers, relays and other equipment as necessary for a complete and functional system installed in a NEMA 3R enclosure.
2. Gate operators shall be controlled as follows:
 - a. Local Operation Station: Provide key-operated local operation station, mounted on wall outside of gate location.
 - b. Time Delay System: Close on entry after set time delay.
 - c. Magnetic Vehicle Detectors: Automatic open on vehicle exit.
3. Manufacturer of the automatic gate operators and controls shall provide a "total system" with all accessories required to operate according to the following:
 - a. Magnetic "loop" vehicle ejector shall prevent premature gate closure. The vehicle detection system shall hold the gate in an open position until the vehicle clears the gate area. When the vehicle clears the gate area, the gate operator shall automatically close the gate, after a pre-set period, adjustable from 3 to 90 seconds. Should the gate be closing as a vehicle reaches the gate area, the gate shall automatically reverse to the open position and the timer shall reset for a full time cycle.
 - b. Provide maximum run timer to limit time of operation in any one direction to a maximum of 90 seconds and to delay reversal of gate 1.5 seconds when signaled from magnetic vehicle detection system.

D. Product and Manufacturer:

1. Model 570 for cantilever sliding gate, with all accessories and controls required to provide operation described herein by Stanley Vemco Division of the Stanley Works.
2. Model LSG for cantilever sliding gate, with all accessories and controls required to provide operation described herein by Robot Industries, Incorporated.
3. Or equal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install all gates level, plumb and in-line for smooth operation.
- B. Install gate operators to provide smooth operation of gate, as described above.
- C. Provide all miscellaneous fittings and accessories required for a complete installation of all gates.
- D. Provide padlock hasps for all gates, attached to adjacent fencing to provide for a secure gate system utilizing OWNER's padlocks.

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- E. Touch up all damaged paint after installation.

3.2 FIELD QUALITY CONTROL

- A. Gate Tests: Prior to acceptance of installed gates and gate operator systems, demonstrate proper operation of gates under each possible open and close condition specified.

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SECTION 02900

LANDSCAPE PLANTING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish all materials, labor, transportation, services, and equipment necessary to install landscape planting as shown on the Drawings and as specified herein. Any and all permits, fees, bonds, and observations necessary to perform and complete portion of the work shall be included.
- B. Work included in this Section:
 - 1. Verification of Existing Conditions
 - 2. Surface Drainage of Planting Areas
 - 3. Preparation
 - 4. Plant Installation
 - 5. Watering
 - 6. Cleanup
 - 7. Site Observation Before Acceptance
 - 8. Site Observation Schedule

1.2 REQUIREMENTS OF REGULATORY AGENCIES

- A. All Federal, State, and local laws and regulations governing this work are hereby incorporated into and made part of this Section. When this Section calls for certain materials, workmanship or a level of construction that exceeds the level of Federal, State, or local requirements, the provisions of this Section shall take precedence.

1.3 REFERENCE STANDARDS

- A. All plant material shall be true to botanical and common name as indicated in:
 - 1. McClintock, E. M., and A. T. Leiser. 1979. *An Annotated Checklist of Woody Ornamental Plants of California, Oregon, and Washington*. University of California, Division of Agricultural Sciences. Berkeley, CA.
 - 2. American Nursery & Landscape Association. 2004. *American Standard for Nursery Stock*. ANSI Z60.1-2004. Washington, DC.
 - 3. L. H. Bailey Hortorium of Cornell University. 1976. *Hortus Third: A Concise Dictionary of Plants Cultivated in the United State and Canada*. Macmillan. New York, NY.
 - 4. Hickman, J.C. (ed.). 1993. *The Jepson Manual: Higher Plants of California*. University of California Press. Berkeley, CA.
 - 5. U.S. Natural Resources Conservation Service. 2011. Plants Database. Available: <<http://plants.usda.gov>>. Last updated May 16, 2011.
- B. All plant material shall conform to the California State Department of Agriculture's regulations for nursery observations, rules and ratings.
 - 1. Quality Control
- C. Manufacturer's directions and drawings shall be followed in all cases where the manufacturers of articles used in this Specification furnish directions covering points not shown in the Drawings and Specifications.

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- D. Upon execution of the order, the Engineer has the option of either inspecting the plant material at the nursery, requesting representative color photos or inspecting the material as it is being delivered to the site for conformity to the Drawings and Specifications.
 - 1. Such approvals shall not impair the right of additional observations during further progress of the Work.
- E. Any tagging of plant material by the Engineer does not constitute his/her approval of the plant materials' health and vigor. The health and vigor of the plant material is the sole responsibility of the Contractor.
- F. The Engineer reserves the right to refuse observation, if in his judgment; a sufficient quantity of plant material is not available for observation at that time.
- G. All planting shall be for use with City of Roseville Recycled Water System as irrigation water source.

1.4 QUALIFICATIONS

- A. The nursery that supplied planting materials shall be a reputable nursery.

1.5 SUBMITTALS

- A. Provide Planting Plan for review by ENGINEER.
 - 1. Submittal shall include at minimum the following:
 - a. List of all proposed materials and equipment to be used indicated by description, manufacturer and model number, if applicable. Include catalog cuts where applicable.
 - b. A copy of the plant procurement order from the nursery including the name, address, and phone number of said nursery.
 - c. Plant quantity list.
 - d. Plant quantities shown on the Drawings are for estimation only. Provide the actual planting quantities.
 - e. List all plants indicated by botanical name, common name, quantity, size, nursery and location and any specific remarks, (e.g., "unable to locate," "photo submitted," etc.).
 - f. Written documentation that the plant material listed on the Drawings is available. Any substitutions required due to unavailability must be requested in writing before confirmation of ordering.
 - g. A schedule identifying plant procurement, storage, and anticipated delivery dates for review and approval.
 - h. Compliance with State of California and federal quarantine restrictions.
 - 2. In addition to ENGINEER review of plan in accordance Section 01330 Submittal Procedures, CONTRACTOR's plan will be reviewed City of Roseville Parks and Recreation Department.
 - 3. CONTRACTOR shall submit, upon request by ENGINEER, an additional submittal addressing City of Roseville Parks and Recreation Department submittal review comments and format requirements.

1.6 PROJECT CONDITIONS

- A. Perform planting operations only when weather and soil conditions are suitable in accordance with locally accepted practice.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery
 - 1. Deliver all planting materials with legible and durable identification labels.
 - 2. Deliver fertilizer to the site in original, unopened containers bearing the manufacturer's name, guaranteed chemical analysis, and its conformance to California State Law.
 - 3. Notify the Engineer within 7 days of the delivery of plant materials to the site. Indicate the quantity and type of plant materials in each delivery.
- B. Storage
 - 1. Store planting materials in the shade and protect from the weather.
 - 2. Maintain and protect plants not planted within 4 hours of delivery.
- C. Protection
 - 1. Protect plants during delivery to the site and after, in order to prevent damage to the root balls or desiccation of leaves.
- D. Handling
 - 1. Take extreme care in the loading and unloading of plants. Do not lift or move container plants by their stems or trunks.
 - 2. Any plant materials that are damaged due to mishandling shall be removed and replaced with new material at no additional cost.

1.8 REJECTION OF PLANT MATERIAL

- A. All plant material not conforming to the requirements herein shall be considered defective.
 - 1. The Engineer shall mark such plants, whether in place or not, as rejected and the materials shall be immediately removed from the site and replaced with new material at no additional cost.
 - 2. Replacement plant material shall be of the same size, species and condition as that indicated on the Drawings.

1.9 PROTECTION OF THE SITE

- A. Protect previously installed work and materials which may be affected by work of this Section. Provide safeguards and exercise caution against injury or defacement of existing site improvements.
- B. Repair damage and return the areas to the previous condition at no additional cost.

1.10 COORDINATION

- A. Coordinate operations with other contractors on or adjacent to the project site.

- B. Exercise extreme care in excavating and working near existing utilities. Repair any damages to these utilities at no additional cost. Check existing utility drawings for existing utility locations.
- C. Coordinate installation of all planting materials to avoid interference with utilities, other construction elements, and any existing vegetation.

1.11 GUARANTEE

- A. The manufacturer's warranty shall not relieve the Contractor of its own liability under the guarantee. Such warranties shall only supplement the guarantee.
- B. All plant material installed under this Contract shall be guaranteed against poor, inadequate and inferior quality and installation for a period of 1 year from the date of Final Acceptance.
 - 1. Any plant material not meeting the satisfaction of the Engineer as per the performance standards in Section 02970, Landscape Maintenance, shall immediately be removed and replaced at no cost to the Owner.
 - 2. Replaced plant material shall also be guaranteed for a period of 1 year upon installation.
- C. Replace without cost to the Owner and as soon as weather permits, all dead plants and all plants not found in a vigorous, thriving condition, as determined by the Engineer during and at the end of the plant warranty period.
 - 1. Replacement of plants shall closely match adjacent specimens of the same species and shall be subject to all requirements of this section.
- D. Repair damage to adjacent plant material at no cost to the Owner. All repairs shall be made with materials, varieties and sizes "in kind" with adjacent existing materials.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Procure all plant materials and incidentals required for this project.
- B. All plant material delivered to the site shall have a normal habit of growth and be well formed and shaped, healthy, vigorous, and free of any insects, diseases, sunscalds, windburn, abrasions of the bark, or other objectionable disfigurements.
- C. The size of the plant material shall correspond with that normally expected for species and variety of commercially available nursery stock or as specified on the Drawings.
- D. Plant material shall be grown under climatic conditions similar to those in the locality of the project unless approved otherwise by the Engineer.
- E. Plant material larger than that specified on the Drawings may be used pending approval from the Engineer. However, there will be no change in the Contract amount if the larger plant material is approved and used.

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2.2 MATERIALS

- A. Planting soil and backfill for all planting pits shall be existing topsoil.
- B. Trees and Shrubs
 - 1. Tree and shrub trunks shall be sturdy and well hardened with vigorous and fibrous root systems which are not root-bound.
 - 2. In the event of a disagreement as to the condition of the root system, the root conditions of the plants will be determined by the removal of soil around the roots of not less than 10 plants or more than 2 percent of the total number of plants of each species.
 - 3. When container-grown plants are supplied from several sources, the roots of not less than 10 plants of each species from each source will be observed.
 - a. In case the plants sampled are found to be defective, the Engineer has the right to reject the entire lot represented by the defective sample.
 - b. Any plant material rendered unsuitable for use because of this observation will be considered as samples and will be provided at no additional cost.
- C. Container-Grown Stock
 - 1. Container-grown stock shall be in a vigorous and healthy condition and not root bound or with the root system hardened off.
 - a. Container-grown stock shall be grown under climatic conditions similar to that found in the locality of the site.
- D. Ground Cover Stock
 - 1. Ground cover stock shall be well-established in removable containers or come from formed homogenous soil sections.
 - 2. Ground cover stock shall be grown under climatic conditions similar to that found in the locality of the site.
- E. Fertilizers
 - 1. Planting Tablets (20-10-5), shall be 21-gram, 24-month release, non-burning tablets containing the following percentages of nutrients by weight:

20 percent	Nitrogen
10 percent	Phosphoric Acid
5 percent	Potash
10 percent	Humus
2 percent	Humic Acids
 - 2. Acceptable product – “Gro-Power Planting Tablets,” as manufactured by Gro-Power (800/473-1307), or approved equal.

2.3 TREE SUPPLIER

- A. Trees shall be provided from a local nursery.
 - 1. Green Acres
 - 2. Mallard Creek
 - 3. Or approved equal

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PART 3 - EXECUTION

3.1 VERIFICATION OF EXISTING CONDITIONS

- A. Before performing the work in this Section, examine previously installed work from other trades and verify that such work is complete and as required to the point where this installation may begin properly.
- B. Remove all rocks, stones, sticks and debris larger than 1-inch in diameter from the surface of the planting areas.
- C. Obtain approval of fine grading by the Engineer before starting planting operations.

3.2 SURFACE DRAINAGE OF PLANTING AREAS

- A. Ensure proper drainage of all planting areas. Any discrepancy in the Drawings or Specifications, obstructions on the site, or prior work done by another contractor, which could preclude the establishment of proper drainage, shall be brought to the immediate attention of the Engineer for correction or relief of said responsibility.

3.3 PREPARATION

- A. Planting Layout
 - 1. Verify with the Owner's site superintendent and local governing agencies the location and depth of all underground utilities.
 - 2. If any underground construction or utility lines are encountered in the excavation of planting holes, alternative planting locations may be selected by the Engineer.
 - 3. Locations for all shrubs and trees shall be marked on the ground either by flagged grade stakes indicating plant type and size or the actual plants themselves for the Engineer's review and approval before planting. Trees and shrubs will be located according to the layout shown on the Drawings.
 - 4. Groundcover plant locations shall be in straight rows, evenly, triangular spaced, and at the on-center spacing indicated on the Drawings.
- B. General Planting Guidelines
 - 1. Plant only as many plants as can be planted and watered on that same day within a given planting area.
 - 2. Protect the planting area from excessive vehicle compaction.
 - 3. Face plant material with fullest growth into the prevailing wind and/or the primary direction of view.
- C. Container Removal
 - 1. Plant container shall be opened and removed in such a manner that the soil surrounding the rootball shall not be broken.
 - 2. Do not injure the root ball while removing the container. After removing plant, superficially cut edge roots with a knife on 3 sides.

3.4 PLANT INSTALLATION

- A. Excavate planting pit 12 inches below the bottom of the rootball and to a diameter of twice the diameter of the rootball. Planting pits shall have vertical sides and roughened surfaces.

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- B. Before planting, place the required amount of planting tablets per plant size on top of each root ball while the plants are still in their containers so that the Engineer can easily verify their existence and quantity.
- C. After obtaining approval by the Engineer on plant tablet quantity and after water has completely drained from the planting pit, add plant tables to the planting pits in the following quantities:

1-gallon	1 tablet
5-gallon	3 tablets
15-gallon	5 tablets
24-inch box	5 tablets

Place the specified amount of plant tablets between the bottom of the rootball but not higher than 1/3 of the way up the rootball. Space the plant tablets equally around the perimeter of the rootball approximately 2 inches from the rootball.

- D. Center plant material in the planting pit.
- E. Apply backfill mix to the planting pit up to ½ the height of the rootball. Add water to the top of the remaining planting pit and let soak in before completing remainder of backfilling. Finish backfilling with planting soil of the planting pit by tamping the soil firmly around the rootball and watering thoroughly.
- F. Each rooted ground cover plant shall be planted with its proportional amount of soil.
- G. Water Retention Basins
 - 1. After final backfilling, construct a water retention basin around the base of each tree and shrub planting (only) to a 30-inch diameter with backfill mix sufficient to hold 3-inches of water. Water retention basins are not required for groundcover plantings.
- H. Wood Mulch Topdressing
 - 1. Spread a 2-inch deep layer of wood mulch in all tree, shrub, and ground cover planting pits, not including seeding areas.
- I. Plant Settling
 - 1. Any plant material that has settled deeper than the surrounding grade shall be raised to the correct level.

3.5 WATERING

- A. All planting and seeding areas shall be watered immediately after installation. After the first watering, water shall be applied to all plants and seeded areas as conditions may require keeping the vegetation in a healthy and vigorous growing condition until the completion of the Contract.

3.6 CLEANUP

- A. Remove all trash caused from the work on a weekly basis throughout the duration of the Project.

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- B. Upon completion of work under this Section, remove all rubbish, waste and debris to an off-site location or as directed by the Engineer.
- C. Repair all scars, ruts or other marks in the ground caused by the work.

Remove all equipment and implements of service, and leave the entire work area in a neat and clean condition as accepted by the Engineer. All sidewalks and other paving areas shall receive a broom-clean treatment.

3.7 SITE OBSERVATION BEFORE ACCEPTANCE

- A. Corrective actions shall be in strict conformance with the Drawings and these Specifications and according to the Engineer, and shall be completed at the Contractor's expense.
- B. The Engineer will perform progress observations of the work and construction operations on completion of construction stages. The Engineer, the Contractor, and others designated by the Owner shall be agreed upon the construction stages for this Specification before starting work and be present on mutually agreed-on dates for the observations for each stage.
- C. If, after an observation, the Engineer is satisfied with the construction to date and its conformance to the Drawings and Specifications, the Engineer will grant written notice of provisional acceptance for that construction stage.
- D. If, after an observation, the Engineer is dissatisfied with the construction to date and its conformance to the Drawings and the Specifications, the Engineer will prepare a written punch list of necessary corrective action on defective work for the construction stage. All corrections must be completed and will be reobserved by the Engineer within 10 working days from the date of the initial observation.
- E. Project observations shall not occur until all punch list items from previous observations shall not occur until all punch list items from previous observations are corrected. Failure to correct problems in the time specified by the Engineer may result in a delay of payment for the said tasks until the items in question are remedied per the engineer's direction.
- F. The Contractor shall be charged for any additional construction observations and punch lists required from the Engineer for unscheduled and necessary reobservation of the work due to unsatisfactorily or incompletely addressing previous punch lists.

3.8 SITE OBSERVATION SCHEDULE

- A. Provide the Engineer with 48 hours of advance notification, except as otherwise noted, for required stage acceptance observations including, but not limited to, the following:
 - 1. Plant materials at nursery(s) before delivery to project site.
 - 2. Plant materials after delivery to project site and before planting.
 - 3. Plant locations layout before planting pit excavation.
 - 4. Planting operations, one complete installation of each plant size before installation of remaining plants.
 - 5. Progress container planting operations.
 - 6. Completed container planting operations.
 - 7. Progress seeding operations.

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8. Completed seedling operations.
9. Substantial Completion Observation: Final installation observation before the start of the Landscape Maintenance Period (provide 10 working days of advance written notice).

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SECTION 02936

HYDROSEEDING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This specification includes hydroseeding areas indicated and maintaining seeded areas until acceptance of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil: Furnish from the project site, Topsoil shall be reasonably free from subsoil, refuse, heavy or stiff clay, stones larger than one inch in size and other deleterious substances. Break all lumps and clods before the soil is spread.
- B. Erosion control slurry: A hydromulch type consisting of the following ingredients per acre:

Water	3,000 gal.
Fertilizer	320 lbs.
Seed	50 lbs.
Fiber	1,500 lbs.
Stabilizer	100 lbs.

- C. Commercial fertilizers: Conform to the requirements of the California Food and Agricultural Codes uniform in composition with the guaranteed chemical analysis of 16-20-0. Soluble potash shall be a form that will rapidly dispense in the slurry; Sentinel by Albright and Towne; or equal.
- D. Seed:
1. Seed: Latest crop, tagged and labeled in sealed containers in accordance with California Food and Agricultural Code. Pure live seed content shall exceed 90 percent for each variety specified and less than 0.5 percent weed seed. The seed mix shall consist of the following quantities and types per acre:

<u>Seed Name</u>	<u>Lbs./Acre</u>
Blando brome grass	30
Palestine orchard	6
Zorro annual foxtail	2
Rose clover	34
Alfalfa	10

- E. Fiber mulch: Green colored, fibrous, wood cellulose mulch containing no growth or germination inhibiting factors. Mulch shall, after addition and agitation in slurry tanks with fertilizer, seed, water, and other approved additives, uniformly suspend fibers to form a homogeneous slurry; and when hydraulically sprayed on the ground, the material will form a blotter-like ground cover impregnated uniformly with seed. After

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application, mulch shall allow the absorption of moisture and allow the rainfall to percolate to underlying soil.

1. Cellulose: Certified to indicate laboratory and field testing has been accomplished and that it meets all foregoing requirements. Weight specifications from suppliers and for application shall be the air dry weight of the fiber material.
 2. Absolute air dry weight is based on the normal standards of the Technical Association of the Pulp and Paper Industry for wood cellulose and is considered equivalent to 10 percent moisture. Each package of the cellulose fiber shall be marked by the manufacturer to show the air dry weight content.
- F. Stabilizing agent: A mixture of 100 percent organic, water soluble alginic acids derived from cold-water keips.

PART 3 - EXECUTION

3.1 PREPARATION AND APPLICATION

- A. Restore all areas damaged by erosion, construction activities, or other causes before beginning hydroseeding activities. Restoration shall include filling depressions and gullies, establishing level grades and slopes, and compacting soils to prevent wind erosion. Only native fill shall be used for restoration.
- B. Place and spread native fill a minimum depth of three inches over the areas shown to be hydroseeded, except that sloped areas greater than 1 horizontal to 2 vertical shall not receive this native fill.
- C. The equipment for application of erosion control slurry shall have a minimum tank capacity of 500 gallons, a built-in agitation system of sufficient operating capacity to produce an homogeneous slurry, and a discharge system with a set of spray nozzles which will deliver slurry to the areas to be seeded in a continuous and uniform rate, without misses, waste or erosion. Slurry distribution lines shall be large enough to prevent stoppage and the equipment shall be capable of being propelled.
- D. Prepare slurry at the Project site. Fill the tank with water to the quarter mark and agitate well before adding seed and fertilizer. Agitate slurry during mixing period to assure fast, homogeneous mixing, but seed shall not be added more than twenty minutes before spraying. Continue agitation at one-half optimum rpm until all material is dispersed.
- E. Using the green color of the mulch as a guide, apply slurry in sweeping motions in an arched stream so as to fall like rain. Allow materials to build on each other until a good coat is achieved and slurry is spread at the required rate per acre. In areas difficult to reach, apply in a more controlled manner.
- F. Should slurry cover any object not to be covered, wash with clear water immediately. Apply slurry as soon as practicable on cut slopes; apply to filled and graded areas as directed by the Engineer. Slurry shall not be applied during rain or high wind conditions.

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3.2 TIMING

- A. Time for hydroseeding shall be scheduled so that seed will be planted in time for the first germination-causing rain. Unless approved by Engineer, planting shall be not earlier than October 15 nor later than October 31.

3.3 MAINTENANCE

- A. Maintenance shall include repair of erosion, replacement of mulch, and incidental work necessary.
- B. CONTRACTOR to hydroseed and then maintain and water it until confirmed that it germinates with two-week, four-week, six-week and eight week germination field checks by owner representative with contract representative present. CONTRACTOR required to maintain hydroseeding through the confirmation of documented germination.

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SECTION 02950

BIORETENTION AREA

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish all materials, labor, transportation, services, and equipment necessary to install areas as shown on the Drawings and as specified herein.
- B. Work included in this Section:
 - 1. Procurement of materials
 - 2. Construction of areas
- C. If there is a conflict between Section 02950 herein and other Codes or portions of the Contract Documents, the provisions of Section 02950 shall take precedence.
 - 1. Reference Section 02300, Earthwork, for additional earthwork requirements.
 - 2. Reference Section 02900, Landscape planting, for additional planting requirements.
 - 3. Reference Section 15100, Pipe and Fittings, for additional drainage pipe requirements.

1.2 REQUIREMENTS OF REGULATORY AGENCIES

- A. All Federal, State, and local laws and regulations governing this work are hereby incorporated into and made part of this Section. When this Section calls for certain materials, workmanship or a level of construction that exceeds the level of Federal, State, or local requirements, the provisions of this Section shall take precedence.

1.3 REFERENCE STANDARDS

- A. West Placer Storm Water Quality Design Manual, Latest Edition.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01330:
 - 1. List of all proposed materials and equipment to be used indicated by description, manufacturer and model number, if applicable. Include catalog cuts where applicable.
 - 2. A copy of the plant procurement order from the nursery including the name, address, and phone number of said nursery.
 - 3. Plant quantity list.
 - a. List all plants indicated by botanical name, common name, quantity, size, nursery and location and any specific remarks, (e.g., "unable to locate," "photo submitted," etc.).
 - 4. Written documentation that the plant material listed on the Drawings is available. Any substitutions required due to unavailability must be requested in writing before confirmation of ordering.
 - 5. A schedule identifying plant procurement, storage, and anticipated delivery dates for review and approval.
 - 6. Compliance with State of California and federal quarantine restrictions.
- B. Bioretention Soil Mix

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1. Samples: Submit a 1-gallon bag of soil mix.

1.5 PROJECT CONDITIONS

- A. Perform construction and planting operations only when weather and soil conditions are suitable in accordance with locally accepted practice.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery
 1. Deliver all planting materials with legible and durable identification labels.
 2. Notify the Engineer within 7 days of the delivery of plant materials to the site. Indicate the quantity and type of plant materials in each delivery.
- B. Storage
 1. Store planting materials in the shade and protect from the weather.
 2. Maintain and protect plants not planted within 4 hours of delivery.
- C. Protection
 1. Protect plants during delivery to the site and after, to prevent damage to the root balls or desiccation of leaves.
- D. Handling
 1. Take extreme care in the loading and unloading of plants. Do not lift or move container plants by their stems or trunks.
 2. Any plant materials that are damaged due to mishandling shall be removed and replaced with new material at no additional cost.

1.7 REJECTION OF PLANT MATERIAL

- A. All plant material not conforming to the requirements herein shall be considered defective.
 1. The Engineer shall mark such plants, whether in place or not, as rejected and the materials shall be immediately removed from the site and replaced with new material at no additional cost.
 2. Replacement plant material shall be of the same size, species and condition as that indicated on the Drawings.

1.8 PROTECTION OF THE SITE

- A. Protect previously installed work and materials which may be affected by work of this Section. Provide safeguards and exercise caution against injury or defacement of existing site improvements.
- B. Repair damage and return the areas to the previous condition at no additional cost.

1.9 GUARANTEE

- A. The manufacturer's warranty shall not relieve the Contractor of its own liability under the guarantee. Such warranties shall only supplement the guarantee.

- B. All plant material installed under this Contract shall be guaranteed against poor, inadequate and inferior quality and installation for a period of 1 year from the date of Final Acceptance.
 - 1. Any plant material not meeting the satisfaction of the Engineer as per the performance standards in Section 02970, Landscape Maintenance, shall immediately be removed and replaced at no cost to the Owner.
 - 2. Replaced plant material shall also be guaranteed for a period of 1 year upon installation.
- C. Replace without cost to the Owner and as soon as weather permits, all dead plants and all plants not found in a vigorous, thriving condition, as determined by the Engineer during and at the end of the plant warranty period.
 - 1. Replacement of plants shall closely match adjacent specimens of the same species and shall be subject to all requirements of this section.
- D. Repair damage to adjacent plant material at no cost to the Owner. All repairs shall be made with materials, varieties and sizes "in kind" with adjacent existing materials.

PART 2 - PRODUCTS

2.1 PLANTS

- A. General
 - 1. Procure all plant materials and incidentals required for this project.
 - 2. All plant material delivered to the site shall have a normal habit of growth and be well formed and shaped, healthy, vigorous, and free of any insects, diseases, sunscalds, windburn, abrasions of the bark, or other objectionable disfigurements.
 - 3. The size of the plant material shall correspond with that normally expected for species and variety of commercially available nursery stock or as specified on the Drawings.
 - 4. Plant material shall be grown under climatic conditions similar to those in the locality of the project unless approved otherwise by the Engineer.
 - 5. Plant material larger than that specified on the Drawings may be used pending approval from the Engineer. However, there will be no change in the Contract amount if the larger plant material is approved and used.
- 6. Trees and Shrubs
 - a. Tree and shrub trunks shall be sturdy and well hardened with vigorous and fibrous root systems, which are not root-bound.
 - b. In the event of a disagreement as to the condition of the root system, the root conditions of the plants will be determined by the removal of soil around the roots of not less than 10 plants or more than 2 percent of the total number of plants of each species.
 - c. When container-grown plants are supplied from several sources, the roots of not less than 10 plants of each species from each source will be observed.
 - 1) In case the plants sampled are found to be defective, the Engineer has the right to reject the entire lot represented by the defective sample.
 - 2) Any plant material rendered unsuitable for use because of this observation will be considered as samples and will be provided at no additional cost.
- 7. Container-Grown Stock
 - a. Container-grown stock shall be in a vigorous and healthy condition and not root bound or with the root system hardened off.

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- 1) Container-grown stock shall be grown under climatic conditions similar to that found in the locality of the site.
8. Ground Cover Stock
 - a. Ground cover stock shall be well-established in removable containers or come from formed homogenous soil sections.
 - b. Ground cover stock shall be grown under climatic conditions similar to that found in the locality of the site.
- B. Plant Species
 1. All plants chosen must be included in the West Placer Storm Water Quality Design Manual Final Draft, Fact Sheet TR 1, Sacramento Valley Native Plant List. Plant species chosen will achieve the following design criteria for the bioretention area:
 - a. A variety of trees, shrubs, and herbaceous plant materials must be used
 - b. Emphasis to incorporate native grass meadows, which are highly effective at controlling and treating storm water
 - c. Moisture tolerant plants will be utilized for the bottom of the bottom retention area.
 - d. Plants capable of tolerating drought and fluctuating water conditions will be utilized for the side edges of the bioretention area
 - e. Must meet the general landscape design set forth by the Placer County Landscape Design Guidelines (Placer County Planning Services Division)

2.2 MATERIALS

- A. References
 1. Reference Section 02300, Earthwork, for the following material requirements:
 - a. Drain Pipe Granular Bedding
 - b. Impermeable Liner
 - c. Drain Rock
 - d. Granular Fill
 - e. Coarse Sand
 2. Reference Section 15100, Pipe and Fittings, for Drainage Pipe requirements.
- B. Bioretention Soil Media (BSM):
 1. Minimum 18" thick mixture of 60%-70% sand
 2. Must meet American Society for Testing and Materials (ASTM) C33
 3. 30%-40% compost may be used to provide filtration of runoff
 4. Use of native soil or amendment of native soil may be possible if the following criteria are met:
 - a. Evaluation of the criteria set forth in "Section 3 – Site Assessment" of the West Placer Storm Water Quality Design Manual
 - b. Structural needs evaluation by licensed Geotechnical Engineer
- C. Mulch:
 1. Initial excavation depth shall anticipate the total combined media depth to ensure that mulch is accommodated at final grades
 2. Wood chips or other material that can flow will not be permitted
 3. Installation of mulch just before or the rainy season shall not be permitted
 4. Well-aged shredded hardwood bark mulch shall be used and shall meet the following criteria:
 - a. Must not contain more than 0.1 percent of deleterious materials such as rocks, glass, plastics, metals, clods, weeds, weed seeds, coarse objects, sticks larger

- than the specified particle size, salts, paint, petroleum products, pesticides or other chemical residues harmful to plant or animal life
- b. Shredded bark mulch must be a blend of loose, long, thin wood or bark pieces derived from trees with a high length-to-width ratio. A minimum of 95 percent of the wood strands must have lengths from 2 to 8 inches, with a width and thickness from 1/8 to 1-1/2 inches.

PART 3 - EXECUTION

3.1 DESIGN CRITERIA

- A. The bioretention area shall be installed per the Contract Drawings.
- B. All earthwork construction, including but not limited to: excavation, membrane liner installation, and fill/backfill shall be performed in accordance with Section 02300, Earthwork.
- C. Install Drainage Pipe in accordance with Section 15100, Pipe and Fittings.
- D. BSM Placement
 1. BSM delivery ticket(s): Delivery tickets shall show that the full delivered amount of BSM matches the product type, volume and manufacturer named in the submittals. Each delivered batch of BSM shall be accompanied by a certification letter from the supplier verifying that the material meets specifications and is supplied from the approved BSM stockpile.
 2. Visual match with submitted samples: Delivered product will be compared to the submitted 1-gallon sample, to verify that it matches the submitted sample. The ENGINEER may inspect any loads of BSM on delivery and stop placement if the soil does not appear to match the submittals; and require sampling and testing of the delivered soil to determine if the soil meets the specified requirements before authorizing soil placement.
 3. Inspection of the aggregate storage layer, underdrain, and overflow structure installation, where included on the plans. BSM placement, grading and consolidation shall not occur when the BSM is excessively wet, or has been subjected to more than 1/2 inch of precipitation within 48 hours prior to placement. Excessively wet is defined as being at or above 22 percent soil moisture by a General Tools & Instruments DSMM500 Precision Digital Soil Moisture Meter with Probe (or equivalent). A minimum of three readings with the soil moisture probe will be used to determine the average percent soil moisture reading per each truck load. There should be no visible free water in the material.
 4. The Contractor shall place BSM loosely with a conveyor belt or with an excavator or loader from a height no higher than 6 feet, unless otherwise approved by the Engineer/Landscape Architect (i.e., do not dump material directly from truck into cell). Soil shall be placed upon a prepared subgrade in accordance with these Specifications and in conformity with the lines, grades, depth, and typical cross-section shown in the Drawings or as established by the Engineer/Landscape Architect.
 5. Excessively dry BSM may be lightly and uniformly moistened, as necessary, to facilitate placement and workability.
 6. Compact BSM using non-mechanical compaction methods (e.g., boot packing, hand tamping, or water consolidation) to 83 percent (+/- 2 percent) of the maximum dry density per modified Proctor test (ASTM D1557), or as directed by the Geotechnical Engineer. Determination of in-place density shall be made using a nuclear gauge per

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ASTM D6938. Moisture content determination shall be conducted on a soil sample taken at the location of the nuclear gage reading per ASTM D2216.

7. Grade BSM to a smooth, uniform surface plane with loose, uniformly fine texture. Rake, remove ridges, and fill depressions to meet finish grades.
8. Final soil depth shall be measured and verified only after the soil has been compacted. If after consolidation, the soil is not within +/- 3/4 inch of the grades and slopes specified on the Plans, add material to bring it up to final grade and raked.
9. The BSM shall be inspected and accepted for placement and finish grade by the Engineer/Landscape Architect prior to the installation of planting and mulch. Any BSM that does not conform to this Specification shall be remediated to the satisfaction of the Engineer/Landscape Architect, or removed and replaced with acceptable BSM, at the Contractor's expense.

E. Install Irrigation System in accordance with Section 02810, Irrigation.

3.2 PLANTING PREPARATION

A. General

1. Ensure proper drainage of all planting areas. Any discrepancy in the Drawings or Specifications, obstructions on the site, or prior work done by another contractor, which could preclude the establishment of proper drainage, shall be brought to the immediate attention of the Engineer for correction or relief of said responsibility.
2. Remove all rocks, stones, sticks and debris larger than 1-inch in diameter from the surface of the planting areas.
3. Obtain approval of site conditions by the Engineer before starting planting operations.

B. Planting Layout

1. Groundcover plant locations shall be in straight rows, evenly, triangular spaced, and at the on-center spacing indicated on the Drawings.

C. General Planting Guidelines

1. Plant only as many plants as can be planted and watered on that same day within a given planting area.
2. Protect the planting area from excessive vehicle compaction.
3. Face plant material with fullest growth into the prevailing wind and/or the primary direction of view.

D. Container Removal

1. Plant container shall be opened and removed in such a manner that the soil surrounding the rootball shall not be broken.
2. Do not injure the root ball while removing the container. After removing plant, superficially cut edge roots with a knife on 3 sides.

3.3 PLANT INSTALLATION

- A. Excavate planting pit 12 inches below the bottom of the rootball and to a diameter of twice the diameter of the rootball. Planting pits shall have vertical sides and roughened surfaces. Once excavated, drench planting pit with water.
- B. After obtaining approval by the Engineer, and after water has completely drained from the planting pit, place plant material in the center of the moist planting pit.

- C. Apply backfill mix to the planting pit up to ½ the height of the rootball. Add water to the top of the remaining planting pit and let soak in before completing remainder of backfilling. Finish backfilling with planting soil of the planting pit by tamping the soil firmly around the rootball and watering thoroughly.
- D. Each rooted ground cover plant shall be planted with its proportional amount of soil.
- E. Wood Mulch Topdressing
 - 1. Spread a 4-inch deep layer of wood mulch across entire area as shown on Contract Drawings.
- F. Plant Settling
 - 1. Any plant material that has settled deeper than the surrounding grade shall be raised to the correct level.

3.4 PLANTING DENSITY

- A. Provide the following planting density per 100 square feet:
 - 1. 100 herbaceous plants, 1-foot on center spacing, ½-gallon container size.
 - 2. 4 shrubs, evenly spaced, 1-gallon container size.

3.5 WATERING

- A. All planting and seeding areas shall be watered immediately after installation. After the first watering, water shall be applied to all plants and seeded areas as conditions may require keeping the vegetation in a healthy and vigorous growing condition until the completion of the Contract.

3.6 CLEANUP

- A. Remove all trash caused from the work on a weekly basis throughout the duration of the Project.
- B. Upon completion of work under this Section, remove all rubbish, waste and debris to a legal location.
- C. Repair all scars, ruts or other marks in the ground caused by the work.
- D. Remove all equipment and implements of service, and leave the entire work area in a neat and clean condition as accepted by the Engineer. All sidewalks and other paving areas shall receive a broom-clean treatment.

3.7 SITE OBSERVATION BEFORE ACCEPTANCE

- A. Corrective actions shall be in strict conformance with the Drawings and these Specifications and per the Engineer, and shall be completed at the Contractor's expense.
- B. The Engineer will perform progress observations of the work and construction operations on completion of construction stages. The Engineer, the Contractor, and others designated by the Owner shall be agreed upon the construction stages for this Specification before starting work and be present on mutually agreed-on dates for the observations for each stage.

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- C. If, after an observation, the Engineer is satisfied with the construction to date and its conformance to the Drawings and Specifications, the Engineer will grant written notice of provisional acceptance for that construction stage.
- D. If, after an observation, the Engineer is dissatisfied with the construction to date and its conformance to the Drawings and the Specifications, the Engineer will prepare a written punch list of necessary corrective action on defective work for the construction stage. All corrections must be completed and will be reobserved by the Engineer within 10 working days from the date of the initial observation.
- E. Project observations shall not occur until all punch list items from previous observations are corrected. Failure to correct problems in the time specified by the Engineer may result in a delay of payment for the said tasks until the items in question are remedied per the Engineer's direction.
- F. The Contractor shall be charged for any additional construction observations and punch lists required from the Engineer for unscheduled and necessary reobservation of the work due to unsatisfactorily or incompletely addressing previous punch lists.

3.8 SITE OBSERVATION SCHEDULE

- A. Provide the Engineer with 48 hours of advance notification, except as otherwise noted, for required stage acceptance observations including, but not limited to, the following:
 - 1. Plant materials at nursery(s) before delivery to project site.
 - 2. Plant materials after delivery to project site and before planting.
 - 3. Plant locations layout before planting pit excavation.
 - 4. Planting operations, one complete installation of each plant size before installation of remaining plants.
 - 5. Progress container planting operations.
 - 6. Completed container planting operations.
 - 7. Progress seeding operations.
 - 8. Completed seedling operations.
 - 9. Substantial Completion Observation: Final installation observation before the start of the Landscape Maintenance Period (provide 10 working days of advance written notice).

3.9 USE OF BIORETENTION AREA

- A. Convey all un-stabilized site drainage around the bioretention area until the site is stabilized to prevent plugging. The area is not designed to treat runoff from areas where the hydroseeding is not established.

+ + END OF SECTION + +

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SECTION 02970

LANDSCAPE MAINTENANCE

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. This section only applies to landscaping and not hydroseeding.
- B. After landscape planting and irrigation work have been completed, reviewed and accepted by the Owner and the Engineer, furnish materials, labor, transportation, services and equipment necessary to provide landscape maintenance as indicated on Drawings and as specified herein.
- C. Work included in this Section:
 - 1. Observation of Work Request
 - 2. General Landscape Maintenance
 - 3. Tree and Shrub Care
 - 4. Ground Cover Plant Care
 - 5. Maintaining Water Retention Basins
 - 6. Watering
 - 7. Irrigation System
 - 8. Weed Control
 - 9. Replacement Planting
 - 10. Reseeded Areas
 - 11. Cleanup
 - 12. Site Observation Before Acceptance
 - 13. Site Observation Schedule
 - 14. Final Completion

1.2 REFERENCES

- A. International Society of Arboriculture, pruning mature trees.

1.3 DEFINITIONS

- A. Healthy Plants: Healthy plants shall be those that are of good form, free of disease and insect infestation, are robust, and exhibit vigorous growth (foliage and wood). They must not be heat or water stressed.
- B. Landscape Maintenance Period: Landscape Maintenance Period will be 90 days minimum from acceptance of the completed landscape construction by the Owner and the Engineer.
 - 1. At the discretion of the Engineer, proceed into the Landscape Maintenance Period if planting and irrigation are deemed "substantially complete" by the Engineer.
 - 2. Continuously maintain areas included in this Contract during the Landscape Maintenance Period until Final Acceptance has been granted.
 - 3. Improper landscape maintenance or possible poor condition of planting at termination of the scheduled may cause the Landscape Maintenance Period to be continued at no cost to the Owner.

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4. Any day that Contractor fails to adequately perform landscape maintenance, as determined necessary by the Engineer, will not be credited as one of landscape maintenance working days.
5. The Contractor shall be responsible for establishing and maintaining all plants, including transplants, in a healthy condition throughout the Landscape Maintenance Period. The Contractor shall check the condition of each plant for symptoms of disease, size, color, wilting, defoliation, new growth, browsing by wildlife, insect damage, girdling, structural deformities, dieback, sunburn and vandalism and shall notify the Engineer of the corrective actions required.

1.4 PERFORMANCE STANDARDS

- A. The target survival rate for all container plants shall be 100% survival. The target survival rate for seeded areas shall be 60% cover with native vegetation.
- B. If the percent survival is less than these standards, replacement plants shall be planted, in conformance to the Drawings and Specifications, with the minimum number of plants required to achieve the survivorship standards.
- C. Seeded areas larger than 400 square feet with less than 60% cover with native vegetation shall be reseeded.
- D. If the performance standards are not met at the time of Final Completion, the project will not be accepted until the identified remedial actions are implemented as directed by the Engineer. These may include additional weed control and/or additional planting, using adaptive management to identify those plants best suited to the site. All remedial actions shall be conducted in strict coordination with, and upon the approval of the Engineer.

1.5 QUALIFICATIONS

- A. The applicator of all weed control materials shall be licensed by the State of California as a Pest Control Operator and a Pest Control Advisor in addition to any subcontractor licenses that are required.

1.6 SUBMITTALS

- A. At least 30 days before starting landscape maintenance, submit the following to the Engineer:
 1. A schedule of activities planned during the Landscape Maintenance Period. This schedule must be accepted by the Engineer before start of landscape maintenance. During the Landscape Maintenance Period, document scheduled changes and obtain acceptance by the Engineer.
 2. A written schedule for watering, including rate and length of application for each event over the duration of the Landscape Maintenance Period.
 3. The Pest Control Advisor shall submit a list of the weed control materials and quantities per acre intended for use in controlling the weed types prevalent and expected on the site. Weed control information shall include:
 - a. Data to demonstrate the compatibility of the weed control materials and methods with the intended planting and seed varieties.
 - b. A written list of the proposed herbicide application equipment to be used in performance of the weeding work, including descriptive data and calibration tests. Include the herbicide trade name, chemical composition, formulation, concentration, application rate of active ingredients and methods of application

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- for all materials furnished, as well as the name and State license number of the State certified applicator.
- c. Records of manufacturer's literature, labels, and laboratory analytical data for verification of herbicide to be used, including the chemical makeup and application rate.
 - d. Certificates of compliance certifying that herbicide materials meet the requirements specified shall be submitted before the delivery of materials. Herbicide material shall include EPA registration number and registered uses.
 - e. A Herbicide Treatment Plan (HTP) proposing a sequence of herbicide treatments and a written delivery schedule and written Pest Control Advisor (PCA) recommendation. The herbicide trade name, chemical composition, formulation, concentration, application rate of active ingredients and methods of application for all materials furnished, and the name and state license number of the state certified applicator shall be included. Records of manufacturer's literature, labels, and laboratory analytical data for verification of herbicide to be used including the chemical makeup and application rate shall be submitted. Once approved by the Engineer, the Contractor shall receive written authorization to proceed with the treatment.
4. A list of materials that are to be used during landscape maintenance that are not specified in Section 02900 – Landscape Planting in written form to the Engineer for review and approval before purchasing or delivering to the site.
- B. Replacement Materials
1. For all replacement container plants, and upon the direction of the Engineer, submit a copy of the plant procurement order, including the plant species (by botanical and common name), sizes, and quantities ordered, from a reputable nursery as specified in Section 02900 – Landscape Planting. If the nursery is different than that used to supply the materials for the initial planting, submit the name, address, and phone number of the nursery.
 2. For any reseeding materials, submit verification of seed mix by way of mix labels from the seed mix bags and related items to be used for installing plant materials shall be included in the submittal.
 3. Submit a schedule and plan identifying replacement materials procurement and storage, and anticipated delivery dates for review and approval.
- C. Landscape Maintenance Logs
1. Landscape maintenance activities, including, but not limited to watering, pruning, and weed control shall be logged on a weekly basis and submitted for review during the progress observations.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Provide materials for landscape maintenance work in accordance with requirements of Section 02900, Landscape Planting, except as described herein.

2.2 MATERIALS

- A. Fertilizer
 1. Shall be consistent with the recommendations from the soils analysis.

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2. Shall be Gro-Power Hi-Nitrogen 14-4-9, or approved equal, commercial fertilizer at the rate of 7 ½ pounds per 1,000 square feet.
- B. Replacement Plants
1. Supply all replacement container plant materials as required during Landscape Maintenance Period. Replacement plants shall be container and seed of same species and size according to Section 02900, Planting, unless otherwise directed by the Engineer. Sources proposed for acquisition of replacement plant material must be approved by Engineer before acquisition. In no event shall plants of larger sizes than those originally planted be required.
- C. Herbicide
1. Select herbicides with low toxicity to wildlife and those that are appropriate for the desired effect (i.e., broadleaf herbicide to avoid harm to grasses).
- D. All materials need to be suitable to use per Santa Clara Valley Water District's standards.

PART 3 - EXECUTION

3.1 OBSERVATION OF WORK REQUEST

- A. Request an observation of work by the Engineer to begin the Landscape Maintenance Period after planting and related work has been completed in accordance with Contract Documents. A prime requirement is that ground cover plant (including seeded areas and turf areas), shrub, and tree areas be planted and show a consistent and healthy appearance. If such criteria are met to satisfaction of the Engineer, a field report may be issued to the Owner recommending a date for beginning of the Landscape Maintenance Period.
- B. Any work conducted before the approved landscape maintenance date will not be credited as one of landscape maintenance working days.

3.2 GENERAL LANDSCAPE MAINTENANCE

- A. Furnish sufficient labor and adequate equipment to perform work during the Landscape Maintenance Period.
- B. The general landscape maintenance operations shall include, but is not limited to:
1. Maintaining planting sites and irrigation systems as described specifically herein.
 2. Provide debris removal in all landscaping areas.
 3. Maintain adequate protection of landscaping areas. Repair damaged area.
 4. Sweep clean paved areas at weekly intervals or more frequently, if deemed necessary.
 5. Replacing all dead and severely stressed plants and other materials, as required and in accordance with the performance standards.
 6. Maintaining all planting areas weed free and removing all noxious weeds from entire project site. Cultivation at intervals of not more than 10 days.
 7. Operating the irrigation system on a regular basis throughout the irrigation season and maintaining the irrigation system in a fully operational condition for the duration of the Landscape Maintenance Period, and up to the Final Completion of the project.
 8. Keeping up-to-date record, or as "As-Built" Drawings during the Landscape Maintenance Period.

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9. Providing irrigation controller charts.

3.3 TREE AND SHRUB CARE

- A. Watering: Refer to 3.6, Watering, this Specification section.
- B. Pruning:
 1. Pruning Objectives:
 - a. At no time shall plant material be pruned, trimmed or topped before delivery. Any alteration to a plant material's shape shall only be conducted on-site and in the presence of the Engineer.
 - b. All require pruning of plant material shall be conducted under the observation of the Engineer. Prune plant material only when necessary and under standard horticultural practices to preserve its natural character.
 - c. Select and develop permanent scaffold branches that are smaller in diameter than trunk or branch to which they are attached which have vertical spacing of from 18-inches to 48-inches and radial orientation so as not to overlay one another.
 - d. To eliminate diseased or damaged growth.
 - e. To eliminate narrow V-shaped branch forks that lack strength.
 - f. To reduce toppling and wind damage by thinning out crowns.
 - g. To maintain growth within space limitations.
 - h. To maintain a natural appearance and to balance crown with root mass.
 - i. Do not clip shrubs into balled or boxed forms unless approved initially by the Engineer.
 - j. Make pruning cuts on lateral branches or buds flush with trunk.
 - k. Do not "stub" branches.
- C. Tree Staking
 1. Restake, tighten and repair damaged tree ties.
 2. Reset to proper grades or upright (vertical position, trees that are not in their proper growing position.
 3. Inspect stakes to prevent girdling of trunks or branches and to prevent rubbing that may cause bark wounds.
- D. Weed Control: Refer to 3.8 Weed Control, this Specification section.
- E. Insect and Disease Control:
 1. Maintain insect and disease control during the Landscape Maintenance Period.
- F. Fertilization:
 1. Fertilize planting areas at the start of the Landscape Maintenance Period.
 2. Repeat fertilizer application at 30-day intervals until end of the Landscape Maintenance Period.

3.4 GROUND COVER PLANT CARE

- A. Weed Control: Refer to 3.8, Weed Control, this Specification section.
- B. Watering: Refer to 3.5, Watering, this Specification section.
- C. Fertilizing:
 1. Fertilize as specified under 3.3, Tree and Shrub care, this Specification section.

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- D. Edge ground cover to keep in bounds and trim trop growth as necessary to achieve an overall even appearance.

3.5 MAINTAINING WATER RETENTION BASINS

- A. Unless otherwise directed by the Engineer, maintain water retention basins around each plant. As directed by the Engineer, modify the basin to ensure it is capable of containing the required amount of water at each watering event at one time. The lip (or earthen berm) of the basin shall be preserved to a height as shown on the Drawings. Maintenance actions may include importing soil, reforming, and re-compacting the lip (or earthen berm) of the basin. Should water be retained within a basin for more than 4-hours, breach the berm of said basin in order to provide drainage at a given plant, especially during the rainy season and at other times as necessary. Take corrective actions to ensure positive drainage at a given plant; the berm shall then be restored to reform the water retention basin as prescribed herein.

3.6 WATERING

- A. The plants shall receive water by way of the installed irrigation system as shown on the Drawings and according to Section 02810, Irrigation System. When hand watering, use a water wand to break water force.
- B. The Contractor shall observe said system to ensure that it is functioning and providing adequate water to the plants. Water pressure shall be regulated to a level that applies sufficient water without causing damage to plants or erosion to the planting basin. At no time shall any water be applied in a way that will cause erosion, damage to plants, or excessive runoff. Should the watering application rates need adjustment, immediately contact the Engineer for direction. Assume full responsibility for corrective actions resulting from inappropriate water applications and failure to contact the Engineer for direction. Watering shall consist of the application of water in a manner that is sufficient to wet the soil and saturate the root zone and as frequent as necessary to maintain healthy growth, without damaging the plants, the surrounding grade, or the existing watering basins.
- C. Replenish wood mulch to reduce evaporation and frequency of watering. Throughout warm weather conditions, the plants may require additional watering events. The beginning and ending dates and a schedule for watering shall be determined collaboratively by the Contractor and the Engineer. If most of the plants appear to be stressed and in danger of perishing, consult the Engineer to determine the frequency and duration of additional or decreased watering. If modifications are made to the watering schedule, provide the Engineer with 2 copies of the adjusted watering schedule within 2 weeks of receiving the Engineer's verbal acceptance plus subsequent written approval of the modifications. Regulate irrigation watering times to minimize erosion and gullyng.

3.7 IRRIGATION SYSTEM

- A. Provides maintenance of irrigation system consisting of cleaning and adjusting sprinkler and nozzles, and drip emitters, repairing damaged equipment, servicing valves, programming controllers and other activities required during the Landscape Maintenance Period.
- B. Irrigation Controller Charts

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1. "As-Built" Drawings shall be approved by the Engineer before Irrigation Controller Charts are prepared.
2. Provide one Irrigation Controller Chart for each irrigation controller supplied.
3. Each Irrigation Controller Chart shall show the area controlled by that automatic irrigation controller and shall be the maximum size that fits through the irrigation controller door will allow.
4. The Irrigation Controller Chart is to be a reduced "As-Built" Drawings of the irrigation system. In the event that the Irrigation Controller Chart is not legible when the chart is reduced, the text on the "As-Built" Drawing may be enlarged to a size that will be readable when reduced.
5. The Irrigation Controller Chart shall be a monochromatic "Xerox" copy on #20 bond with each valve station represented by a different color.S
6. When completed, hermetically seal the Irrigation Controller Chart between two pieces of 10 mil. plastic laminate.
7. Irrigation Controller Charts shall be completed and approved by the Engineer before the Final Completion.

C. Refer to Section 02810 – Irrigation System for additional requirements.

3.8 WEED CONTROL

- A. Weed control shall consist of maintaining the individual planting sites, areas between individual planting sites, and all areas within planting boundaries (as shown on the Drawings) free of weeds for the duration of the Landscape Maintenance Period.
- B. At individual planting site, weeds shall be removed within a 36-inch diameter of each plant. Weed removal at the trunks of individual plants shall be conducted by hand pulling. At no time shall weed removal disrupt the root systems of the installed plants.
- C. Observe the project site weekly during the Landscape Maintenance Period to evaluate potential weed problems. Any invasive weed species shall be targeted for removal and long-term control through manual or chemical methods. Manual removal by hand-pulling shall be the preferred weed eradication method.
 1. Mechanical methods (such as mowing) or spot herbicide applications may be considered upon receipt of an HTP and approval from the Engineer before application. If approved, herbicide applications shall be conducted according to the approved HTP and under the direction of the Engineer. At no time shall weed control include burning.
 2. Avoid frequent soil cultivation that destroys shallow surface roots.
 3. Replenish lost wood or straw mulch to reduce weed growth.

3.9 REPLACEMENT PLANTING

- A. Material replacement shall be in strict conformance to the Drawings, these Specifications, and the Engineer's direction, and shall be completed at no additional expense.
- B. Plant material that has no easily observable viable aboveground living matter, or is of consistently poor vigor and form as determined by the Engineer, shall be considered dead and must be replaced according to the Drawings and the Specifications. Dead plants shall be removed before installation of replacement plants. All dead plants shall be removed offsite according to State and local regulations at no additional expense.

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- C. Replace plant losses due to inundation, mortality, or poor health and vigor at a rate of 1 replacement plant for each plant lost in accordance with the performance standards described herein. The replacement plants must be similar in size to the current size of the existing plants. If transplants require replanting, the size of the replacements must be approved by the Engineer before ordering or purchase.
- D. All materials determined to be salvaged shall be handled and removed with care. All replacement plant containers and racks shall be salvaged and recycled offsite or returned to the suppliers at no additional cost.

3.10 CLEANUP

- A. Upon completion landscape maintenance, remove rubbish, waste and debris.
- B. Repair scars, ruts or other marks in landscaped areas.
- C. Remove equipment, implements of service and leave landscaping areas in a neat and clean condition as accepted by the Engineer. Sweep clean paved areas.

3.11 SITE OBSERVATION BEFORE ACCEPTANCE

- A. Corrective actions shall be in strict conformance with the Drawings and these Specifications and according to the Engineer, and shall be completed at the Contractor's expense.
- B. The Engineer will perform progress observations of the maintenance work on a weekly basis. The Engineer, the Contractor, and others designated by the Owner shall be present on for the weekly observations.
- C. If, after observation, the Engineer is satisfied with the construction to date and its conformance to the Drawings and the Specifications, the Engineer will grant written notice of acceptance.
- D. If, after an observation, the Engineer is dissatisfied with the maintenance work to date and its conformance to the Drawings and the Specifications, the Engineer will prepare a written punch list of necessary corrective action on defective work. All corrections must be completed by the Contractor and reobserved by the Engineer at the following weekly inspection.
- E. Failure to correct problems in the time specified by the Engineer may result in a delay of payment for the said tasks until the items in question are remedied per the Engineer's direction.
- F. The Contractor shall be charged for any additional observations and punch lists required from the Engineer for unscheduled and necessary reobservation of the Contractor's work due to unsatisfactorily or incompletely addressing previous punch lists.

3.12 SITE OBSERVATION SCHEDULE

- A. Progress observations of the maintenance work shall be one per week. The Engineer and the Contractor shall agree upon a regular day and time for the weekly observations.

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3.13 FINAL ACCEPTANCE

- A. At completion of the Landscape Maintenance Period, schedule a Final Completion observation with the Engineer. Provide 10 working days of advance written notice for the requested date.
- B. The Owner, Engineer, Contractor, and others deemed necessary by the Engineer may be present at the Final Completion observation.
- C. Before requesting Final Completion observation, replacement planting shall be completed.
- D. If during the Final Completion observation the Engineer is of opinion that landscape maintenance has been substantially completed in accordance with this Specification, written notice of recommendation to allow Contractor to be released from Project will be submitted to the Owner for approval. This report will note any incomplete punch list items from Final Completion observation and a date on which these items must be completed. Remaining punch list items shall be completed within 5 working days after the final Acceptance observation was performed by the Engineer.
- E. If during the Final Completion observation the Engineer is of opinion that landscape maintenance has not been substantially completed in accordance with this Specification, the Engineer will prepare a written punch list of necessary corrective action on defective work. All corrections must be completed by the Contractor and reobserved by the Engineer within 10 working days from the date of the initial Final Completion observation. Written notice of recommendation to allow Contractor to be released from Project will not be submitted to the Owner for approval until all corrective actions have been addressed to the satisfaction of the Engineer.
- F. Corrective actions shall be in strict conformance with the Drawings and these Specifications and according to the Engineers, and shall be completed at the Contractor's expense.

+ + END OF SECTION + +

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SECTION 03100
CONCRETE FORMWORK

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Falsework and formwork, as required to construct cast-in-place concrete, including placing of all items such as sleeves, anchor bolts, inserts and all other items to be embedded in concrete for which placement is not specifically provided under other Sections.
- B. REFERENCES
 - 1. American Concrete Institute (ACI)
 - a. ACI 301, Specifications for Structural Concrete for Buildings.
 - b. ACI 347, Guide for Concrete Formwork.

1.2 SYSTEM DESCRIPTION

- A. Coordination:
 - 1. Review installation procedures under other Sections and coordinate the installation of items that must be installed with the formwork.
 - 2. Coordinate formwork specifications herein with the requirements for finished surfaces specified in Section 03300, Cast-In-Place Concrete.

1.3 SUBMITTALS

- A. Submit for information purposes the following: Copies of manufacturer's data and installation instructions for all proprietary materials, including form coatings, manufactured form systems, ties and accessories.
- B. Shop Drawings: Forming, shoring and bracing drawings for footings, walls and roofs.
- C. Calculations: Calculations verifying the selection of form ties, horizontal and vertical stiff-backs or braces for wall panels, forming and form openings, falsework or roof forms, or any other part of forming, shoring or bracing which may be considered critical by the ENGINEER. The drawings, with supporting calculations, must be signed and sealed by a Civil or Structural Engineer registered in the State of California.

1.4 QUALITY ASSURANCE

- A. Allowable Tolerances: Construct formwork to provide completed concrete surfaces complying with tolerances specified in ACI 347, Chapter 3.3, except as otherwise specified.
- B. Furnish and install all items for permanent or temporary facilities in accordance with manufacturer's instructions.

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PART 2 - PRODUCTS

2.1 FORM MATERIALS

- A. Forms for Exposed Finish Concrete: Unless otherwise shown or specified, construct formwork for exposed concrete surfaces with plywood overlaid with MDO or HDO specifically designed for concrete forms, metal, metal-framed plywood-faced or other acceptable panel materials, to provide continuous, straight, smooth as-cast surfaces. Furnish in largest practical sizes to minimize number of joints. Provide form material with sufficient thickness to remain watertight and withstand pressure of newly placed concrete without bow or deflection.
- B. Forms for Unexposed Finish Concrete: Form concrete surfaces that will be unexposed in the finished structure with plywood, lumber, metal, or other acceptable material. Provide lumber that is dressed on at least 2 edges and 1 side.
- C. Form Ties:
 - 1. Form ties on exposed surfaces shall be located in a uniform pattern or as indicated on the Drawings. Form ties shall be constructed so that the tie remains embedded in the wall, except for a removable portion at each end. Form ties shall have conical or spherical type inserts, inserts shall be fixed so that they remain in contact with forming material, and shall be constructed so that no metal is within 1 inch of the concrete surface when the forms, inserts, and tie ends are removed. Wire ties will not be permitted. Ties shall withstand all pressures and limit deflection of forms to acceptable limits.
 - 2. Flat bar ties for panel forms shall have plastic or rubber inserts having a minimum depth of 1 inch and sufficient dimensions to permit proper patching of the tie hole.
 - 3. Ties for water-holding structures or dry structures with access such as basements, pipe galleries, etc., that are below finish grade, shall have either an integral steel water stop 0.103 inch thick and 0.625 inch in diameter that is tightly and continuously welded to the tie, or a neoprene water stop 3/16-inch thick and 15/16 inch in diameter whose center hole is 1/2 the diameter of the snap tie, or a molded plastic water stop of comparable size. Flat snap ties complying with above requirements and other sections of this Specification may be used. The water stop shall be considerably larger in area than the tie cross sectional area, and shall be oriented perpendicular to the tie and symmetrical about the center of the tie. The ties shall be constructed to provide a positive means of preventing rotation or disturbance of the center portion of the tie during removal of the ends.
- D. Alternative Form Ties – Through-Bolts:
 - 1. Alternate form ties consisting of tapered through-bolts at least 1 inch in diameter at smallest end, or through-bolts that utilize a removable tapered sleeve of the same minimum size may be used at the CONTRACTOR's option. Clean and roughen, fill, and seal form tie hole as shown on the Drawings; or where not shown on the Drawings, the CONTRACTOR shall provide a shop drawing submittal of his proposed method of sealing the through-bolt hole by sandblasting or mechanically cleaning and roughening the entire interior surface of the hole, epoxy coating the roughened surface and driving a vinyl plug and then dry packing the entire hole on each side of the plug with nonshrink grout, meeting these Specifications. Dry packing shall be done while the epoxy is tacky or remove the epoxy by mechanical means and reapply new epoxy. The CONTRACTOR shall be responsible for watertightness and any repair needed. Any leaks or dampness on the exterior of through-bolt patches during or after water testing shall require repair or replacement of the patch.

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2. The elastic plug to be inserted into the form tie hole as shown on the Drawings shall be a Dayton Sure Plug, or approved equal, sized to allow insertion using the insertion tool to elongate the plug, place it at the correct location, and allow the plug to return to its original length and diameter upon removal to form a watertight seal. The plugs shall be as manufactured and supplied by Dayton Superior, Dayton OH, phone: 888/977-9500.
- E. Forms Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatment of concrete surfaces requiring bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compounds.
 1. For concrete structures which will be in contact with potable water, the manufacturer shall certify that the form coating used is NSF 61 approved.

2.2 DESIGN OF FORMWORK

- A. The CONTRACTOR shall design all formwork prior to fabrication. The design shall account for all the tolerances, form ties, finishes, architectural features, rebar supports, construction joint locations, and other features and other nonstructural formwork requirements specified. Forms shall contain pouring and observation windows to allow placement of concrete through windows or shall be staged to allow visual observation at all times of the fresh concrete to ensure correct placement and vibration. Provide a formwork and placement design that will limit free fall of concrete in forms 8-inch or less in width to 5 feet; and for forms wider than 8 inches, limit this fall to 8 feet, except as hereinafter specified. Review methods with ENGINEER prior to start of work. Use placement devices, such as chutes, pouring spouts, pumps, as required.
- B. Wall forms shall be designed such that wall sections can be poured full height without creating horizontal cold joints and without causing snapping of form ties which shall be of sufficient strength and number to prevent spreading of the forms during the placement of concrete and which shall permit ready removal of the forms without spalling or damaging the concrete.
- C. Reuse of forms will be permitted only if a "like new" condition, unless otherwise approved in writing, is maintained. The ENGINEER shall be notified 1 full working day prior to concrete placement so that the forms can be inspected. The CONTRACTOR shall correct any defective work, found in the ENGINEER's inspection, prior to delivery of concrete to the project. Formwork surfaces that were in good condition and accepted for use, but were damaged during removal and handling shall not be reused on additional pours. The CONTRACTOR is expected to take care in the handling of forms and to obtain approval of form surfaces prior to each reuse.
- D. Roof forms and falsework supports for structural slabs shall be sufficiently rigid and strong to support the wet concrete and the men and equipment necessary for its placement without appreciable deflections. A minimum of 50 PSF for live load shall be allowed in the design.
- E. All forms, falsework, shoring, and other structural formwork required shall be structurally designed by the CONTRACTOR and the design shall comply with all applicable safety regulations, current OSHA regulations, and other codes. Where federal or state agencies require a licensed engineer to prepare and/or seal all formwork, falsework or shoring designs, the CONTRACTOR shall hire this engineer and pay all costs. The designs shall be made available to any governing agency upon request. Comply with applicable

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portions of ACI 347, ACI 318 current edition, and these Specifications. All design, supervision, and construction for safety of property and personnel shall be the CONTRACTOR's full responsibility.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine the substrate and the conditions under which Work is to be performed with installer and notify ENGINEER, in writing, of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 FORM CONSTRUCTION

- A. Construct forms complying with ACI 347; to the exact sizes, shapes, lines and dimensions shown; as required to obtain accurate alignment, location and grades; to tolerances specified; and to obtain level and plumb work in finish structures. Provide for openings, offsets, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required. Use selected materials to obtain required finishes. Finish shall be as determined by approved mock-up or sample panel, if specified.
- B. Fabricate forms for easy removal without damaging concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where the slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and assure ease of removal.
- C. Provide temporary form windows where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Brace temporary closures and set tightly to forms to prevent loss of concrete mortar. Locate form windows on forms in locations as inconspicuous as possible, consistent with requirements of the Work. Form intersecting planes of openings to provide true, clean-cut corners, with edge grain of plywood not exposed as form for concrete.
- D. Falsework:
 - 1. Erect falsework and support, brace and maintain it to safely support vertical, lateral and asymmetrical loads applied until such loads can be supported by in-place concrete structures. Construct falsework so that adjustments can be made for take-up and settlement.
 - 2. Provide wedges, jacks or camber strips to facilitate vertical adjustments. Carefully inspect falsework and formwork during and after concrete placement operations to determine abnormal deflection or signs of failure; make necessary adjustments to produce finished Work of required dimensions.
- E. Forms for Exposed To View Concrete:
 - 1. Do not use metal cover plates for patching holes or defects in forms.
 - 2. Provide sharp, clean corners at intersecting planes, without visible edges or offsets. Back joints with extra studs or girts to maintain true, square intersections.

3. Use extra studs, walers and bracing to prevent bowing of forms between studs and to avoid bowed appearance in concrete. Do not use narrow strips of form material that will produce bow.
 4. Assemble forms so they may be readily removed without damage to exposed concrete surfaces.
 5. Form molding shapes, recesses, rustication joints and projections with smooth-finish materials, and install in forms with sealed joints to prevent displacement.
- F. Corner Treatment:
1. Form exposed corners of beams, walls, foundations, bases and columns to produce smooth, solid, unbroken lines, except as otherwise shown. Except as specified below for reentrant or internal corners, exposed corners shall be chamfered.
 2. Form chamfers with 3/4"x 3/4" strips, unless otherwise shown, accurately formed and surfaced to produce uniformly straight lines and tight edge joints. Use rigid PVC chamfers for all architecturally formed concrete. Extend terminal edges to require limit and miter chamfer strips at changes in direction.
 3. Reentrant or internal corners and unexposed corners need not be formed chamfered.
- G. Openings and Built-In Work:
1. Provide openings in concrete formwork shown or required by other Sections or other contracts.
 2. Accurately place and securely support items to be built into forms.
- H. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is to be placed. Retighten forms immediately after concrete placement as required to eliminate mortar leaks.

3.3 FORM COATINGS

- A. Coat form contact surfaces with a non-staining form-coating compound before reinforcement is placed. Do not allow excess form coating material to accumulate in the forms or to come into contact with surfaces that will be bonded to fresh concrete. Apply in compliance with manufacturer's instructions.
- B. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

3.4 INSTALLATION OF EMBEDDED ITEMS

- A. Set and build into the formwork, anchorage devices and other embedded items, shown, specified or required by other Sections and other contracts. Use necessary setting drawings, diagrams, instructions and directions.
- B. Edge Forms and Screeds Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in the finished slab surface. Provide and secure units to support screeds.

3.5 FIELD QUALITY CONTROL

- A. Before concrete placement, check the formwork, including tolerances, lines, ties, tie cones, and form coatings. Make corrections and adjustments to ensure proper size and location of concrete members and stability of forming systems.

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- B. During concrete placement check formwork and related supports to ensure that forms are not displaced and that completed Work is within specified tolerances.
- C. If forms are unsatisfactory in any way, either before or during placing of concrete, postpone or stop placement of concrete until the defects have been corrected, and reviewed by ENGINEER.

3.6 REMOVAL OF FORMS

- A. Conform to the requirements of ACI 301, Chapter 2 and ACI 347, Chapter 3.7 except as specified below.
 - 1. Removal of Forms and Supports: Continue curing in accordance with Section 03300, Cast-In-Place Concrete, Paragraph 3.7. Forms are to remain in-place for the time specified below following the end of concrete placement. The durations shown represent a cumulative number of days, or hours, not necessarily consecutive, during which the temperature of the air surrounding the concrete is above or below 50°F.

Temperature:	Above 50°F	Below 50°F or when retarders are used
Walls	12 hours	48 hours
Columns	12 hours	48 hours
Sides of Slabs	6 hours	12 hours
Structural Floor or Roof Slabs	Do not remove forms until site-cured test cylinders develop 100% of 28-days strength.	

- 2. When wall or column forms also support formwork for slab or beam soffits, the removal times of the latter should govern.

3.7 RE-USE OF FORMS

- A. Clean and repair surfaces of forms to be re-used in the Work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact surfaces as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces. Form surfaces shall be subject to ENGINEER'S approval.

+ + END OF SECTION + +

SECTION 03200

CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Fabrication and placement of reinforcement including bars, ties and supports, and encasements.

1.2 SUBMITTALS

- A. Shop Drawings:
 - 1. Manufacturer's specifications and installation instructions for all materials and reinforcement accessories.
 - 2. Drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315, Parts A and B. For walls, show elevations to a minimum scale of 1/4-inch to 1 foot. For slabs, show top and bottom reinforcing on separate plan views. Show bar schedules, stirrup spacing, diagrams of bent bars, arrangements and assemblies, as required for the fabrication and placement of concrete reinforcement, unless otherwise noted. Keep splices to a minimum. Avoid splices in regions of maximum tension stresses whenever possible.
- B. Certificates: Submit one (1) copy of steel producer's certificates of mill analysis, tensile and bend tests for reinforcing steel.

1.3 QUALITY ASSURANCE

- A. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified:
 - 1. American Concrete Institute (ACI):
 - a. ACI 315, Manual of Engineering and Placing Drawings for Reinforced Concrete Structures.
 - b. ACI 318, Building Code Requirements for Reinforced Concrete.
 - 2. Concrete Reinforcing Steel Institute:
 - a. Manual of Standard Practice, includes ASTM standards referred to herein.
- B. Allowable Placing Tolerances: Comply with ACI 318, Chapter 7 - Details of Reinforcement.

1.4 DELIVERY, HANDLING AND STORAGE

- A. Deliver concrete reinforcement materials to the site bundled, tagged and marked. Use metal tags indicating bar size, lengths, and other information corresponding to markings shown on placement diagrams.
- B. Store concrete reinforcement material at the site to prevent damage and accumulation of dirt or excessive rust. Store on heavy wood blocking so that no part of it will come in contact with the ground.

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PART 2 - PRODUCTS

2.1 MATERIALS

- A. Reinforcing Bars: ASTM A615, Grade 60 for all non-welded bars. ASTM A706, Grade 60 for welded bars.
- B. Mechanical Couplers: Reinforcement bars may be spliced with a mechanical connection. Provide a full mechanical connection which shall develop in tension or compression, as required, at least 125% of specified yield strength (f_y) of the bar in accordance with ACI 318 Section 12.14.3.2. The locations of the connections are subject to the approval of the ENGINEER.
 - 1. Dayton Superior Bar Lock S/CA Series.
 - 2. Or approved equal
- C. Threaded Splicing Systems: Dowel Bar Splicer System shall comply with ICC Report #4028. The completed splice shall exceed 160% of the specified yield strength (f_y) of the bar.
 - 1. Dayton Superior DB/DI parallel threaded couplers.
 - 2. Or approved equal
- D. Steel Wire: ASTM A82.
- E. Column Spirals: Hot-rolled rods for spirals, ASTM A615.
- F. Supports for Reinforcement: Bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcement in place.
 - 1. Use wire bar type supports complying with CRSI recommendations, except as specified below. Do not use wood, brick, or other unacceptable materials.
 - 2. For slabs on grade, use 5000 psi concrete blocks.
 - 3. At all formed surfaces, provide supports complying with CRSI "Manual of Standard Practice" as follows: Plastic protected or stainless-steel legs.

2.2 FABRICATION

- A. General: Fabricate reinforcing bars to conform to required shapes and dimensions, with fabrication tolerances complying with CRSI, "Manual of Standard Practice". In case of fabricating errors, do not re-bend or straighten reinforcement in a manner that will injure or weaken the material.
- B. Unacceptable Materials: Reinforcement with any of the following defects will not be permitted in the Work:
 - 1. Bar lengths, bends, and other dimensions exceeding specified fabrication tolerances.
 - 2. Bends or kinks not shown on approved Shop Drawings.
 - 3. Bars with reduced cross-section due to excessive rusting or other cause.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine substrate and conditions under which concrete reinforcement is to be placed with installer, and notify ENGINEER, in writing, of unsatisfactory conditions. Do not

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proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 INSTALLATION

- A. Comply with the applicable recommendations of specified codes and standards, and CRSI, Manual of Standard Practice, for details and methods of reinforcement placement and supports.
- B. Clean reinforcement to remove loose rust and mill scale, oil, earth, ice, and other materials that reduce or destroy bond with concrete.
- C. Position, support, and secure reinforcement against displacement during formwork construction or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as required.
 - 1. Place reinforcement to obtain the minimum concrete cover as shown. Arrange, space, and securely tie bars and bar supports together with 16-gage wire to hold reinforcement accurately in position during concrete placement operations. Slab and wall bars shall be tied at every intersection around the periphery of the slab or wall and not less than every 48 inches in the field at walls and 60 inches in the field at slabs.
 - 2. Bar supports shall be placed no further than 4 feet apart in each direction. Supports must be completely concealed in the concrete and shall not discolor or otherwise mar the surface of the concrete.
 - 3. Set wire ties so that twisted ends are directed away from exposed concrete surfaces.
 - 4. Do not secure reinforcing steel to forms with wire, nails or other ferrous metal. Do not permit metal supports subject to corrosion to touch or be within the required clearance to formed or exposed concrete surfaces.
- D. Provide sufficient numbers of supports of strength required to carry reinforcement. Do not place reinforcing bars more than 2-inches beyond the last leg of any continuous bar support. Do not use supports as bases for runways for concrete conveying equipment or similar construction loads.
- E. Splices: Provide reinforcement lap splices by placing bars in contact, and tying tightly with wire. Comply with requirements shown for minimum lap of spliced bars.
- F. Mechanical Couplers in Lieu of Lap Splicing:
 - 1. Provide mechanical butt splices in accordance with the recommendation of the manufacturer of the mechanical splicing device. Butt splices shall develop 125 percent of the specified minimum yield tensile strength of the spliced bars or of the smaller bar in transition splices. Flame dry bars before butt splicing. Provide adequate jigs and clamps or other devices to support, align, and hold the longitudinal centerline of the bars to be butt spliced in a straight line.
- G. Reinforcement Around Openings: Place an equivalent area of steel around the pipe or opening and extend on each side sufficiently to develop bond in each bar. See the Details on Drawings for bar extension length each side of opening. Where welded wire fabric is used, provide extra reinforcing using fabric or deformed bars.
- H. Field Bending: Field bending of reinforcing steel bars is not permitted when rebending will later be required to straighten bars. Rebending of bars at the same place where strain hardening has taken place due to the original bend will damage the bar. Consult

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with the ENGINEER prior to any pour if the CONTRACTOR foresees a need to work out a solution to prevent field bending.

3.3 INSPECTION OF REINFORCEMENT

- A. Do not place concrete until the reinforcing steel is inspected and permission for placing concrete is granted by ENGINEER. All concrete placed in violation of this provision will be rejected.

+ + END OF SECTION + +

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SECTION 03230

BASE RESTRAINT CABLES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
 - 1. This section covers the work necessary to install the tank base restraint cables.

1.2 SUBMITTALS

- A. Shop Drawings: Submit drawings showing the quantity, location and details for approval prior to base restraint cable fabrication.
- B. Product Data: Submit copies of manufacturer's specifications and installation instructions for all materials and base restraint cable accessories.

1.3 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver base restraint cable materials to the site bundled, tagged and marked. Store materials at the jobsite to prevent damage and accumulation of dirt or excessive rust. Store materials on heavy wood blocking so that no part of the materials come in contact with the ground.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Base Restraint Cables
 - 1. Where called for on the Drawings, seismic cables consisting of seven-wire galvanized strands, meeting the minimum strength requirements on the Drawings, shall be installed to connect wall and wall footing. If no strength requirements are shown on the Drawings, the minimum ultimate strength for 3/8" diameter, 1/2" diameter and 0.60" diameter strand shall be 21,400 lbs., 38,200 lbs. and 52,800 lbs., respectively.
 - 2. The strands shall be hot-dipped galvanized before stranding with a minimum zinc coating of 0.85 oz./ft².
 - 3. Galvanized strands for base restraint cables shall meet the quantity and spacing outlined on the Drawings.
- B. Closed Cell Neoprene Base Restraint Cable Sleeves
 - 1. Neoprene sleeves for base restraint cables, which encase the galvanized strands, shall conform to the minimum dimensions shown on the Drawings to permit unrestrained flexing of the strands inside the sleeves under the maximum projected radial wall movements.
 - 2. The material shall be medium grade closed cell neoprene conforming to 2A3 of ASTM D1056 and shall meet the requirements of Specification 03251, Concrete Joints Section 2.4.A.

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C. Steel Reinforcing Bars

1. Steel reinforcing bars used for the support of the base restraint cables shall conform to the requirements of Specification 03200, Reinforcing Steel.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine the conditions under which the base restraint cables are to be placed with the installer, and notify ENGINEER, in writing, of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 INSTALLATION

- A. Base Restraint Cables
 1. The cables may be cut to length with a burning torch.
 2. Where necessary, the strands shall be pre-bent before placing the units in wall and wall footings, as called for on the Drawings.
 3. The strands shall be tied to circumferential reinforcing as required and as shown on the Drawings.
 4. In the footing, the strands shall be tied to the radial footing bars.

+ + END OF SECTION + +

SECTION 03251

CONCRETE JOINTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes installation of concrete joints including, construction joints, expansion joints and fillers, waterstops, and contraction (control) joints.

1.2 REFERENCES

- A. American Concrete Institute (ACI)
 - 1. ACI 301, Specifications for Structural Concrete for Buildings.
- B. American Society for Testing and Materials (ASTM)
 - 1. ASTM A36, Standard Specification for Structural Steel.
 - 2. ASTM D1752, Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
 - 3. ASTM D570, Standard Test Method for Water Absorption of Plastics.
- C. NSF/ANSI Standard 61 Drinking Water Systems Components.

1.3 SYSTEM DESCRIPTION

- A. All joints subject to hydrostatic pressure shall be provided with continuous waterstop.

1.4 SUBMITTALS

- A. Product Data: Submit for approval, Manufacturer's specifications and installation instructions for all materials required.
- B. Shop Drawings: Submit for approval:
 - 1. Layout of all construction joint locations prior to the submittal of steel reinforcing drawings. The concrete pour sequence and placement schedule shall be stated in the construction joint shop drawing layout.
 - 2. Detail for joining polyvinyl chloride waterstops.
- C. Samples: Submit for approval:
 - 1. Waterstops for joints.
 - 2. Expansion joint fillers.
 - 3. Neoprene bearing pads.
 - 4. Closed cell neoprene pads.

1.5 QUALITY ASSURANCE

- A. Install all manufactured items in accordance with manufacturer's instructions.
- B. Store materials off the ground and protected from moisture, dirt and other contaminants. Protect installed and uninstalled materials from UV exposure in accordance with manufacturer's instruction.

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PART 2 - PRODUCTS

2.1 WATERSTOPS

A. Polyvinyl Chloride:

1. NSF-61 Certified PVC waterstops.
2. Reference Standard: ASTM D570.
3. Construction Joints: Minimum of 3/8" thick, ribbed, width as shown, or if not shown, 6-inch minimum, center bulb type may be provided but is not required.
4. Control Joints: Minimum of 3/8" thick, ribbed, center bulb type, width as shown, or if not shown, 6-inch minimum.
5. Expansion Joints: Minimum thickness of 3/8" and 9" minimum width. Provide with "O" or "U" shaped center bulb. The "O" shall have an outside diameter of 3/4" minimum.
6. Base of prestressed tank walls: Minimum thickness of 3/8" and 9" minimum width. Provide a center bulb with an outside diameter equal to the bearing pad thickness, unless shown otherwise.
7. Product and Manufacturer: Provide polyvinyl chloride waterstops of one of the following:
 - a. W.R. Meadows, Incorporated.
 - b. Greenstreak Group, Incorporated.
 - c. Or approved equal.

B. Hydrophilic:

1. Provide chloroprene rubber waterstops, 3/8-inch thick.
2. Product and Manufacturer: Provide one of the following:
 - a. Sika Hydrotite.
 - b. Or approved equal.

C. Injectable Waterstop Hose System:

1. Provide injection hose system with colored vent ends, junction boxes, anchor clips, closure plugs, and all other accessories for a complete injectable waterstop hose system.
2. The injection hose shall have staggered discharge openings and a one-way valve arrangement for uniform discharge of the injection grout. The hose must be of appropriate size and construction for the injection of water-soluble hydrophilic acrylate ester resin. The construction of the hose shall permit free discharge of the specified injectable waterstop into the concrete, without backwash, for the entire length of the hose (with the exception of the vent ends).
3. The vent ends shall be reinforced, color-coded PVC and internally connected to the injectable waterstop hose with shrink-on sleeves.
4. Junction boxes shall be heavy duty plastic made for embedment in concrete and of adequate size for housing and protection of the injection hose vent ends. Boxes shall be securely fitted with temporary knock-out covers to be used during concreting operations. Where exposed to view, boxes shall be fitted with covers mounted flush with the surrounding area.
5. The hoses shall be cut and fitted with vent ends in lengths to suit field measured conditions, with a maximum of 40 linear feet for each hose, including vent ends. Longer lengths shall be fabricated in accordance with the manufacturer's recommendations.
6. Product and Manufacturer:
 - a. SikaFuko ECO 1, Sika Greenstreak.
 - b. Or approved equal.

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D. Injectable Waterstop Injection Grout:

1. Provide NSF-61 approved water soluble, hydrophilic, acrylate ester resin. In the uncured state, resin shall be water soluble, non-water reactive, and solvent free. Resin shall have viscosity of less than 20 mPas and be easily pumped, flushed, and vacuumed during the injection process with the injectable waterstop hose. All procedures shall be performed within the set time of the injected material. In the cured state, material shall be solid, hydrophilic, and flexible with reversible swelling action in excess of its initially installed volume. Cured material shall be resistant to common ground water contaminants, stable in the presence of acids, alkaline solutions, solvents and fuels, and resistant to permanent water pressure and salt-water environments.
2. Product and Manufacturer:
 - a. Sika Greenstreak.
 - b. Polymer Systems.
 - c. Or approved equal.

2.2 PREFORMED EXPANSION JOINT FILLER

- A. Preformed joint filler material shall be of the preformed non-extruding type joint filler constructed of cellular neoprene sponge rubber or polyurethane of firm texture. Bituminous fiber type will not be permitted. All non-extruding and resilient-type preformed expansion joint fillers shall conform to the requirements and tests set forth in ASTM D1752 for Type 1.

2.3 NEOPRENE BEARING PADS

- A. Neoprene pads shall be of dimensions and hardness shown on the Drawings and shall be made by an approved manufacturer. Provide neoprene bearing pads that conform to ASTM D2000 with the following properties:
1. Neoprene bearing pads shall have a hardness of 40 to 50 durometer, a minimum tensile strength of 2,000 psi, a minimum elongation of 500%, and a maximum compressive set of 35%.
- B. Manufacturer: Provide one of the following:
1. Kirkhill Manufacturing Company.
 2. West American Rubber Company, Inc.
 3. Dacon Industries Company.
 4. Or approved equal.

2.4 CLOSED CELL NEOPRENE PADS

- A. Closed cell neoprene pads shall be used as a filler material in the flexible joints between the wall and wall footing and between the wall and roof connection in the areas not taken up by the solid neoprene bearing pads and waterstops. The materials shall be medium grade closed cell neoprene conforming to 2A3 of ASTM D1056 and as further specified here-in and on the Drawings.

Compression deflection	:9 – 13 psi
Shore 00 durometer	:60 – 80 pcf
Density	:12 – 28 pcf
Water absorption by weight	:5%
Temperature range:	
Low (flex without cracking)	:-30°F
High continuous	:150°F

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High intermittent	:200°F
Heat aging (7 days @ 158°F)	
lineal shrinkage (max)	:5%
Tensile strength	115 psi min
Elongation	:180% min
Resilience (bayshore % rebound average ½" thickness @ 72°F)	: 20% - 40%

B. Manufacturer: Provide one of the following:

1. Dacon Industries Co
2. Stockwell Elastomerics
3. Proxis Products LLC

2.5 SOFT MASTIC

A. Soft mastic shall be installed in all voids and cavities around bearing pads, waterstops, and seismic cable sleeves. Such material shall be installed with a consistency that will not adversely affect the quality of waterstop and neoprene materials. Soft mastic shall be an approved joint sealant as specified in Section 07900, Joint Sealants.

2.6 CONCRETE CONSTRUCTION JOINT ROUGHENER

A. Provide a water-soluble non-flammable, surface-retardant roughener.

B. Product and Manufacturer: Provide one of the following:

1. Rugasol-S, as manufactured by Sika Corporation for horizontal joints.
2. MBT EAC-S, as manufactured by Master Builders for horizontal joints.
3. MBT Tuf-Cote (Deep Etch), as manufactured by Master Builders for vertical joints.
4. Or approved equal.

2.7 EPOXY BONDING AGENT

A. Provide an epoxy-resin bonding agent, two component type.

B. Product and Manufacturer: Provide one of the following:

1. Sikadur 32 Hi-Mod LPL, as manufactured by Sika Corporation.
2. Eucopoxy LPL, as manufactured by the Euclid Chemical Company.
3. Epoxite Binder (Code # 2390), as manufactured by A.C. Horn, Incorporated.
4. Or approved equal.

2.8 RUBBER BONDING AGENT

A. Product and Manufacturer: Where bonding agent is subject to contact with potable water, bonding agent shall be NSF-61 Certified. Provide one of the following:

1. Scotch-Grip 1300 Rubber Adhesive, as manufactured by 3M Company.
2. Sikaflex-1a, as manufactured by Sika Corporation.
3. Or approved equal.

2.9 MORTAR

A. Mortar must be composed of cement, sand and water. Materials for mortar must comply with Section 03300. The proportion of sand to cement measured by volume must be 2 to 1 respectively. Mortar must contain only enough water to allow placing.

2.10 BOND BREAKER

- A. Tape for Joints: Adhesive-backed glazed butyl or polyethylene tape, same width as joint that will adhere to premolded joint material or concrete surface.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine substrate and conditions under which Work is to be performed with installer and notify ENGINEER, in writing, of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 CONSTRUCTION JOINTS

- A. Comply with ACI 301, Chapter 2.2, and as specified below.
- B. Locate and install construction joints as shown. Locate additional construction joints as required to satisfactorily complete all Work.
- C. Horizontal Joints Below Prestressed Concrete Tank Column Footings:
 - 1. Roughen existing concrete at the interface of the bottom of the footing and top of the slab by sandblasting. Roughen the existing slab surface to the greatest extent possible by sandblasting, but 1/4-inch is not required to be achieved at these joints. Remove accumulated concrete from the exposed column rebar.
 - 2. Saturate existing slab concrete to a saturated surface dry condition just prior to placing footing concrete.
- D. Other Horizontal Joints:
 - 1. Roughen concrete at the interface of construction joints by sandblasting to expose the aggregate (1/4-inch minimum amplitude) and remove accumulated concrete on rebar immediately subsequent to form stripping. When sandblasting adjacent to installed waterstops, shield installed waterstops from the sandblasting operation. Immediately before placing fresh concrete, thoroughly clean the existing contact surface using a stiff brush or other tools and a stream of water under pressure. The surface shall be clean and wet, but free from pools of water at the moment the fresh concrete is placed.
 - 2. Remove laitance, waste mortar or other substance that may prevent complete adhesion.
- E. Vertical Joints:
 - 1. Remove accumulated concrete on rebar.
 - 2. Roughen concrete at the interface of the construction joints to expose the aggregate (1/4-inch minimum amplitude) through one of the following:
 - a. Apply roughener to the form in a thin, even film by brush, spray or roller in accordance with the manufacturer's instructions. After roughener is dry, concrete may be placed. When concrete has been placed and the form removed, wash loosened material off with high-pressure water spray to obtain roughened surface subject to approval by ENGINEER.
 - b. Sandblast after concrete has fully cured.
 - c. Waterblast after concrete has partially cured.
 - d. Perform cleaning so as not to damage waterstop, if one is present.

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3.3 EXPANSION JOINTS

- A. Locate and install expansion joints as shown. Install preformed joint filler or bearing pads in accordance with manufacturer's instructions. Install caulking and sealants as specified in Section 07900, Joint Sealants.

3.4 WATERSTOPS

- A. General:
 - 1. Comply with ACI 301, Chapter 2, and as specified below. Make all joints in accordance with manufacturer's instructions.
 - 2. Obtain ENGINEER'S approval for waterstop locations not shown.
 - 3. Provide waterstops in all basements, tanks and other substructures up to an elevation at least 12" above grade or to an elevation at least 12" above highest liquid level in tanks, whichever is higher, except where otherwise shown or noted.
- B. Polyvinyl Chloride Waterstop:
 - 1. Install waterstop in accordance with the manufacturer's printed installation instructions.
 - 2. Tie waterstops to reinforcing steel at 12-inches on center, in each direction, so that it is securely and rigidly supported in the proper position, centered in the joint, during concrete placement. Hog rings shall be used to facilitate placing and tying of waterstops to reinforcing steel forms or form-ties.
 - 3. Continuously inspect waterstops during concrete placement to ensure their proper positioning.
 - 4. Provide fused waterstops using equipment as supplied by or recommended by the manufacturer. Joints shall be inspected for strength and pinholes after splicing. Splices shall be strong enough to develop a pulling force of 75 percent of the strength of the waterstop, and shall be watertight.
 - 5. Any waterstop punctured or damaged shall be repaired or replaced.
 - 6. Cover and protect installed waterstops from UV if the pour of concrete will be delayed more than 30 days.
 - 7. Shield installed waterstops from sandblasting when performing surface roughening adjacent to installed waterstops.
- C. Hydrophilic Waterstop: Install where shown in accordance with manufacturer's recommendations.
- D. Injectable Waterstop Hose System:
 - 1. All installation, inspection, and injection operations shall be in strict accordance with the injectable hose system manufacturer's instructions and shall be done by an approved applicator of the injectable hose system manufacturer or under the direct supervision of the injectable hose system manufacturer's representative.
 - 2. Protect all injectable hoses from flame, sparks, oil, dirt, concrete splatter and damage prior to concrete pour.
 - 3. Concrete surfaces where injectable hoses are to be installed are to be clean, dry, smooth, and free from dirt and debris.
 - 4. Hoses must be located with at least 4 inches of concrete cover. Install as close as possible to centerline of wall or slab, with only the vent ends crossing over the injectable hose. Only vent ends should leave the joint.
 - 5. Do not fasten injectable hoses to reinforcing steel.
 - 6. Visible honeycombs at the surface should be patched directly after dismantling formwork to avoid loss of injection material during the injection operation.

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E. Injectable Waterstop Injection Grout:

1. Allow concrete to cure for 28 days prior to injection work.
2. If any leakage is evident at construction joints, inject approved injection material as a remedial measure to stop such leaks and seal the joint area.
3. Prepare injection material and perform actual injection in strict accordance with the manufacturer's printed instructions and specifications regarding mixing, injection procedures, application pot-life, and equipment requirements.
4. Initial injection pressure should be approximately 200-300 psi. Once the injection material has filled the joint area and is no longer flowing, gradually increase the pressure to 500-600 psi. Maintain this pressure for 3-5 minutes, allowing for the injection material to thoroughly penetrate the joint area.
5. Once maximum pressure is maintained for the allotted time frame, disconnect the pump and follow connection procedures to inject hose from opposite end. Injection procedures must be completed within the gel time of the injection material and in accordance with the manufacturer's specifications.
6. If injection material penetrates concrete surfaces, wipe clean with water.
7. Piston type pumps (not diaphragm) shall be used with hydrophilic resin injections.

3.5 BEARING AND FILLER PADS

A. General:

1. Bearing and filler pads shall be installed as indicated on the Drawings.
2. Bearing and filler pads shall be glued to the concrete with an approved rubber cement material, NSF 61 approved, to prevent uplift of the pads during concrete pouring.
3. In addition, all pads shall be held down with approved plastic shim plates placed under the reinforcing steel.
4. Nailing down pads will not be permitted
5. All voids and cavities between bearing and filler pads, waterstop and seismic cable sleeves, irrespective of whether these voids are large or small, shall be filled with a soft mastic / joint sealant.
6. Closed cell neoprene shall be ordered at least 1/4 inch wider than theoretically required to facilitate placing and to reduce development of voids between filler pads, bearing pads and waterstops.
7. Contractor's workmanship shall be such that no cement grout or concrete seepage will occur through the bearing and filler pad area resulting in a restraint of radial wall movements.
8. A continuous neoprene pad and one or more sponge filler pads are required between the top of the wall and the underside of the roof. Any void areas between such pads shall be caulked and sealed to prevent any mortar from the roof pour to come in contact with the wall top.

3.6 BONDING WITH EPOXY ADHESIVE

A. Use adhesive for the following:

1. Bonding of fresh concrete to concrete cured at least 45 days or to existing concrete.
2. Bonding of horizontal surfaces, which will receive a topping.

B. Handle and store epoxy adhesive in compliance with the manufacturer's printed instructions, including safety precautions.

C. Mix the epoxy adhesive in complete accordance with the instructions of the manufacturer.

- D. Before placing fresh concrete, thoroughly roughen and clean hardened concrete surfaces and coat with epoxy adhesive not less than 1/16" thick. Place fresh concrete while the epoxy material is still tacky, without removing the in-place grout coat, and as directed by the epoxy manufacturer.

+ + END OF SECTION + +

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SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Place, finish, cure, strip, and repair concrete.

1.2 REFERENCES

- A. American Concrete Institute (ACI)
1. ACI 211.1, Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
 2. ACI 214, Recommended Practice for Evaluation of Strength Test Results of Concrete.
 3. ACI 301, Specifications for Structural Concrete for Buildings, (includes ASTM Standards referred to herein).
 4. ACI 304, Guide for Measuring, Mixing, Transporting and Placing Concrete.
 5. ACI 305, Hot Weather Concreting.
 6. ACI 306, Cold Weather Concreting.
 7. ACI 309, Guide for Consolidation of Concrete.
 8. ACI 311, Guide for Concrete Inspection.
 9. ACI 318, Building Code Requirements for Reinforced Concrete.
 10. ACI 347, Guide to Formwork for Concrete
 11. ACI 350, Environmental Engineering Concrete Structures.

1.3 SYSTEM DESCRIPTION

- A. Class A Concrete shall be steel reinforced and includes:
1. Foundations.
 2. Walls.
 3. Slabs.
 4. Columns.
 5. Equipment bases.
 6. Pipe supports.
 7. Encasements connected to foundations.
- B. Class B Concrete shall be placed without forms or with simple forms, with little or no reinforcing, and includes:
1. Concrete fill.
 2. Curbs and gutters.
 3. Sidewalks.
 4. Thrust blocks.
 5. Encasements not connected to foundations.

1.4 SUBMITTALS

- A. Samples: Submit samples of materials as specified and as otherwise may be requested by ENGINEER, including names, sources and descriptions.
- B. Product Data: Submit for approval the following:

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1. Manufacturer's specifications with application and installation instructions for proprietary materials and items, including admixtures and bonding agents.
 2. List of concrete materials and concrete mix designs proposed for use. Include the results of all tests performed to qualify the materials and to establish the mix designs.
- C. Laboratory Test Reports: Submit copies of laboratory test reports for materials and mix design tests
- D. Delivery Tickets: Furnish to ENGINEER copies of all weighmaster certificate delivery tickets for each load of concrete delivered to the site. Provide items of information as specified in ASTM C94, Section 16. Delivery tickets shall be signed by a Certified Weighmaster.

1.5 QUALITY ASSURANCE

- A. Tests for Concrete Materials: Submit written reports to ENGINEER, for each material sampled and tested, prior to the start of Work. Provide the Project identification name and number, date of report, name of CONTRACTOR, name of concrete testing service, source of concrete aggregates, material manufacturer and brand name for manufactured materials, values specified in the referenced specification for each material, and test results. Indicate whether or not material is acceptable for intended use.
- B. If the concrete mix designs specified herein have not been used previously by the ready-mix supplier, mix proportions and concrete strength curves for regular cylinder tests shall be established by an approved ready-mix supplier or an independent testing laboratory based on the relationship of 7, 14 and 28 day strengths versus slump values of 2, 4 and 6 inches, all conforming to these Specifications. A laboratory, independent of the ready-mix supplier, shall be required to prepare and test all concrete cylinders. The costs for preparation of mix designs, not previously used by the ready-mix supplier, and testing of concrete and materials shall be borne by CONTRACTOR.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement:
1. Portland cement, ASTM C150, Type II; or blended hydraulic cement, ASTM C595, Type 1P (MS).
 2. Do not use cement which has deteriorated because of improper storage or handling.
- B. Aggregates: ASTM C33 and as herein specified.
1. Do not use aggregates containing soluble salts, substances such as iron sulfides, pyrite, marcasite, ochre, or other materials that can cause stains on exposed concrete surfaces.
 2. Fine Aggregate: Provide clean, sharp, natural sand free from loam, clay, lumps or other deleterious substances.
 3. Coarse Aggregate: Provide clean, uncoated, processed aggregate containing no clay, mud, loam, or foreign matter, as follows:
 - a. Crushed stone, processed from natural rock or stone.
 - b. Coarse Aggregate Size: Size to be ASTM C33, Nos. 57 or 67, except that No. 467 may be used for footings, foundation mats and walls 16" or greater in thickness.

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- C. Water: Clean, free from injurious amounts of oils, acids, alkalis, organic materials or other substances that may be deleterious to concrete or steel.

2.2 CONCRETE ADMIXTURES

- A. Provide admixtures produced by established reputable manufacturers, and use in compliance with the manufacturer's printed instruction. Do not use admixtures that have not been incorporated and tested in the accepted mixes, unless otherwise authorized in writing by ENGINEER.
- B. Air-Entraining Admixtures: ASTM C260.
1. Product and Manufacturer: Provide one of the following:
 - a. SIKA AER, as manufactured by Sika Corporation.
 - b. MasterAir AE 200, as manufactured by BASF.
 - c. Daravair, as manufactured by W.R. Grace & Conn.
 - d. Or approved equal.
- C. High-Range Water-Reducing Admixture ("Superplasticizer"): ASTM C494, Type F/G.
1. Superplasticizer shall be used in all Class A Concrete. Do not use high range water-reducing admixture containing more chloride ions than are contained in municipal drinking water. Add only at the job site to concrete in compliance with the manufacturer's printed instruction.
 2. Product and Manufacturer: Provide one of the following:
 - a. Sikament 320, as manufactured by Sika Corporation.
 - b. MasterGlenium, as manufactured by BASF.
 - c. Daracem-100, as manufactured by W.R. Grace & Conn.
 - d. Or approved equal.
- D. Water-Reducing Admixture: ASTM C 494, Type A.
1. A water-reducing, aqueous solution of a modification of the salt of polyhydroxylated organic acids. Do not use admixture containing any lignin, nitrates or chlorides added during manufacture.
 2. Product and Manufacturer: Provide one of the following:
 - a. Eucon WR-75, as manufactured by The Euclid Chemical Company.
 - b. MasterPozzoloth, as manufactured by BASF.
 - c. WRDA series, as manufactured by W.R. Grace & Conn.
 - d. Or approved equal.
- E. Pozzolanic Admixtures:
1. Pozzolanic admixtures shall not be used in structures with concrete in contact with potable water, but may be used in other concrete.
 2. Provide Mineral admixtures, when used, meeting the requirements of ASTM C618 Class F.
 3. A substitution by weight, of the portland cement by pozzolan, so that the total tricalcium aluminate content of the resulting cement plus pozzolan is not greater than 8%, will be considered. However, the pozzolan shall not exceed 20% by weight of the cement plus pozzolan.
- F. Set-Control Admixtures: ASTM C494, as follows:
1. Type B, Retarding.
 2. Type C, Accelerating.
 3. Type D, Water-reducing and Retarding.
 4. Type E, Water-reducing and Accelerating.

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5. Type F, Water-reducing, high range admixtures.
 6. Type G, Water-reducing, high range, and retarding admixtures.
- G. Calcium Chloride: Do not use calcium chloride in concrete, unless otherwise authorized in writing by ENGINEER. Do not use admixtures containing calcium chloride where concrete is placed against galvanized steel.

2.3 NSF/ANSI 61 CERTIFICATION

- A. Concrete that comes in direct contact with potable water shall include the following:
1. Admixtures shall be NSF-61 Certified.
 2. Concrete with admixtures not meeting NSF-61 water quality standards will be rejected.

2.4 PROPORTIONING AND DESIGN OF MIXES

- A. Prepare design mixes of concrete. Mixes subject to the following limitations:
1. Class A Concrete
 - a. Specified 28-day Compressive Strength:
 - 1) Prestressed Tank core walls and all Vault walls: 5,000 psi minimum.
 - 2) All other Class A Concrete: 4,000 psi minimum. 5,000 psi mix may be used.
 - b. Air content: 2.5% $\pm$ 1%.
 - c. Slump, before addition of superplasticizer: 3½" $\pm$ ½"
 - d. Slump, after addition of superplasticizer: 8" maximum

Coarse Aggregate Size	Cementitious Content-Pounds Per Cubic Yard	Water-Cement Ratio by Weight
¾"	625 min, 800 max	0.38
1"	600 min, 800 max	0.39

- e. Use superplasticizer in all Class A Concrete. Use water reducers in combination with superplasticizers as required for mixing.
 - f. Use ASTM C494, Type B set retarding admixture in all Class A Concrete used for wall construction in the amounts recommended by the additive manufacturer whenever the air temperature during the pour exceeds 85°F.
 2. Class B Concrete
 - a. Specified 28-day Compressive Strength: 2,500 psi.
 - b. Maximum Water-Cement Ratio by Weight: 0.49.
 - c. Slump: 3" Minimum, 5" Maximum.
- B. The total chloride ion content of hardened concrete shall not be more than 0.06 percent by weight of cement.
- C. Use an independent testing facility acceptable to ENGINEER for preparing and reporting proposed mix designs.
- D. Admixtures:
1. Use amounts of admixtures as recommended by the manufacturer for climatic conditions prevailing at the time of placing. Adjust quantities and types of admixtures as required to maintain quality control.

2.5 EPOXY BONDING AGENT

- A. For use in all dry-packed holes, concrete repair and for unplanned cold-joints.
- B. Provide an epoxy-resin bonding agent, two component, polysulfide type.
- C. Product and Manufacturer: Provide one of the following:
 - 1. Sikadur 32, Hi-Mod LPL, as manufactured by Sika Corporation.
 - 2. Eucopoxy LPL, as manufactured by the Euclid Chemical Company.
 - 3. Or approved equal.

2.6 CONCRETE CURING MATERIALS

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 10 ounces per square yard and complying with AASHTO M182, Class 3.
- B. Moisture-Retaining Cover: One of the following, complying with ASTM C171.
 - 1. Waterproof paper.
 - 2. Polyethylene film.
 - 3. White burlap-polyethylene sheet.
- C. Curing Compound:
 - 1. Where compound is used on potable water bearing structures provide NSF-61 Certified:
 - a. Product and Manufacturer: Provide one of the following:
 - 1) Quantum-Cure 61, as manufactured by Atlas Tech Products.
 - 2) Or approved equal.
 - 2. Where compound is used on non-potable concrete surfaces: ASTM C309 Type 1-D (water retention requirements):
 - a. Product and Manufacturer: Provide one of the following:
 - 1) Super Aqua Cure VOX, as manufactured by The Euclid Chemical Company.
 - 2) Sealtight 1100, as manufactured by W.R. Meadows, Incorporated.
 - 3) Or approved equal.

2.7 EMBEDDED ITEMS

- A. Provide and install items such as plates, angles, inserts, bolts and similar items not specified elsewhere under this Section. Carbon steel embedded items shall be hot dip galvanized after fabrication.

PART 3 - EXECUTION

3.1 CONCRETE MIXING

- A. Provide concrete produced by the ready-mixed process.
- B. Comply with the requirements of ASTM C 94, and as herein specified. Proposed changes in mixing procedures, other than herein specified, must be accepted by ENGINEER before implementation.
 - 1. Plant equipment and facilities: Conform to National Ready- Mix Concrete Association "Plant and Delivery Equipment Specification."

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2. Mix concrete in revolving type truck mixers that are in good condition and which produce thoroughly mixed concrete of the specified consistency and strength.
3. Do not exceed the proper capacity of the mixer.
4. Mix concrete for a minimum of two minutes after arrival at the job site, or as recommended by the mixer manufacturer.
5. Mix concrete during transit only as recommended by the mixer manufacturer.
6. Mix at proper speed until concrete is discharged.
7. Maintain adequate facilities at the job site for continuous delivery of concrete at the required rates.
8. Provide access to the mixing plant for ENGINEER at all times.

3.2 TRANSPORTING CONCRETE

- A. Transport and place concrete not more than 90 minutes after water has been added to the dry ingredients or before 250 revolutions of the drum or blades, whichever occurs first.
- B. If an admixture is used to retard the set time and the concrete temperature does not exceed 85 degrees F, the travel and placing time may be extended to 120 minutes or 300 revolutions of the drum or blades, whichever occurs first.
- C. Take care to avoid spilling and separation of the mixture during transportation.
- D. Do not place concrete in which the ingredients have been separated.
- E. Do not retemper partially set concrete.
- F. Use suitable and approved equipment for transporting concrete from mixer to forms.

3.3 CONCRETE PLACEMENT

- A. Pre-wet granular fill below concrete floor slabs and footings to a saturated surface dry condition immediately prior to pouring concrete.
- B. General: Place concrete continuously so that no concrete will be placed on concrete, which has hardened sufficiently to cause the formation of seams or planes of weakness within the section. If a section cannot be placed continuously, provide construction joints as specified in Section 03251, Concrete Joints. Deposit concrete as nearly as practical in its final location to avoid segregation due to rehandling or flowing. Do not subject concrete to any procedure that will cause segregation.
 1. Screed concrete that is to receive other construction to the proper level to avoid excessive skimming or grouting.
 2. Do not use concrete which becomes non-plastic and unworkable, or does not meet the required quality control limits, or which has been contaminated by foreign materials. Do not use retempered concrete. Remove rejected concrete from the job site and dispose of it in an acceptable location.
 3. Do not place concrete until all forms, bracing, reinforcement, and embedded items are in final and secure position.
 4. Do not place in cold weather, unless adequate precautions are taken against frost action.
 5. Do not place footings or slabs on frozen soil.
 6. Unless otherwise approved, place concrete only when ENGINEER is present.

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7. Allow a minimum of 3 days of curing before placing new concrete against a slab or wall already in place.
- C. Concrete Conveying:
1. Handle concrete from the point of delivery and transfer to the concrete conveying equipment and to the locations of final deposit as rapidly as practical by methods that will prevent segregation and loss of concrete mix materials.
 2. Provide mechanical equipment for conveying concrete to ensure a continuous flow of concrete at the delivery end. Provide runways for wheeled concrete conveying equipment from the concrete delivery point to the locations of final deposit. Keep interior surfaces of conveying equipment, including chutes, free of hardened concrete, debris, water, ice and other deleterious materials.
 3. Pumping concrete is permitted, however do not use aluminum pipe for conveying.
- D. Placing Concrete into Forms:
1. Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place concrete at such a rate that concrete that is being integrated with fresh concrete is still plastic.
 2. Do not permit concrete to free fall within the form from a distance exceeding 8'-0", except as noted in Section 03100. Use "elephant trunks" or "wall pipes" to prevent free fall and excessive splashing on forms and reinforcement.
 3. Remove temporary spreaders in forms when concrete placing has reached the elevation of such spreaders.
 4. Consolidate concrete placed in forms by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with the applicable recommended practices of ACI 309. Vibration of forms and reinforcing will not be permitted.
 5. Vibrators shall have a frequency of at least 8,000 vpm, with amplitude required to consolidate the concrete in the section being placed. At least one stand-by vibrator in operable condition shall be at the placement site prior to initiating placement of the concrete.
 6. Do not use vibrators to transport concrete inside of forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate the layer of concrete and at least 6" into the preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit the duration of vibration to the time necessary to consolidate the concrete and complete embedment of reinforcement and other embedded items without causing segregation of the mix.
 7. The forms shall contain sufficient windows or be limited in height to allow visual observation of the concrete and the vibrator operators shall be required to see the concrete being consolidated to ensure good quality workmanship or the CONTRACTOR shall have a person who is actually observing the vibration of the concrete at all times and advising the vibrator operators of any changes needed to assure complete consolidation.
 8. Do not place concrete in beam and slab forms until the concrete previously placed in columns and walls is no longer plastic.
 9. Force concrete under pipes, sleeves, openings and inserts from one side until visible from the other side to prevent voids.
 10. The following minimum equipment, which must be in excellent working condition, shall be available on the site for every concrete placement operation on prestressed concrete floor, wall and roof:

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- a. Conveying: 2 pumps, or 2 cranes, or 1 pump and 1 crane (for floor and roof decks only).
 - b. Vibrating: 3 vibrators of 14,000 vibrations per minute (minimum).
 - c. Trowelling: 2 power operated troweling machines (for floor and roof decks only).
 - d. ENGINEER shall be the sole judge as to the acceptability of the equipment as to its condition and capacity. CONTRACTOR shall assume complete responsibility for having adequate equipment.
- E. Placing Concrete Slabs and Footings:
- 1. Deposit and consolidate concrete in a continuous operation, within the limits of construction joints, until the placing of a panel or section is completed.
 - 2. Consolidate concrete during placing operations using mechanical vibrating equipment, so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 3. Consolidate concrete placed in beams and girders of supported slabs, and against bulkheads of slabs on ground, as specified for formed concrete structures.
 - 4. Bring surfaces to the correct level. Smooth the surface, leaving it free of humps or hollows. Do not sprinkle water on the plastic surface. Do not disturb the surfaces prior to beginning finishing operations.
- F. Bonding for Next Concrete Pour: Per Section 03251, Concrete Joints.
- G. Quality of Concrete Work:
- 1. Make all concrete solid, compact and smooth, and free of laitance, cracks and cold joints.
 - 2. All concrete for liquid retaining structures, and all concrete in contact with earth, water, or exposed directly to the elements shall be watertight.
 - 3. Cut out and properly replace to the extent ordered by ENGINEER, or repair to the satisfaction of ENGINEER, surfaces which contain cracks or voids, are unduly rough, or are in any way defective. Thin patches or plastering will not be acceptable.
 - 4. Repair all leaks through concrete, and cracks, holes or other defective concrete in areas of potential leakage and make watertight.
 - 5. Repair, remove, and replace defective concrete as ordered by ENGINEER at no additional cost to OWNER.
- H. Cold Weather Placing:
- 1. Protect all concrete Work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures, in compliance with the requirements of ACI 306 and as herein specified.
 - 2. When the air temperature has fallen to or may be expected to fall below 40°F, provide adequate means to maintain the temperature, in the area where concrete is being placed, at between 50°F and 70°F for at least seven days after placing. Provide temporary housings or coverings including tarpaulins or plastic film. Maintain the heat and protection, if necessary, to ensure that the ambient temperature does not fall more than 30°F in the 24 hours following the seven-day period. Avoid rapid dry-out of concrete due to overheating, and avoid thermal shock due to sudden cooling or heating.
 - 3. When air temperature has fallen to or is expected to fall below 40°F, uniformly heat all water and aggregates before mixing as required to obtain a concrete mixture temperature of not less than 55°F and not more than 85°F at point of placement.
 - 4. Do not use frozen materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials. Ascertain that forms,

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reinforcing steel, and adjacent concrete surfaces are entirely free of frost and ice before placing concrete.

5. When temperatures are expected to be below 32°F the night before the concrete is placed, then all reinforcing steel, forms and the ground shall be preheated, for a minimum of 12 hours, under a minimum temperature of 50°F.
6. Do not use salt and other materials containing antifreeze agents or chemical accelerators, or set-control admixtures, unless approved by ENGINEER, in mix designs.
7. Weather predictions made by the nearest NOAA station, and corrected for the local elevation and environmental conditions, may be used to determine whether cold weather protection shall be required. Thermometers will be used by ENGINEER and these readings shall determine whether cold weather protection shall be required and whether cold weather protection is adequate.

I. Hot Weather Placing:

1. When hot weather conditions exist as any combination of high air temperature, low relative humidity and wind velocity that would seriously impair the quality and strength of concrete, place concrete as recommended by ACI 305 and as herein specified.
2. Cool ingredients before mixing to maintain concrete temperature at time of placement below 85°F. No concrete shall be placed if its temperature exceeds 90°F. Mixing water may be chilled, or chopped ice may be used, or liquid nitrogen may be added. Ice, when introduced into the mixer shall be in such form that it will be completely melted and dispersed throughout the mix at the completion of the mixing time. The addition of ice shall not increase the specified water to cement ratio.
3. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that the steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
4. Thoroughly wet forms before placing concrete. Forms shall be free of standing water when concrete is placed.
5. Do not use set-control admixtures, unless approved by ENGINEER in mix designs.
6. Fog spray shall be used during finishing operations whenever necessary to avoid surface plastic shrinkage cracking. Fog spray shall also be used after finishing and before the specified curing is commenced to avoid surface plastic shrinkage cracking.
7. Obtain ENGINEER'S approval of other methods and materials proposed for use.

J. Removal of Forms:

1. The CONTRACTOR shall be responsible for all damage resulting from improper and premature removal of forms. Satisfy all applicable OSHA requirements with regard to safety of personnel and property.
2. Forms and shoring for elevated structural slabs shall remain in place in accordance with ACI 318, Chapter 6, and until the concrete has reached a compressive strength equal to 100% of the specified 28-day compressive strength as determined by test cylinders, unless noted otherwise in Section 03100 - Concrete Formwork. Removal of all supports prior to obtaining adequate field cured cylinder results and reshoring shall not be permitted.

K. Backfill Against Walls:

1. Do not place backfill against walls until the concrete has obtained a compressive strength equal to the specified 28-day compressive strength and prestressing is complete. Where backfill is to be placed on both sides of the wall, the backfill shall be placed simultaneously on both sides to prevent differential pressures.

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2. Since the walls of some structures are laterally restrained or supported by suspended slabs and/or slabs on grade and are not designed as cantilever retaining walls, the CONTRACTOR shall submit a schedule of wall shoring, bracing, and backfilling that is coordinated with the concrete curing, test cylinder reports and the design assumptions and obtain a review from the ENGINEER prior to proceeding.

L. Patching:

1. Patching of concrete shall provide an acceptable and structurally sound surface finish uniform in appearance or the CONTRACTOR shall upgrade the finish by other means at no additional cost.
2. Tie Holes: All tie holes, except where sealant is indicated, shall be filled with dry pack nonshrink grout. White cement shall be added as needed so the color of grout after curing matches the color of adjacent concrete. Tie holes shall be thoroughly sandblasted or roughened. Flush the patch area with water and allow to dry. Coat the surface of the existing concrete with an approved bonding agent prior to filling with nonshrink grout. Complete the repair in the time duration specified by the bonding agent manufacturer. The grout shall be rammed into place in thin layers and leveled to the plane of the surrounding concrete. Cure in accordance with the manufacturer's recommendations.
3. Defective Areas: Remove all defective concrete such as honeycombed areas and rock pockets out to sound concrete. Small shallow holes caused by air entrapment at the surface of the forms shall not be considered defects unless the amount is so great as to be considered not the standard of the industry and due primarily of poor workmanship. If chipping is required, the edges shall be perpendicular to the surface. Feather edges shall not be permitted. The defective area shall be filled with a nonshrink, nonmetallic, grout. Use an approved bonding agent on horizontal patches prior to placing nonmetallic, non shrink grout. Since some bonding agents may not be compatible for some vertical surface patching techniques, demonstrate all methods for repair of vertical surfaces using the actual materials, methods, and curing procedures required by the manufactures of the materials on the project site. The CONTRACTOR shall consult with representatives of the bonding agent manufacturer and the nonshrink grout manufacturer, and these representatives shall be onsite and assist in the demonstration.
4. Blockouts at Pipes or Other Penetrations: Conform to details shown or submit proposed blockouts for review. Use nonshrink, nonmetallic grout.

3.4 FINISH OF FORMED SURFACES

A. Abrasive Blasting:

1. The exterior surface of poured concrete wall areas, which will receive strand wrapped prestressing/shotcrete or paint, if any, shall be abrasive blasted, regardless of the forming method used, by a mechanical etching or shot blast system combined with a vacuum recovery system, or a self-contained water blasting system.
2. The surface shall be blasted sufficiently to remove all laitance, form oil or other type coatings.
3. The surface shall be cut sufficiently to provide a good mechanical bond between the shotcrete covercoat and the concrete wall. The surface shall be cut to a minimum CSP5 profile, was established by the International Concrete Repair Institute (ICRI), over a minimum 90% of the area as measured over any one-foot square area.
4. Systems that have not been used in the past to prepare circular tank wall surfaces for shotcreting and strand wrapping or systems which rely on sandblasting or steel shot without a vacuum system will not be allowed.

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5. All abrasive blasting shall be done to the satisfaction of ENGINEER, and this work shall not be started before the completion date of the curing period or before all the tie holes have been dry packed.
- B. Rough Form Finish:
1. Standard rough form finish is with concrete surface having the texture imparted by the form material, with tie holes and defective areas repaired and patched with mortar of 1 part cement to 1½ parts sand & all fins and other projections exceeding 1/4" in height rubbed down or chipped off.
 2. Use rough form finish for the following:
 - a. Where not abrasive blasted, exterior vertical surfaces up to 1' below grade.
- C. Smooth Form Finish:
1. Provide a surface finish Environmental Surface Finish 2.0, ESF-2.0, per ACI 350.5-12 which includes patching voids greater than 3/4-in wide or 1/4-inch deep, removing projections greater than 1/4-in, and patching tie holes. Abrupt irregularities shall be measured within 1-inch of the irregularity. Gradual surface irregularities shall be measured by determining the gap between concrete and near surface of a 5-foot vertical straightedge, measured between contact points. Finish shall be approved using a mockup demonstration of the concrete surface showing the appearance and texture.
 2. Except where surfaces have been previously covered as specified above, use smooth finish for the following:
 - a. Interior walls and other interior vertical surfaces.
 - b. Undersides of suspended slabs.
 - c. Other areas shown.
- D. Smooth Rubbed Finish:
1. Provide smooth, rubbed finish to concrete surfaces which have received smooth form finish as follows:
 - a. Rubbing of concrete surfaces not later than the day after form removal.
 - b. Moistening of concrete surfaces and rubbing with carborundum brick or other abrasive until a uniform color and texture is produced. Do not apply cement grout other than that created by the rubbing process.
 2. Except where surfaces have been previously covered as specified above, use smooth rubbed finish for the following:
 - a. Exterior exposed walls and other vertical surfaces down to 1' below grade.
 - b. Other areas shown.
- E. Related Unformed Surfaces:
1. At tops of walls, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces, strike off smooth and finish with a texture matching the adjacent formed surfaces. Continue the final surface treatment of formed surfaces uniformly across the adjacent unformed surfaces, unless otherwise shown.

3.5 MONOLITHIC SLAB FINISHES

- A. Float Finish:
1. After placing concrete slabs, do not work the surface further until ready for floating. Begin floating when the surface water has disappeared or when the concrete has stiffened sufficiently. Check and level the surface plane to a tolerance not exceeding 1/4" in 10' when tested with a 10' straightedge. Cut down high spots and fill all low

spots. Uniformly slope surface to drains as shown. Immediately after leveling, refloat the surface to a uniform, smooth, granular texture.

2. Use float finish for the following:
 - a. Exterior below grade horizontal surfaces.
 - b. Surfaces to receive additional finishes, except as shown or specified.
- B. Trowel Finish:
 1. After floating, begin the first trowel finish operation using a power-driven trowel. Begin final troweling when the surface produces a ringing sound as the trowel is moved over the surface.
 2. Consolidate the concrete surface by the final hand troweling operation. Finish shall be free of trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/8" in 10' when tested with a 10' straight edge. Grind smooth surface defects that would telegraph through applied floor covering system.
 3. Use trowel finish for the following:
 - a. Interior exposed slabs, unless otherwise shown or specified.
- C. Non-Slip Broom Finish:
 1. Immediately after float finishing, slightly roughen the concrete surface by brooming in the direction perpendicular to the main traffic route. Use fiber-bristle broom, unless otherwise directed. Coordinate the required final finish with ENGINEER before application.
 2. Use Non-Slip Broom Finish for the following:
 - a. Exterior exposed horizontal.
 - b. Interior and exterior concrete steps and ramps.

3.6 CONCRETE CURING AND PROTECTION

- A. General:
 1. Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for the period of time necessary for hydration of the cement and proper hardening of the concrete.
 2. Start initial curing after placing and finishing concrete as soon as free moisture and bleed water sheen has disappeared from the concrete surface. Keep concrete continuously moist during initial curing.
 3. Begin final curing procedures immediately following initial curing and before the concrete has dried. The total curing duration shall not be less than ten (10) days. Avoid rapid drying at the end of the final curing period.
- B. Use one of the following methods as approved by ENGINEER:
 1. Walls:
 - a. Method 1: Leave concrete forms in place and keep exposed concrete surfaces wet for the entire curing duration. If forms are loosened and the contact between the concrete surface and forms is broken and the forms left in place, then the entire wall shall be wet cured.
 - b. Method 2: Continuously sprinkle or fog with water 100 percent of the exposed surfaces for the curing duration immediately after removal of forms.
 - c. Method 3: When approved by ENGINEER and as noted below, apply curing compound immediately after removal of forms.
 2. Prestressed Concrete Slabs and Curbs: All horizontal, floated and troweled surfaces shall be sprayed with a curing compound at an application rate of 200 sf per gallon immediately after finishing. After the surface is dry to the touch, a moisture-retaining

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covering shall be installed. The seams and ends shall be carefully taped with waterproof tape and sealed to the concrete surface and kept on such surface for as long as possible, but for at least ten (10) days after placement, to minimize the loss of moisture trapped between the cover and the concrete.

- a. Water must be introduced between the moisture-retaining cover and the concrete (after the concrete has set) whenever moist drops cannot be detected on the concrete side of the cover or the concrete surface is noticeably dry.
 - b. Immediately repair any holes or tears during the curing period using cover material and waterproof tape.
3. Slab and Curbs not including prestressed concrete tanks:
- a. Method 1: Protect surface by water ponding for the entire curing duration.
 - b. Method 2: Cover concrete surfaces and exposed edges with the specified absorptive cover, thoroughly saturating the cover with water, and keeping the absorptive cover continuously wet with sprinklers or porous hoses during the curing duration. Lap adjacent absorptive cover sections 3-inches minimum.
 - c. Method 3: Cover the concrete surfaces and exposed edges with the specified moisture-retaining cover during the curing duration. Seal edges and seams with waterproof tape, adhesive or sand berm. Water must be introduced between the moisture-retaining cover and the concrete surface whenever moist drops cannot be detected on the concrete side of the cover or the concrete surface is noticeably dry.
 - d. Method 4: Cover all exposed surfaces with 1-inch minimum layer of wet sand, earth, or sawdust and keep continuously wet for the curing duration.
 - e. Method 5: Continuously sprinkle or fog exposed surfaces for the curing duration.
 - f. Method 6: When approved by ENGINEER and as noted below, apply liquid curing compound immediately after final finishing when surface will no longer be damaged by traffic necessary to apply curing compound.
- C. Liquid curing compound:
1. Apply the specified curing compound to concrete surfaces when permitted by ENGINEER. Slabs to receive terrazzo floors, concrete/grout topping or ceramic tile, concrete of water bearing structures, and concrete that will receive coatings shall not be cured with liquid curing compound. The compounds shall be applied by power spray equipment in accordance with the manufacturer's directions. Recoat areas, which are subjected to heavy rainfall within 3 hours after initial application. Maintain the continuity of the coating and repair damage to the coat during the entire curing period. Remove curing compound from exposed surfaces at the end of the curing duration. For concrete surfaces, which will be in contact with potable water, the manufacturer shall certify that the curing compound used is NSF 61 approved.
- D. Temperature of Concrete During Curing:
1. When the nighttime low temperature may drop to 40°F or below, maintain the concrete temperature between 50°F and 70°F continuously throughout the curing period, by heating, covering, insulation or housing as required.
 2. When the daytime high temperature may rise to 90°F or above, maintain the concrete temperature at a minimum and reduce temperature variations by providing moist curing continuously for the concrete curing period.
 3. During either of the conditions specified above, the minimum curing time shall be 10 days (240 hours), after which coverings, housings, and insulation shall remain on the work for an additional 3 days, to allow gradual temperature equalization with the atmosphere.

- E. Protection from Mechanical Injury: During the curing period, protect concrete from damaging mechanical disturbances including load stresses, heavy shock, excessive vibration, and from damage caused by rain or flowing water. Protect all finished concrete surfaces from damage by subsequent construction operations.

3.7 FIELD QUALITY CONTROL

- A. The OWNER will employ a testing laboratory to perform field quality control testing. ENGINEER will direct the number of tests and cylinders required. Furnish all necessary assistance required by ENGINEER.
- B. Quality Control Testing During Construction:
 - 1. Perform sampling and testing for field quality control during the placement of concrete, as follows:
 - a. Sampling Fresh Concrete: ASTM C172.
 - b. Slump: ASTM C143; one test for each concrete load at point of discharge; and one for each set of compressive strength test specimens.
 - c. Compressive Strength Tests: ASTM C39; one set of 4 standard compression cylinders for each 100 cubic yards or fraction thereof, of each mix design placed in any one day; 1 specimen tested at 7 days, and 2 specimens tested at 28 days, 1 held. Cast, store and cure specimens as specified in ASTM C31.
 - 1) Adjust mix if test results are unsatisfactory and resubmit for ENGINEER'S approval.
 - 2) Concrete that does not meet the strength requirements is subject to rejection and removal from the Work, or to other such corrective measures as directed by ENGINEER, at the expense of CONTRACTOR.
 - 3) In addition to the test cylinders referred to in Section 03300.3.7.B.1.c, an additional 3 test cylinders shall be made for each day's pour, or for every 4,000 square feet of wall and roof surface, whichever provides the largest number of cylinders. They shall be cured in the same manner, and in the same location of the concrete area to be investigated. Before walls may be prestressed, or before roof forms may be stripped, at least one cylinder, of each batch of 3 cylinders, must be tested to verify whether the in place concrete strength meets the minimum specified design strength.
 - d. Concrete Temperature: Test each time a slump test is made.
 - 2. Where questionable field conditions may exist during placing concrete or immediately thereafter, strength tests of specimens cured under field conditions will be required by ENGINEER to check the adequacy of curing and protecting of the concrete placed. Specimens shall be molded at the same time and from the same samples as the laboratory cured specimens.
 - a. Provide improved means and procedures for protecting concrete when the 28-day compressive strength of field- cured cylinders is less than 85% of companion laboratory-cured cylinders.
 - b. When laboratory-cured cylinder strengths are appreciably higher than the minimum required compressive strength, field-cured cylinder strengths need not exceed the minimum required compressive strength by more than 500 psi even though the 85 percent criterion is not met.
 - 3. The testing laboratory shall submit certified copies of test results directly to ENGINEER and CONTRACTOR after tests are made.
- C. Evaluation of Quality Control Tests:

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1. Do not use concrete delivered to the final point of placement that has slump or temperature outside the specified values, nor that which is older than 90 minutes from batching, unless a retarding admixture is used as indicated in section 3.2.
 2. Compressive strength tests for laboratory-cured cylinders will be considered satisfactory if the averages of all sets of three consecutive compressive strength tests results equal or exceed the 28-day design compressive strength of the type or class of concrete; and, no individual strength test falls below the required compressive strength by more than 500 psi.
 3. If the compressive strength tests fail to meet the minimum requirements specified, the concrete represented by such tests will be considered deficient in strength and subject to replacement, reconstruction or to other action approved by ENGINEER.
- D. Testing Concrete Structure for Strength:
1. When there is evidence that the strength of the in-place concrete does not meet specification requirements, provide the services of a concrete testing service to take cores drilled from hardened concrete for compressive strength determination at no additional expense to OWNER. Provide tests complying with ASTM C42 and the following:
 - a. Take at least three (3) representative cores from each member or suspect area at locations directed by ENGINEER.
 - b. Strength of concrete for each series of cores will be considered satisfactory if their average compressive strength is at least 85% and no single core is less than 75% of the 28-day required compressive strength.
 - c. Report test results, in writing, to ENGINEER on the same day that tests are made. Include in test reports the Project identification name and number, date, name of CONTRACTOR, name of concrete testing service, location of test core in the structure, type or class of concrete represented by core sample, nominal maximum size aggregate, design compressive strength, compression breaking strength and type of break (corrected for length-diameter ratio), direction of applied load to core with respect to horizontal plane of the concrete as placed, and the moisture condition of the core at time of testing.
 2. Fill core holes solid with non-shrink, high strength grout, and finish to match adjacent concrete surfaces.
- E. Water Leakage Tests for All Water-Holding Structures:
1. For prestressed concrete tanks, reference Section 03314 - Prestressed Concrete Tanks for requirements.

3.8 MISCELLANEOUS CONCRETE ITEMS

- A. Filling-In: Fill-in holes and openings left in concrete structures for the passage of work by other contractors, unless otherwise shown or directed, after the work of other contractors is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide all other miscellaneous concrete filling shown or required to complete the Work.
- B. Curbs:
1. Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
 2. Exterior curbs shall have rubbed finish for vertical surfaces and a broomed finish for top surfaces.

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C. Equipment Bases:

1. Unless specifically shown otherwise, provide concrete bases for all pumps and other equipment. Construct bases to the dimensions shown, or as required to meet manufacturers' requirements and drawing elevations. Where no specific elevations are shown, bases shall be 6-inches thick and extend 3-inches outside the metal equipment base or supports. Bases to have smooth trowel finish, unless a special finish is required. In those cases, provide appropriate concrete finish.
2. Include all concrete equipment base work not specifically included under other Sections.
3. In general, place bases up to 1-inch below the metal base. Properly shim equipment to grade and fill 1-inch void with non-shrink grout as specified in Section 03600, Grout.

D. Installation of embedded items

1. Install all embedded items prior to concrete placement, or, if necessary, as soon after concrete placement as possible, before concrete is set.
2. Use temporary support and bracing to keep embedded items in place while concrete cures.
3. Protect all embedded items from damage during concrete installation.

3.9 CONCRETE REPAIRS

A. Repair of Formed surfaces:

1. Repair exposed-to-view formed concrete surfaces that contain defects which adversely affect the appearance of the finish. Surface defects that require repair include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, and holes left by the rods and bolts; fins and other projections on the surface; and stains and other discolorations that cannot be removed by cleaning.
2. Repair concealed formed concrete surfaces that may contain defects that adversely affect the durability of the concrete. Surface defects that require repair include cracks in excess of 0.01-inch wide, cracks of any width and other surface deficiencies which penetrate to the reinforcement or completely through non-reinforced sections, honeycomb, rock pockets, holes left by tie rods and bolts, and spalls except minor breakage at corner.
3. Repair structural cracks and cracks in water-holding structures.

B. Method of Repair of Formed Surfaces:

1. Repair and patch defective areas with cement mortar immediately after removal of forms and as directed by ENGINEER.
2. Cut out honeycomb, rock pockets, voids over 1/2" diameter, and holes left by tie rods and bolts, down to solid concrete but, in no case, to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Before placing the cement mortar, thoroughly clean, dampen with water, and brush-coat the area to be patched with the specified bonding agent.
 - a. For exposed-to-view surfaces, blend white portland cement and standard portland cement so that, when dry, the patching mortar color will match the color of the surrounding concrete. CONTRACTOR shall impart texture to repaired surfaces to match texture of existing adjacent surfaces. Provide test areas at inconspicuous locations to verify mixture, texture and color match before proceeding with the patching. Compact mortar in place and strike off slightly higher than the surrounding surface.

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3. Cracks which require repair shall be pressure grouted, epoxy injected, using one of the following in accordance with Section 03740. Apply in accordance with the manufacturer's directions and recommendations.
 - a. Sikadur 35, Hi-Mod L.V. and Sikadur 31, Hi-Mod Gel, as manufactured by Sika Corporation Company.
 - b. Or approved equal.
 4. Fill holes extending through concrete by means of a plunger- type gun or other suitable device from the least exposed face, using a flush stop held at the exposed face to ensure completely filling.
 5. Sandblast exposed-to-view surfaces that require removal of stains, grout accumulations, sealing compounds, and other substances marring the surfaces. Use sand finer than No. 30 and air pressure from 15 to 25 psi.
- C. Repair of Unformed Surfaces:
1. Test unformed surfaces, such as monolithic slabs, for smoothness and to verify surface plane to the tolerances specified for each surface and finish. Correct low and high areas as herein specified.
 2. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having the required slope. Correct high and low areas as herein specified.
 3. Repair finish of unformed surfaces that contain defects which adversely affect the durability of the concrete. Surface defects, as such, include crazing, cracks in excess of 0.01-inch wide or which penetrate to the reinforcement or completely through non-reinforced sections regardless of width, spalling, popouts, honeycomb, rock pockets, and other objectionable conditions.
 4. Repair structural cracks and cracks in water-holding structures.
- D. Methods of Repair of Unformed Surfaces:
1. Correct high areas in unformed surfaces by grinding, after the concrete has cured sufficiently so that repairs can be made without damage to adjacent areas.
 2. Correct low areas in unformed surfaces during, or immediately after completion of surface finishing operations by cutting out the low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Use one of the following. Apply in accordance with the manufacturer's directions and recommendations.
 - a. Euco Poly-Patch, as manufactured by The Euclid Chemical Company.
 - b. Sikatop 122, as manufactured by Sika Corporation.
 - c. Or approved equal.
 3. Repair defective areas, except random cracks and single holes not exceeding 2" diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts, and expose reinforcing steel with at least 3/4" clearance all around. Dampen all concrete surfaces in contact with patching concrete and brush with the specified bonding agent. Place patching concrete before grout takes its initial set. Mix patching concrete of the same materials and proportions to provide concrete of the same type or class as the original adjacent concrete. Place, compact and finish as required to blend with adjacent finished concrete. Cure in the same manner as adjacent concrete.
 4. Repair isolated random cracks, as approved by ENGINEER, and single holes not over 2" diameter, by the dry-pack method. Groove the top of cracks, and cut out holes to sound concrete and clean of dust, dirt and loose particles. Dampen all cleaned concrete surfaces and brush with the specified bonding agent. Place dry-pack before the cement grout takes its initial set. Mix dry-pack, consisting of 1 part portland cement to 2 parts fine aggregate passing a No. 16 mesh sieve, using only enough

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water as required for handling and placing. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched areas continuously moist for not less than 72 hours.

5. Cracks which extend through the full member section, or any cracks determined by ENGINEER to require pressure grouting repair, shall be pressure grouted, epoxy injected, using one of the following in accordance with Section 03740. Apply in accordance with the manufacturer's directions and recommendations.
 - a. Sikadur 35, Hi-Mod L.V. and Sikadur 31, Hi-Mod Gel, as manufactured by Sika Corporation.
 - b. Or approved equal.
 6. Assure that surface is acceptable for flooring material to be installed in accordance with manufacturer's recommendations.
- E. Other Methods of Repair:
1. Repair methods not specified above may be used if approved by ENGINEER.

+ + END OF SECTION + +

SECTION 03314

PRESTRESSED CONCRETE TANK

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. This section covers the complete furnishing and installation of seven-wire strand and bars for circumferential and vertical prestressing, respectively, of concrete walls and the complete shotcreting operations. This section also covers the qualifications for the Contractor, the Tank Contractor, the Specialty Tank Prestressor and the Shotcreter. This section also covers general requirements for the tank and construction materials used in the tank. In the event of a discrepancy between this section of the Specifications and any other section of the Specifications, this section shall govern. The words "stressing machine" may refer to either circumferential wrapping machinery or vertical threadbar stressing equipment.
2. The Contractor shall furnish and erect a prestressed concrete tank of the capacity shown on the Drawings, consisting of a concrete roof, concrete floor and a poured in place concrete core wall, post tensioned vertically with steel rods and circumferentially with wrapped strand and protected with several coats of shotcrete and paint.
3. The tank shall conform to the dimensions and be equipped with the appurtenances shown on the Drawings and as specified herein.

1.2 REFERENCES

A. American Concrete Institute (ACI)

1. ACI 318, Building Code Requirements for Reinforced Concrete.
2. ACI 350, Environmental Engineering Concrete Structures.

B. American Water Works Association (AWWA)

1. D110-13, Wire- and Strand-Wound Circular, Prestressed Concrete Water Tanks

1.3 SCOPE OF WORK

A. Work by CONTRACTOR

1. Due to the nature of the project, it is the intent of these Specifications to obtain a first class product with emphasis on overall safety, quality and quality control, both during and after the construction process. Only Contractors experienced in the construction of strand wrapped prestressed concrete tanks are qualified to bid on and construct this tank project. Contractors shall have successfully completed at least five (5) circumferentially strand wrapped AWWA D110 Type 1 prestressed concrete tanks of at least 1.0 MG in capacity in the last ten (10) years. At least 2 of the above tanks shall have been in successful service for a minimum of five years. If the tank construction is subcontracted, the Tank Subcontractor, or one of its divisions, shall be required to meet the above-specified experience qualifications.

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2. In order to meet the experience requirements, the five (5) completed AWWA D110 Type 1 tanks shall be similar (i.e. freed wall base, poured-in-place core wall, externally machine strand wrapped, etc.) in design to the specified tank. Experience with tanks having fixed wall bases, mild-steel reinforced tank core walls, shotcrete tank core walls, precast tank core walls or tank core walls incorporating external solid wire wrapping systems or internal stressing systems shall not be considered in meeting the required experience requirements. All tanks listed for CONTRACTOR's experience requirements must have been built in CONTRACTOR's own name, or one of its divisions. Experience of personnel associated with CONTRACTOR or hired by the CONTRACTOR will not be considered unless CONTRACTOR can demonstrate that the work was contracted and performed directly by the listed Tank Contractor, or one of its divisions, in its business name.
3. The proposed Tank construction superintendent shall be currently employed by the qualified Tank Contractor, or one of its divisions, and shall have been the tank construction superintendent on no less than two (2) strand wrapped prestressed concrete tanks during the last five years. The qualified tank superintendent shall have been in the direct employment of the qualified Tank Contractor, or one of its divisions, for both of the tanks listed and will be required to be on the project site in responsible charge, full-time, during all tank concrete construction activities.
4. The OWNER is desirous of obtaining a prestressed concrete tank which will not develop structural and aesthetic problems. Therefore, as evidenced by these Specifications and Drawings, a strong emphasis on performance has been made to assure that desired details and proven construction methods be utilized to provide the highest quality structure available. For example, the stringent forming and pouring methods, the close tolerance continuously recorded circumferential prestressing and the automated shotcrete specified are only three of many ways that will help prevent structurally deficient problems from occurring during the service life of the tank. It is imperative that the specified features of these Documents be strictly adhered to and only bids from Contractors that have a successful performance record in prestressed concrete tank construction be considered.

B. Work by Specialty Tank Prestressor

1. No stressing system falling under any of the following requirements will be considered unless it has been successfully used on tanks of at least the same diameter, height and capacity. The Contractor shall submit with his bid the name and location of the Owner and the completion dates of ten (10) tanks on which the proposed qualifying "stressing machine" and automated shotcrete equipment has been used within the past five (5) years. All tanks listed for the Specialty Tank Prestressor's experience requirements must have been prestressed in the Specialty Tank Prestressor's own name, or one of its divisions. Experience of personnel associated with the Specialty Tank Prestressor or hired by the Specialty Tank Prestressor will not be considered unless the Specialty Tank Prestressor can demonstrate that the work was contracted and performed directly by the listed Tank Specialty Tank Prestressor, or one of its divisions in its business name. At the time of bid the qualified Tank Prestressor shall have a minimum of two operable strand wrapping and automated shotcrete machines meeting these requirements. Machines under construction shall not be considered in meeting the requirement of having two operable strand wrapping and automated shotcrete machines.

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2. Descriptive literature shall also be submitted with the bid showing the proposed machinery with the recorders and a typical copy of an actual recording of the applied forces taken from one of the jobs on which such machinery has been used. Any stressing system that will not provide the substantial equivalent of the above requirements will be rejected.
3. A bid will not be considered responsive unless such data has been submitted with the bid. This applies to the strand wrapping, threadbar stressing and automated shotcrete equipment.
4. Experience gained by the Specialty Tank Prestressor in machine single wire wrapping, internal tendon systems or external tendon systems shall not be considered in meeting the required experience requirements.
5. If subcontracted, the prestressing firm or individual(s) will be responsible to CONTRACTOR for the following phases of work:
 - a. Furnish, stress and pressure grout the vertical prestressing threadbars with epoxy.
 - b. Abrasive blast the exterior concrete core wall.
 - c. Furnish and install the horizontal prestressing strand.
 - d. Apply the shotcrete covercoat application over the strand.

1.4 SUBMITTALS

- A. Experience: The following information shall be required to be submitted:
 1. The name(s) of the proposed qualified Superintendent who will be in direct charge of the tank construction for the full duration of the Contract.
 2. A list of at least two reservoir jobs successfully completed by each of the Superintendents listed by the Tank Contractor, or one of its divisions, which shall include a tank description, the name and location of the Owner and the Consultant, and the approximate completion date of each tank while directly employed by the Tank Contractor, or one of its divisions.
 3. The name and address of the Tank Contractor, if different than the Contractor, and a list of at least five circumferentially strand wrapped AWWA D110 Type 1 prestressed concrete tanks of at least 1.0 MG capacity, similar in design to the tank specified herein, successfully completed by the Tank Contractor, or one of its divisions during the last ten years in its own name.
 4. The name and address of the Specialty Tank Prestressor, if different than the Tank Contractor or the Contractor, and the name and location of the Owner and the completion dates and location of ten structures on which the proposed qualifying strand wrapping prestressing system, meeting the substance of these Specifications requirements, has been used during the last 5 years.
 5. A list of at least two reservoir jobs successfully completed by the Superintendent(s) listed by the Specialty Tank Prestressor, or one of its divisions, which shall include a tank description, the name and location of the Owner and the Consultant, and the approximate completion date of each tank while directly employed by the Specialty Tank Prestressor, or one of its divisions. The listed Specialty Tank Prestressing Superintendent and/or Operator shall be a certified shotcrete nozzleman in accordance with ACI 506.
 6. Descriptive literature of the strand wrapping, the vertical prestressing and the automated shotcrete machinery meeting all these Specification requirements. Include in such data photographs or prints of the means of recording of both the circumferential and vertical prestressing applications and copies of actual photographs, print-outs or other records of applied wrapping forces (as well as force-elongation diagrams if available) taken from jobs in which the machinery

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has been used. Submit procedures for patching through floor entry tubes and the center pin bolts for the prestressing and shotcrete operations.

7. A written statement from the Specialty Tank Prestressor indicating that the Specialty Tank Prestressor, or one of its divisions has a minimum of two operable strand wrapping and automated shotcrete machines meeting these specifications.

B. Shop Drawings:

1. Contractor shall submit shop drawings of the circumferential prestressing wrapping schedule and the intermediate lock off elevations for the Engineer's approval before the wall pour is made.

C. Product Data:

1. Mill test certificates showing the dimensional and physical characteristics of each size, heat or reel of the prestressing steel he has furnished.
2. Prior to the preparation of shop drawings and installation of vertical threadbars, furnish evidence that the proposed threadbar anchorage system meets the requirements of these specifications. ENGINEER may order additional tests to be taken. Should such additional tests not meet the specifications, such expenses shall be paid for by CONTRACTOR; otherwise such expenses shall be borne by OWNER.
3. Furnish the shotcrete mix design meeting or exceeding the requirements of this specification.
4. Furnish product data for vertical threadbar ducts and vertical threadbar epoxy grout.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Prestressing steel shall be adequately packaged against intrusion of chemical contaminants (from the atmosphere or otherwise) for the protection of the steel against physical damage and corrosion during (and subsequently as the result of) shipping and storage.
- B. Prestressing steel that has sustained physical damage through rust or otherwise will be rejected.
- C. All materials and prestressing material delivered to the job site shall be stored off the ground on planks, supported by 4-inch x 4-inch timber, which must be covered with polyethylene or sizalkraft paper to prevent any moisture from coming up from the bottom.
- D. Reels of strand, prestressing threadbars, anchorages, etc., shall be stacked neatly and as compact as possible.
- E. All materials for threadbars and all fabricated tendons shall be covered with tarpaulins in such a manner that water, rain, moisture and dust are kept away.

PART 2 - PRODUCTS

2.1 PRODUCTS

- A. Seven-Wire Strand:

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1. Hot dip galvanized seven-wire strand used for prestressing shall meet the following minimum requirements:

Item	Specification
a. Nominal strand diameter	3/8"
b. Nominal area after galv	0.089 in ²
c. Nominal weight/1000 LF	303 lbs.
d. Pitch	12-16 (strand diam.)
e. Tensile strength	21,400 lbs. (min.)
f. Yield strength @ 1% extension	16,000 lbs. (min.)
g. Elongation in 24 inch at fracture	4.5% (min.)
h. Weight of zinc coating	0.85 oz./ft. ² (min.)

2. Hot dip galvanized seven-wire strand shall be manufactured in accordance with ASTM A416 prior to galvanizing. Each wire of the strand shall be individually hot dip galvanized before being stranded.
3. Single wire prestressing material shall not be utilized in lieu of seven-wire strand prestressing material.

B. High-Strength Threadbars:

1. Deformations of the threadbars shall form a screw thread suitable for mechanically coupling lengths of thread bar and for positive attachment of anchor assemblies.
2. Deformations shall conform to ASTM A722, Type II requirements and shall be uniform such that any length of bar may be cut at any point and the internal threads of a coupling designated for that size of bar can be freely screwed on the bar. The bars and their deformations shall be hot rolled.
3. Tensile and Physical Properties shall meet the following requirements with bars being manufactured in accordance with ASTM A722, Type II:

Item	Unit	Specifications
a. Nominal diameter	inches	1.25
b. Min. tensile force	kips (min.)	187
c. Yield force at 0.2% offset	kips (min.)	150
d. Elongation in 20 bar diameters	% (min.)	4
e. Nominal cross sectional area	sq. inches	1.245
f. Nominal bar weight	lbs/ft.	4.39
g. Min. ultimate strength	ksi	150

4. Note: To provide reduced relaxation, more uniform elastic modulus and reduced residual stress in the critical thread area, only threadbars that are stress relieved after the threads are formed will be accepted. All threadbars shall be proof stressed after stress relieving and threading. Threadbars with cold rolled threads or threadbars with quenched or tempered steels will not be permitted. Threadbars shall have a maximum carbon content of 0.55 percent. Only manufacturers with not less than 5 years of experience, under their current name, in the manufacturing of post-tensioning material meeting all the requirements of this specification will be accepted.

C. Anchorages for Vertical Post-Tensioned Threadbars:

1. All post tensioned prestressing shall be secured at the ends by means of approved permanent anchoring devices, which shall hold the prestressing steel at a force not less than 95% of the guaranteed minimum tensile strength of the prestressing steel.

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2. The load from the vertical prestressing anchoring device shall be distributed to the concrete through steel bearing plates of dimensions and details shown on the Drawings.
3. All vertical prestressing anchor plate dimensions, all dimensions relating to the conical hole in the top and bottom of the bearing plate (35° cone angle with the vertical), all steel tubing attached to the top bearing plate, and all threadbar spacing shall strictly conform to the details shown on the Drawings.
4. Fully threaded anchor connections shall be used at both ends of the vertical prestressing bar, which shall incorporate a spherical shaped bearing surface to match the conical surface in the bearing plate.
5. The contact point of the spherical shaped vertical prestressing bearing surface to conical hole shall be approximately ¼" to ½" below the bearing plate surface.
6. Wedge anchors shall not be used for permanent anchor hardware.

D. Anchor Pockets for Vertical Threadbars

1. Anchor pockets for vertical prestressing threadbars shall consist of steel cans, hot dip galvanized after cutting (unless shown otherwise on the Drawings) and subsequently welded to the top bearing plate.
2. Anchor pockets shall be adequately sealed from moisture and concrete intrusion by wooden lids and 2 inch wide plastic adhesive tape.
3. Anchor pockets for vertical prestressing threadbars must have adequate provisions for flushing of ducts with water during concrete placement.

E. Ducts for Vertical Threadbars:

1. Duct enclosures for vertical prestressing steel shall be standard 1.25" diameter PVC pipe class 160, unless otherwise specified on the Drawings.
2. All ducts shall be provided with expandable valves to facilitate the injection of epoxy after prestressing.
3. All connection details shall be as shown on the Drawings.

F. Epoxy Grout for Vertical Threadbars:

1. The vertical threadbar system shall offer complete 2 part epoxy protection of the prestressing steel inside ducting and anchors.
2. Portland Cement grout will not be accepted.

G. Shotcrete:

1. Fine aggregates:
 - a. Fine aggregates shall meet the requirements set out in Section 03300 of these Specifications.
 - b. A well-graded coarse sand shall be used for all shotcrete applications.
 - c. Coarse sand shall generally consist of the following gradation:

Sieve Size	% Passing by Weight
3/8 inch	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

The fineness modulus shall fall between 2.70 and 3.00.

2. Rebound:

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- a. Rebound is defined as aggregate mixed with some cements, which ricochets off the surface during the application of shotcrete because of collision with the harder surface, reinforcement, or with the aggregate particles themselves, which amount varies with the position of the work, air pressure, cement content, maximum size and grading of aggregate, amount of reinforcing and thickness of layer.
- b. Rebound materials may not be reused in any form for shotcrete.
- 3. Water shall meet the requirements set out in Section 03300 of these Specifications.
- 4. Fibrous Shotcrete Reinforcement
 - a. All shotcrete, unless otherwise specified herein, shall be fibrous reinforced. Such material shall consist of 100 percent virgin polypropylene fibers specifically manufactured for use as concrete/shotcrete secondary reinforcement. The required volume of fibers to be added per cubic yard of shotcrete shall be as specified below under Shotcrete Proportioning.
 - b. Polypropylene fibers will help to provide greater control of cracking from drying shrinkage and thermal expansion/contraction, a reduction of permeability, an increased impact capacity, an improved shatter/abrasion resistance and added toughness of the shotcrete.
 - c. The fibers shall be manufactured in accordance with applicable building codes and ASTM C1116 Type III.
 - d. Acceptable polypropylene fibers shall have the following physical characteristics:
 - 1) Specific gravity = 0.91
 - 2) Fiber length = graded per manufacturer
 - e. Manufacturer:
 - 1) SI Concrete Systems, Fibermesh 150.
 - 2) Or approved equal.
- 5. Shotcrete Proportioning:
 - a. Each one cubic yard of mortar in the ready mix truck or mixer shall consist of 0.1% (1.5 lbs. per cubic yards) polypropylene fibers and a mix ratio of 3 lbs. of moist sand to 1 lb. of Portland cement. W.R. Grace Recover hydration stabilizer or approved equal may be added at the option of Shotcreter during warm weather conditions.
 - b. Whenever night temperatures are expected to drop below 35°F, ASTM C150, Type III Portland cement shall be used in lieu of Type II Portland cement. Should Type III Portland cement not be available, the mix design shall consist of a moist sand- Portland cement mix ratio, by weight, no greater than 2.59.
 - c. If the batching procedure requires that smaller volumes of cement and sand be used, the required cement to sand ratio shall still be strictly adhered to.
 - d. Additives other than a hydration stabilizer shall not be used unless specifically approved by ENGINEER, after careful consideration of its corrosive influence on prestressing steels.
 - e. If used by the shotcreter, the total volumetric air content of the shotcrete before placement shall not exceed 7 percent (plus or minus one percent) as determined by ASTM C173 or ASTM C231.
 - f. Unless otherwise shown on the Drawings, shotcrete cylinder strengths at 28 days shall be no less than 4,500 psi. Higher shotcrete cylinder strengths shall not permit a reduction in the above specified cement contents. The cement content in the above mix designs may be increased should the specified 28 day strength requirement not be met. Shotcrete shall have a maximum water-cementitious materials ratio of 0.40.

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- g. The polypropylene fibers and admixtures shall be added to the shotcrete at the time it is batched and in the amounts as required herein. Such additives shall be mixed in strict conformance to the manufacturer's instructions and recommendations for uniform and complete distribution. Each certificate of delivery supplied by the shotcrete supplier shall indicate the additive trade name, manufacturer's name and amount per cubic yard added to each batch of shotcrete.
- h. Class F Fly Ash, in accordance with ASTM C618, may make up no more than 20% of the cementitious material in the shotcrete mix.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Circumferential Prestressing Equipment:

1. The circumferential stressing system shall produce a continuously, electronically (or substantial equivalent) monitored permanent stress or force recording along the full length of the strand as it is being applied and the stress variation in any strand at any point around the circumference shall not be greater than ± 1.5 percent of the ultimate strength of the steel. In addition to this recording, any system which deflects the tensioned prestressing material between the tensioning device and the wall after it has left the tensioning device, shall provide a similar continuously monitored stress or force record along its full length as it is being applied to the wall. These recordings shall show that either before or after deflection, the stress variation in the prestressing material at any point around the circumference shall not be greater than ± 1.5 percent of the ultimate strength of the steel.
2. Due to prior instances of force measurement inaccuracies and the inherent problems associated with handheld stressometers, no manual recorded force readings will be accepted. This requirement shall be strictly adhered to.
3. Any wrapping that does not and/or cannot meet the stress tolerances specified, will not be accepted and will be removed at Specialty Tank Prestressor's expense. Specialty Tank Prestressor shall be responsible for all costs associated with meeting the specified tolerances.
4. Since wrapping systems which utilize single solid prestressing wire will not provide the desired bond between the prestressing wire and the shotcrete and since single solid prestressing wire will not provide an adequate safety factor against failure, only machine wrapping systems which utilize seven-wire prestressing strand wrapping will be allowed.
5. Since intermittent force applications can result in an unequal stress distribution around the wall (due to friction losses), the prestressing system shall be capable of applying a continuous wrapped force at any point around the circumference within the specified tolerances. Circumferential stressing systems based on jack operated cable or rod type tendons (such as those placed inside of ducts incorporated in the core wall or placed manually around the exterior of the core wall) will not be allowed.
6. Tank Prestressor shall submit procedures for patching through floor entry tubes and the center pin bolts for the prestressing and shotcrete operations. These procedures shall be submitted with the shop drawings for the respective items.

B. Circumferential Prestressing Application:

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1. Wrapped strand shall be anchored to the wall at least once for every coil or reel.
 2. Permanently anchoring one strand to a previously wrapped strand will not be permitted.
 3. Wrapped strand ends shall be joined by suitable splicing methods that shall develop 90% of the full strength of the strand.
 4. Use of different alloys in the splicing material will not be permitted.
 5. The minimum clear spacing between any two wrapped strands in the vertical direction shall be 1.5 strand diameters or 3/8 inch, whichever is larger.
 6. The maximum center to center spacing between any two wrapped strands in the vertical direction shall be 6 inches, except at zones designated to be free of prestressing.
 7. The wrapped strands shall be spaced at approximately equal spacing over given bands within the wrapping schedule shown in the Contract Drawings.
 8. All wrapped strands not meeting the spacing requirements shall be spread by approved methods or shall otherwise be removed.
- C. Vertical Prestressing Equipment:
1. The Specialty Tank Prestressor shall provide a continuously, electronically (or substantial equivalent), monitored permanent force-elongation record from zero to full force at the final lockoff for all of the vertical prestressing work.
 2. The ordinate of the permanent recording shall show the elongation in inches and the abscissa shall show the force in pounds or kips.
 3. Manually recorded force and elongation readings will not be accepted.
 4. The vertical threadbar stressing machinery shall have automatic electronic tensioning cut off devices or equivalent means to ensure that the specified force and elongation is not exceeded at any time during any threadbar stressing operation.
 5. The force readings at the stressed bar ends, immediately after lock off, for any stressing operation, on any tendon, shall not fluctuate more than $\pm 1.5\%$ (of the minimum ultimate strength of the steel) from the desired average force setting.
 6. The maximum applied force, immediately after lock off for the final stressing operation on any threadbar, shall be no greater than 75% of the minimum ultimate strength of the steel.
- D. Vertical Prestressing Application:
1. All permanent anchor hardware shall have a ball shaped threaded nut that can be screwed down on to a matching cone-shaped bearing surface in the bearing plate after the desired tension on the anchor hardware and/or prestressing steel has been applied.
 2. The number and spacing of threadbars, if shown on the Drawings, shall not be altered under any condition.
 3. High strength threadbars shall be used for vertical prestressing which meet the requirements of these Specifications.
 4. All ducts shall be clean and free of water and deleterious materials that would impair bonding of the grout or interfere with grouting procedures.
 5. Grout injection pipes shall be fitted with positive mechanical shutoff valves, which shall not be removed within the first 24 hours.
 6. Grouting of threadbars shall be started at the lowest grout connection.
 7. Each vertical threadbar duct shall be pumped until the entire nut at the top anchor has been covered. Pea gravel and/or clean sand may be placed (at Specialty Prestressor's option) in the threadbar can as a filler prior to or after epoxy pumping.

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8. In cold weather, and especially during frosts, special precautions must be taken to avoid the freezing of grout. In the event that the grouting procedure cannot be postponed, the wall temperature must be kept above the freezing point with hot blankets or by other approved means.
9. Upon completion of the vertical stressing and grouting operation, all anchor pocket areas above the anchor nuts shall be dry packed with a 1 cement to 2 sand mortar mix immediately after the epoxy coating on the inside can surface has become tacky, or alternately, the metal can may filled with concrete aggregates and epoxy.
10. The inside surfaces of any metal cans to be dry packed shall be coated with a 2 part epoxy bonding agent.
11. Dry packing shall not proceed until the epoxy coat has become tacky.
12. The dry pack surface shall be finished flush with the adjoining concrete surface.
13. Vertical threadbar components shall be assembled off the ground and as detailed on the Drawings.
14. Particular attention shall be given to sufficient taping of damaged joint connections and holes in PVC tubing.
15. Vertical prestressing threadbars shall be accurately placed at the locations shown on the Drawings, or as approved by ENGINEER, and shall be securely fastened in place to reinforcing steel and form ties to prevent movement during placement of concrete.
16. All vertical threadbars shall be fully assembled before they are installed in the forms.
17. All vertical threadbars shall be flushed with water from the top immediately upon completion of the concrete vibrating operation.
18. Flushing of ducts shall proceed after the pouring and vibrating of concrete around the threadbars has been completed.
19. Water shall be introduced through a taped off hole in the wooden lids on the anchor pockets and be permitted to drain through the bottom grout tube. Flushing shall not be accomplished by introducing water through the bottom connection.
20. Upon completion of the water flushing operation of vertical threadbars, the ducts shall be given a short burst of compressed air from the top only to remove any accumulations of water at the bottom of the ducts.
21. Cleaning of threadbars with air only, or removal of water with air from the bottom connection, will not be permitted.
22. Placing of vertical threadbars shall be done to proper locations, elevations and alignments, with a maximum tolerance of plus or minus 1/4 inch.
23. All vertical threadbars shall be properly tied at the anchor plates and shall be tied with #4 bars at 2 feet intervals between the anchor plates, unless shown otherwise on the Drawings.
24. Anchor plates must be installed at right angles to the threadbar alignment near the anchor. Anchor plates must be installed with long sides, if applicable, aligned parallel with the wall forms and secured to prevent rotation while concrete is placed. The maximum permissible misalignment of anchor plate to threadbar alignment is plus or minus 2.5 degrees.
25. Unless indicated otherwise on the Drawings, the minimum concrete cover around metal anchor pockets and bearing plates shall be 1.5 inches.
26. The clearance between bottom anchor plate and waterstop in tank walls shall be no less than 2 inches nor more than 4 inches.

E. Circumferential and Vertical Prestressing Operations:

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1. The maximum initial electronically (or substantial equivalent) recorded steel stress shall not exceed 75 percent of the guaranteed minimum ultimate strength (M.U.S.) of the steel at any time during and after stressing.
2. Each vertical threadbar in the wall shall be stressed to the values shown on the Drawings.
3. An automatic, continuously electronically (or substantial equivalent) monitored permanent recording of the applied force, at any point on the strand, at any point on and around the tank wall, must be made during the entire circumferential prestressing application. All such recordings must be based on a continuous sensing of the applied force on the prestressing material between the tensioning drum and the wall when, and as, the strand is being wrapped and laid on the wall.
4. The force setting on wrapping and threadbar stressing machinery shall be such that the applied forces fall within the specified minimum or maximum stress or force limitations; the force setting shall be corrected immediately when the applied force falls outside the required force tolerance limitations.
5. In the event that the stressing machinery is incapable of holding the applied forces within the specified stress or force limitations, ENGINEER will order, at Specialty Tank Prestressor's expense, the removal and replacement of such machinery in favor of a different stressing process capable of maintaining such tolerance requirements.
6. The loss in stress in post tensioned prestressing steel due to creep and shrinkage of concrete creep of steel and sequence stressing shall be assumed as 25,000 psi.
7. The final stress is the average initial stress reduced by the stress loss of 25,000 psi.
8. The final force is the steel section multiplied by the final stress.
9. The final force shall be no less than the required working force shown on the Drawings.
10. The continuous, electronically produced force application chart during the wrapping application becomes the property of OWNER.
11. Manual, individual or intermittent force readings taken on wrapped strand in full bodily contact with the wall will not be accepted. Force readings based on anything other than instantaneous force readings, as the strand is being tensioned, and wrapped around the tank, will not be accepted.
12. An automatic, continuously electronically (or substantial equivalent) monitored and simultaneously recorded force elongation reading must be made for each vertical stressing application.
13. The force elongation reading must represent the true relationship between the elongation at any given point of the vertical stressing operation and the applied force on the prestressing steel at that same point.
14. The force elongation relationship must be constantly maintained from the beginning, starting with the removal of the slack to the point of lock off and complete release of the force on the vertical prestressing steel after retraction of the stressing piston or equivalent stressing device.
15. All electronically produced force elongation readings during the vertical threadbar stressing operations become the property of the Owner.
16. The ultimate initial prestressing force for vertical threadbars shall not be applied until the concrete compressive strength in the wall shall have reached the specified 28 day strength.
17. Wrapping may start when the concrete has reached a minimum strength of 3,000 psi; however, under no circumstance shall the compressive stress, under any condition, exceed 55%.

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18. In the event that gaps between the core wall and the wrapped prestressing material develop that exceed 3/8 inch, wrapping shall be discontinued and the wall shall be built up with shotcrete to provide the proper curvature. Alternately, if approved by ENGINEER, the gaps may be dry packed after wrapping is completed and before shotcreting is started.
19. Wrapping over intermediate shotcrete coats or built up shotcrete areas may commence 12 hours after the shotcrete has been applied or when the shotcrete has reached a minimum strength of 250 psi, whichever is later.
20. Because prestressing material exposed to excessive temperatures greatly increases the possibility of irrevocable damage, such as steel embrittlement, stress corrosion, or wire splitting, the temperature of the prestressed material during application shall not be allowed to increase by more than fifty degrees at any time during such application due to the stressing technique. No system which relies on pulling the prestressing material through a die to create a force, will be allowed.
21. All vertical prestressing threadbar ducting shall be pressure grouted with an approved 2 part water insensitive epoxy and approved epoxy grouting equipment. Circumferential prestressing anchors shall be dry packed with cement grout or epoxy, at the Contractor's option.
22. Grout injection pipes shall be fitted with positive mechanical shutoff valves, which shall not be removed within the first 24 hours.
23. Grouting of threadbars shall be started at the lowest grout connection.

F. Safety Precautions:

1. Every precaution shall be taken to keep personnel and visitors outside the danger area of breaking strands or bars.
2. At no time shall anyone stand in the line of stressed vertical threadbars or stressed strand.
3. No work shall be performed by anyone, other than the prestressing crew, within 100 feet from the wrapping operation or the application of the vertical threadbar stressing operation.
4. Where access to the site by unauthorized persons is outside the Contractor's control, while prestressing work is in progress, Contractor shall erect protective fencing to prevent breaking strand from endangering such persons.
5. There shall be no welding to anchor plates after the threadbars have been assembled, neither shall prestressing steel be used as a "ground" for welding operations.

G. Abrasive Blasting:

1. Exterior surfaces of the concrete core wall, which will receive strand wrapping shall be abrasive blasted, regardless of the forming method used, by a mechanical etching or shotblast system combined with a vacuum recovery system, or a water-blasting system. Systems that have not been used successfully in the past to prepare circular tank wall surfaces for shotcreting and strand wrapping or systems which rely on sandblasting or steel shot without a vacuum system will not be allowed. The surface shall be abrasive blasted sufficiently to remove all laitance, form oil or other type of coatings. The surface shall be cut to a minimum CSP5 profile, as established by the International Concrete Repair Institute (ICRI), over a minimum of 90% of the surface being prepared as measured over any one foot square area. The Specialty Tank Prestressor who is performing the abrasive blasting shall make available to the inspector ICRI sample coupons to assist in evaluating the abrasive cut.

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H. Shotcrete Equipment:

1. Mixing shall be done in conformance with the requirements of Section 03300, Cast in Place Concrete.
2. Delivery Equipment:
 - a. The delivery equipment shall be of an approved design and size which has given satisfactory results in similar previous work.
 - b. The equipment shall be capable of discharging mixed materials into the hose under close control and shall be able to deliver a continuous smooth stream of uniformly mixed material at the proper velocity to the discharge nozzle, free from slugs of any kind.
 - c. The equipment must allow for the concrete, water and air to be distributed to the automated shotcrete tower through a swivel pin located at the center of the tank.
 - d. The nozzle shall be of a design and size that will ensure a smooth and uninterrupted flow of materials.
 - e. Delivery equipment shall be thoroughly cleaned at the end of each shift.
 - f. Equipment parts shall be regularly inspected and replaced as required.
3. Air Supply capacity of the compressor shall be large enough that the minimum amount of air to be available at the nozzle shall be no less than 400 CFM, irrespective of whether or not air from the same air supply is used for other purposes.

I. Shotcrete Application Process:

1. Shotcrete shall be applied under the wet mix process only.
2. Nozzles shall be mounted on power driven machinery enabling the nozzle to travel parallel to the surface to be sprayed at a uniform linear or bidirectional speed.
3. The nozzle shall be kept at a uniform constant distance from the surface, always insuring a right angle spray of the material to the surface.
4. Hand operated nozzles and shotcreting operations dependent on the performance of the nozzleman will not be accepted except where additional shotcrete is needed to correct flat areas or for architectural surface treatments.
5. Grout materials shall be delivered to the jobsite in ready mix trucks from approved batching plants. However, job mixing will be accepted provided automatic weigh batch plants are used.
6. The sand, cement and water shall be premixed before being pumped through a 2" minimum hose by specially designed mortar pumps.
7. The high velocity impact shall be developed pneumatically by injecting compressed air at the nozzle.

J. Shotcrete Placing and Finishing:

1. Shotcrete shall be applied in a steady, uninterrupted flow.
2. Should the flow become intermittent for any cause, the machine operator shall direct the nozzle away from the work until it again becomes constant, or shut off the flow of materials.
3. Position of Pneumatic Nozzles: The nozzle shall be held at approximately right angles to the surface and shall be kept at the proper and the same distance from the surface dictated by good practice standards for the type of application, type of nozzle and air pressure employed.
4. Shotcreting More Than One Layer:
 - a. Sufficient time shall be allowed for each layer of shotcrete to set up so it may take the next layer without sagging.

- b. The shotcrete shall be started at the bottom of the wall until all wrapped strand has been covered. Subsequent shotcrete layers may be applied from the top down or from the bottom up at the discretion of the Shotcreter.
- c. While the nozzle travels around the wall, the nozzle shall be raised or lowered at a uniform rate in such a manner that an adequate overlapping of coatings and a uniform finish will develop.
- d. The nozzle shall be spiraled up or down around the tank to either the top or the bottom of the wall or to the termination of the intermediate strand layer.
- 5. Application of Shotcrete:
 - a. To ensure proper penetration around the strand and proper conveyance of the material through the hose, a 5" to 7" slump of the mortar at the pump is recommended.
 - b. The application of the shotcrete in the number and thickness of layers specified herein is mandatory for proper penetration of shotcrete behind prestressing material and to reduce shrinkage due to more uniform in depth drying of the shotcrete. The moisture absorption by earlier applied layers is relied upon to improve the bond and strength of the material and to reduce drying shrinkage of the applied shotcrete.
- 6. Shotcrete Covercoats Over Wrapped Strand:
 - a. Each layer of wrapped prestressing steel shall be covered with shotcrete until a minimum cover of 3/8" over the steel has been obtained.
 - b. The final covercoat, to make up for the full thickness of shotcrete over the final strand layer, shall be applied in at least 3 layers of equal thickness.
 - c. Each layer of shotcrete shall be completed for the full circumference of the tank and substantially the full height of that layer before the next layer of shotcrete may be applied.
- 7. Coating Thickness:
 - a. All shotcrete coatings shall be built up in layers of approximately 3/8 inch in thickness until the final required thickness has been obtained.
 - b. Unless otherwise shown on the Drawings, the minimum shotcrete cover over all wrapped steel shall be 1.5 inches.
- 8. Finish Coat:
 - a. After the minimum shotcrete cover specified over the wrapped prestressing strand has been completed by the automated shotcrete procedure, and only if such finish requirements are shown on the Drawings, the exterior surface shall be given an acceptable float finish true to line and curvature and to details shown on the Drawings.
 - b. If a float finish is required on the Drawings, plaster or hand applied shotcrete may be used to build up and level the surface and to obtain the desired surface finish and projections.
 - c. The finish coat mix (if a smooth float finish is required on the Drawings), shall consist of a minimum of one sack of cement for each 3 1/2 cubic feet of moist plaster sand.
 - d. If no finish requirements are shown on the Drawings, it is intended to have a natural original gun finish of the shotcrete covercoat.
- 9. Protection of Adjacent Buildings and Surface:
 - a. Shotcreter shall take every possible precaution to protect adjacent buildings, concrete surfaces, vehicles, equipment, etc., from being damaged by overshooting shotcrete and by materials carried away by the wind.
 - b. Overshot shotcrete and rebound materials deposited on the roof shall be removed before it adheres to the concrete surface.

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- c. CONTRACTOR shall pay for all damages caused by Shotcreter's operations under this contract.
- 10. Shotcrete tests shall be conducted in accordance with Section 03300, Cast in Place Concrete.
- K. Shotcrete Thickness Confirmation Testing
 - 1. Shotcrete thickness shall be confirmed at up to 8 different locations per prestressing layer. These locations shall be selected by OWNER or ENGINEER. The contractor shall remove the shotcrete down to the prestressing strand at the selected locations. Thickness shall be verified by placing a straight edge against the applied shotcrete and measuring the distance between the outside face of the prestressing strand and the face of the straight edge.
- L. Hand Placed Shotcrete for Repairs Only:
 - 1. To ensure a high quality shotcrete, the Shotcreter shall satisfy ENGINEER that the nozzleman has had sufficient and acceptable experience in the application of structural shotcrete.
 - 2. Experience gained on shotcrete pool and ditch construction will not be considered as experience for qualifying the nozzleman, unless approved by ENGINEER.
 - 3. The nozzleman shall be capable of applying thin coats of even and uniform thickness.
 - 4. The nozzleman shall be a certified shotcrete nozzleman in accordance with ACI 506.
- M. Restriction on Shotcrete Operation:
 - 1. Shotcrete shall not be applied under such strong wind conditions that a considerable amount of cement and moisture will be removed by the wind from the mortar spray between the nozzle and the surface on which the shotcrete is applied.
 - 2. Shotcrete may be applied in cold weather provided the surfaces are not frozen.
 - 3. The temperature during the day must be expected to rise to at least 40°F and the night temperature of the first night after the shotcrete application must not be expected to drop below 27°F.
 - 4. The use of Type III Portland cement is required (when readily available) in the event shotcrete is applied at temperatures below 40°F.
 - 5. The Shotcreter may apply shotcrete under the conditions specified herein solely at his own risk.
 - 6. Whenever rain or frost has damaged shotcrete which has not had a chance to set up, such shotcrete shall be removed and replaced.
 - 7. Shotcreter shall consult with ENGINEER to determine whether or not the shotcrete damaged by rain or frost will be accepted before applying any new layers of shotcrete.
- N. Shotcrete Water-Curing:
 - 1. Intermediate layers of shotcrete shall be kept damp by hand curing or other means no sooner than 12 hours after the shotcrete has been applied.
 - 2. This water-curing is not required should additional shotcrete be applied on the entire wall surface within the following 12 hours.
 - 3. An indiscriminate use of continuous water-cure for intermediate layers shall be avoided.
 - 4. Complete shotcrete surfaces, which do not receive any additional coatings, shall be water-cured for a period of at least seven (7) days by encapsulating the

shotcrete inside of plastic sheeting. Such plastic sheeting shall be lapped and sealed as necessary to properly cure the shotcrete. Membrane curing methods utilizing curing compounds or wax-based residuals will not be permitted.

5. Wall coatings, as specified in Section 09900, shall be applied no later than five (5) days after completion of the water-curing. If conditions make it impossible to apply coatings within the five (5) day period, shotcrete shall be water-cured for a period of ten (10) days instead of the seven (7) days specified herein.

O. Cleaning and Waterproofing:

1. After construction is completed, the interior of the tank shall be completely hosed out and cleaned of all dirt and loose material.
2. Floor, wall, footing, column and roof cracks, which may have developed from drying shrinkage, shall not be taped or chipped out and caulked. All cracks shall be pumped and sealed with a two-part water insensitive epoxy.

P. Disinfecting and Filling:

1. Water containing 200 ppm of chlorine shall be sprayed on all walls, columns and underside of roof areas.
2. The solution from the wash down shall be allowed to stand for no more than 24 hours prior to filling the tank.
3. The chlorine shall be monitored and adjusted while filling, so that when the reservoir is full the resulting chlorine solution is approximately 2 ppm.
4. The disinfection shall be accepted if samples taken for the final bacteriological test conform to AWWA Standard C652 and are found to be satisfactory.
5. The tank should only be filled during normal working hours, at the end of each day the reservoir and ring drain should be checked for any kind of visible leakage. If only damp spots and small puddles of water are noted, the filling can continue. If major leaks are noted, they should be thoroughly investigated prior to continuing to fill the tank.

Q. Testing and Repairing Leaks:

1. Testing:
 - a. After filling the tank, the water level shall be held at the overflow for 3-days, it will be assumed for the purpose of the test that the absorption of moisture by the concrete in the tank is complete. All valves and gates to the structure shall then be closed and the change in water surface measured over a 48-hour period. The vertical distance to the water surface shall be measured to within 1/16-inch from a fixed point on the structure above the water surface. Measurements shall be recorded at 24-hour intervals.
 - b. During the test period, all exposed portions of the structure shall be examined for dampness or leaks and all visible leaks or damp spots shall be marked; such leaks or damp spots shall be later patched or corrected in a manner acceptable to the ENGINEER prior to additional leakage testing.
 - c. The tank and the drain lines from the ring drain shall then be examined for evidence of leaks.
 - d. All leaks shall be repaired to the satisfaction of ENGINEER.
 - e. Any areas that, in the opinion of ENGINEER, are exposed to contamination during the repair work shall be re-chlorinated to ENGINEER's satisfaction.
 - f. Testing shall be completed before the tank is backfilled.
2. Leak Detection Methods:
 - a. Leaks in floor construction joints may be detected with the aid of a diver.

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- b. Mud, cement deposits or dye on the floor, when stirred up, would flow to the leak and may so indicate where the leaks are.
 - c. Honeycomb and cracks around waterstops may be detected through tapping with a hammer along the joint.
 - d. Any of these procedures may be insisted upon by ENGINEER when cement seeding has not stopped the leaks.
 - e. Leakage through joints, which may have resulted from bent over waterstops or honeycomb under or around waterstops may require the removal of concrete around the waterstops in suspected areas.
 - f. Chipped out concrete areas shall be properly dry packed with non-shrink grout, after coating the existing concrete surface with an approved epoxy bonding agent.
3. Acceptance:
- a. The acceptable drop in water level of covered water tanks shall not exceed 1/16-inch per 24 hours after the tank has been filled, and after accounting for evaporation. There shall be no visible running leaks or water puddles. Small damp spots may be accepted, at the discretion of ENGINEER, during the first few months of operation; however, if they have not healed, ENGINEER may order the immediate repair of such areas. Damp spots or any seepage present on the walls or other exposed areas where moisture can be picked up on a dry hand shall be considered excessive and repaired. Any cracks, voids, honeycomb or cold joints showing or causing running leaks of water, shall be epoxy injected by qualified operators until such cracks and voids have been completely sealed.
 - b. Wet areas on top of wall footings shall not be considered cause of a qualitative failure of the leakage test unless the water can be observed to be puddled or flowing.
 - c. If the leakage is excessive, and if damp spots and observed seepage is present on exposed surfaces, the tank shall be drained, all leaks and damp spots previously marked shall be patched, and the necessary repairs made, and the tank shall be retested. The CONTRACTOR'S method of repair shall be subject to the requirements of these specifications and submitted for review and approval by the ENGINEER.
 - 1) The tank shall then be refilled and again tested for leakage and this testing and repair process shall be repeated as many times as necessary until the leakage test passes. This process shall be continued until the drop in water surface in specified test period with the tank full is less than the quantity specified above and all damp spots and seepage disappears when the tank is full of water. All repairs of faulty workmanship and materials, and additional tests, shall be made by the CONTRACTOR in an acceptable manner, at no additional cost to the OWNER. Both the correction for excessive leakage and the removal of the damp or wet spots on exposed surfaces shall be required to pass the leakage test.
 - d. The purpose of this test is to determine the integrity of the finished concrete and to show that the exposed wall surfaces are visually acceptable.
 - e. The tank shall not be backfilled until and unless ENGINEER has accepted the leakage tests.
 - f. This section shall be applicable during the entire specified warranty period of the tank.

+ + END OF SECTION + +

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SECTION 03400

PRECAST CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section includes all plant-precast products, including, but not limited to, wet wells, catch basins, manholes, vaults, and wheel stops.

1.2 SYSTEM DESCRIPTION

- A. Precast products shall be designed for the indicated service, the loadings specified in the Contract Documents, and all transportation, handling, and erection loads, in accordance with requirements and recommendations of the references.
 - 1. Precast products not subjected to traffic loads shall be designed to meet and exceed the requirements of ACI 318-14.
 - 2. Precast products subjected to traffic loads shall be designed to meet and exceed the requirements of the current AASHTO LRFD Bridge Design Specifications.
 - 3. Liquid containing precast products shall be designed for the additional requirements of ACI 350-06.
- B. If precast products are proposed as substitutes for cast-in-place designed structures, such precast products shall meet the above requirements and any other requirements for which the cast-in-place structures were designed by the ENGINEER. Such products shall be designed by an engineer licensed to practice in the State where the project is performed.
- C. Items located in or adjacent to traffic areas shall be designed to resist AASHTO HL93 loading, unless otherwise indicated.
- D. Lifting inserts shall have a minimum safety factor of 4.

1.3 QUALIFICATIONS

- A. Manufacturer:
 - 1. Manufacturer shall have at least 5 years experience in the design and manufacture of precast concrete products substantially similar to those required for this project.
- B. Installer:
 - 1. Precast Items shall be installed by the Manufacturer or by an installer regularly engaged for at least 5 years in erection of precast products similar to those required on this project.

1.4 SUBMITTALS

- A. Submittal Data:
 - 1. Submit to the Engineer for review, shop drawings of the proposed details, and design calculations; all calculations and shop drawings shall be stamped and signed by a Civil or Structural Engineer registered in the State of California.
 - 2. Material specifications.

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3. All dead, live and other applicable loads used in the design.
 4. Applicable standards (from "References") met by the item(s).
 5. Setting plans locating and designating all items furnished by the manufacturer, with all major openings shown and located.
 6. Details to indicate quantities, location and type of reinforcing and prestressing steel.
 7. Sections and details showing connections, edge conditions, support conditions, and connections of the items.
 8. Description of all embeds, including stripping, lifting and erection inserts, with piece mark and location, including those cast into products or sent loose to the job site.
 9. Description and drawings of all frames and covers.
 10. Dimensions and special finishes.
- B. Mix Designs: Submit all precast mix designs for approval. Mix designs shall be prepared by an independent testing facility or qualified employee of the Precast Manufacturer.
- C. Design Modifications:
1. Submit design modifications necessary to meet performance requirements and field conditions.
 2. Variations in details or materials shall not adversely affect the appearance, durability or strength of products.
 3. Maintain general design concept without altering size of members, profiles and alignment unless otherwise approved by the Architect/Engineer.

1.5 QUALITY ASSURANCE

- A. In-Plant Quality Control
1. The Manufacturer shall have an established PCI quality control program in effect prior to bidding. If requested, a copy of this program shall be submitted to the ENGINEER.
 2. Testing of materials and inspection of production techniques shall be the responsibility of the Manufacturer's Quality Control Department.
 3. Keep quality control records available for two years after final acceptance.
 4. Keep certificates of compliance available for five (5) years after final acceptance.
- B. All other testing and inspection, if any, to be provided by OWNER.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Handle and transport products in a position consistent with their shape and design in order to avoid excessive stresses or damage.
- B. Lift or support products only at the points shown on the Shop Drawings.
- C. Installer shall be responsible for the repair of damage to items except that caused by others.
- D. After items are installed in their final positions, the CONTRACTOR shall be responsible for their protection. The CONTRACTOR shall be responsible for the repair of any damage to the items caused by someone other than the Manufacturer/Installer.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Portland Cement ASTM C150 Type I, II or III cement.
- B. Aggregates:
 - 1. Fine and coarse aggregate for mix shall conform to ASTM C33 or C330.
 - 2. Aggregates shall be clean, hard, strong, durable, inert, and free of staining and deleterious materials.
- C. Water Potable, free from deleterious material.
- D. Admixtures:
 - 1. Conforming to ASTM C260 and/or ASTM C494.
 - 2. Calcium chloride or admixtures containing chlorides shall not be used.
- E. Concrete Strength: Concrete strength shall be determined by design with a minimum 28 day design strength of 4,000 psi.

2.2 STEEL MATERIALS

- A. Products:
 - 1. Structural Shapes, Bars & Plates (1.6mm and thicker): ASTM A36
 - 2. Pipe: ASTM A53 Grades A or B
 - 3. Tube Steel: ASTM A500 Grades A or B
 - 4. Reinforcing Steel: ASTM A615 Grades 300 & 420 or ASTM A706
 - 5. Prestressing Strand: ASTM A416 Grade 270, low relaxation
 - 6. Deformed Steel Bar Mats: ASTM A184
 - 7. Deformed Bar Anchors: ASTM A496
 - 8. Deformed Welded Wire Fabric: ASTM A497
 - 9. Plain Welded Wire Fabric: ASTM A185
 - 10. Welded Headed Studs: AWS D1.1 Type B
 - 11. Standard Machine Bolts: ASTM A307 Grade A or SAE J429 Grade 2
 - 12. Standard Studs/Threaded Round Stock: ASTM A307 Grade C, ASTM A572 Grade 345
 - 13. Nuts for Standard Machine Bolts and Threaded Studs: ASTM A563 Grade A Hex Nuts
 - 14. High Strength Bolts: ASTM A325 Type 1, ASTM A449 Type 1, or SAE J429 Grade 5
 - 15. Nuts for High-Strength Bolts and Threaded Studs: ASTM A563 Grade DH Heavy Hex Nuts
 - 16. Coil Rods and Bolts: ASTM A108 - SAE 1016 to 1026, $F_u/F_y = 480/380$ MPa minimum
 - 17. Coil Nuts for Coil Rods and Bolts: Nuts passing a proof load stress of 80 ksi, based on the tensile stress area of the matching coil rods and bolts.
 - 18. Carbon Steel Castings: ASTM A27 Grade 415-205
- B. Protective Coatings:
 - 1. All connection hardware permanently exposed to weather after completion shall be protected. All connection hardware not exposed to weather after completion may be uncoated, except as otherwise explicitly required by the contract drawings. Fasteners can have either an electroplated zinc or cadmium coating.
 - 2. Alkyd Rust Inhibitive Primers (shop primers such as red iron oxide) :
 - a. Tnemec Series FD88 Azaron Primer
 - b. Ameron 5105
 - c. Weld-Thru Primer, Red, 2-0101 & Gray, 2-0102

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3. Zinc Coatings:
 - a. Hot-Dip Galvanizing: ASTM A123, or ASTM A153
 - b. Electroplated Zinc for Steel Products and Steel Hardware: ASTM B633
 - c. Zinc Rich Paints: DOD-P-21035
4. Cadmium Coatings:
 - a. Electrodeposited Coatings of Cadmium: ASTM B766

2.3 MISCELLANEOUS PRODUCTS

- A. Grout:
 1. Cement Grout: Portland cement, sand and water sufficient for placement and hydration.
 2. Non-Shrink Grout: Premixed, packaged non-ferrous aggregate shrink resistant.
 3. Epoxy Resin Grout: Two-component mineral-filled resin: ASTM C881.
- B. Joint Sealing Compound: The joint sealing compound shall be a permanently flexible plastic material complying in every detail to Federal Specification SS S-00210 (GSA-FSS) dated July 26, 1965. "Quickseal", or approved equal.
- C. Frames and Covers: Catch basins, manholes, and vaults shall be provided with fabricated aluminum or steel frames and covers as specified or shown on the drawings and shall be built up so that the cover is flush with the surrounding surface unless otherwise specified.

2.4 FABRICATION

- A. Unless otherwise noted, precast concrete structure dimensions called out on the Drawings are interior dimensions.
- B. Manufacturing procedures shall be in general compliance with PCI MNL-116.
- C. Manufacturer shall provide for those openings 10 in. or larger, round or square as shown on the drawings. Other openings shall be located and field drilled or cut by the trade requiring them after the units have been erected. Openings and/or cutting of prestressing strand shall be approved by ENGINEER and manufacturer before drilling or cutting.
- D. Forms:
 1. Forms for precast products shall be rigid and constructed of materials that will result in finished products conforming to the profiles, dimensions and tolerances indicated by this Section, the Contract Documents and the reviewed Shop Drawings.
 2. Construct forms to withstand vibration method selected.
 3. Release agents shall be applied and used according to manufacturer's instructions.
- E. Concreting:
 1. Batching of Concrete shall be in accordance with approved Mix Design(s).
 2. Convey concrete by methods which will prevent separation, segregation or loss of material.
 3. Consolidate all concrete in the form to minimize honeycombing or entrapped air.
- F. Curing: Procedures sufficient to insure specified concrete strength of all products must be employed. Stripping of a panel shall not occur until concrete strength is sufficient to prevent cracking or damage of the panel.

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- G. Manufacturing Tolerances:
1. Cross Sectional Dimensions:
 - a. Less than 24 inches: $\pm 1/4"$
 - b. 24 to 36 inches: $\pm 3/8"$
 - c. Over 36 inches: $\pm 1/2"$
 2. Length:
 - a. Less than 25 ft: $\pm 1/2"$
 - b. 25 to 50 ft: $\pm 3/4"$
 - c. Over 50 ft: $\pm 1"$
 3. Variation from square or designed skew (difference in length of two diagonal measurements): Max. $\pm 3/4"$
- H. Identification: Mark each precast item to correspond to identification mark on Shop Drawings for product location, and with casting date.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Access: Clear unloading areas and access roadways to point of component placement shall be provided and maintained by the CONTRACTOR. The CONTRACTOR shall provide all required traffic controls, barricades, warning lights and/or signs to insure a safe installation.
- B. Sitework: The CONTRACTOR shall excavate and prepare the subgrade, including 2 inches of clean sand, graded level and to the proper elevation.
- C. Installer Responsibility: Prior to installation of the precast products, notify the CONTRACTOR of any discrepancies discovered which affect the work under this contract.

3.2 INSTALLATION

- A. General: Precast products shall be lifted with suitable lifting devices at points provided by the Manufacturer to prevent excessive stresses or damage to the products. Brace and secure items before unhooking.
- B. Sitework:
1. Openings or "knockouts" shall be located as shown on the drawings and shall be sized sufficiently to permit passage of the largest dimension of pipe and/or coupling flange. Upon completion of installation, all voids or openings in the vault walls around pipes shall be filled with 4,000-psi concrete or mortar, using an approved epoxy for bonding concrete surfaces.
 2. All joints between precast sections shall be made watertight using preformed mastic material. The sealing compound shall be installed according to the manufacturer's recommendations to provide a watertight joint which remains impermeable throughout the design life of the structure. All joints shall be filled with dry-pack non-shrink grout. If plastic liner system is used, after the joint has been made and is cured, install plastic liner weld strip at all joints and seams.
 3. Frames and covers shall be built up so that the cover is flush with the surrounding surface unless otherwise specified. The CONTRACTOR is responsible for placing the cover at the proper elevation where paving is to be installed and shall make all necessary adjustments so that the cover meets these requirements.

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4. After the structure and all appurtenances are in place and approved, and after any required disinfection or testing, backfill shall be placed to the original ground line or to the limits designated on the plans.

3.3 FIELD QUALITY CONTROL

- A. Hydrostatic Testing:
 1. All Manholes, Wetwells, Junction Boxes, or other water bearing structures shall be hydrostatically tested prior to acceptance.
 2. Test Procedure:
 - a. Plug all inlets and outlets with temporary plugs
 - b. Fill water bearing structure with clean, potable water
 - c. Let stand for 24 hours, if desired, to allow for "soaking-in"
 - d. Fill to rim elevation
 - e. Let stand for a minimum of 2 hours
 - f. Check distance from rim to water surface
 - g. Calculate water loss. Leakage in each manhole may not exceed 0.1-gallon per hour per foot of water depth during the test.
 3. Repair all structures which do not meet the above test requirements with a method approved by the ENGINEER and re-test until passing.

3.4 PATCHES AND REPAIRS:

- A. Patching of products, when required, shall be performed to industry standards for structural concrete. Repairs shall be sound, permanent and flush with adjacent surface.

3.5 WARRANTY:

- A. All labor and materials under the Precast Manufacturers contract shall be warranted by the Precast Manufacturer for a period of one (1) year after substantial completion.

+ + END OF SECTION + +

SECTION 03600

GROUT

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes epoxy, non-metallic, non-shrink, and ordinary Portland cement-sand grouts.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM C33, Standard Specification for Concrete Aggregates.
 - 2. ASTM C150, Standard Specification for Portland Cement.
 - 3. ASTM C595, Standard Specification for Blended Hydraulic Cements.
 - 4. ASTM C1107, Standard Specification for Packaged Dry, Hydraulic-Cement Grout.

1.3 SYSTEM DESCRIPTION

- A. Furnish ordinary cement-sand grout for the following:
 - 1. Foundation grout.
 - 2. Construction joint grout.
 - 3. As shown in the Drawings.
- B. Furnish non-shrink, non-metallic grout for the following:
 - 1. Equipment bases, 25 hp or less.
 - 2. Base plates.
 - 3. Guardrail and railings.
 - 4. Through-bolt and form tie openings.
 - 5. As shown in the Drawings.
- C. Furnish epoxy grout for the following:
 - 1. Equipment bases, 26 hp or more and/or sole plates with vibration, thermal movement, etc.
 - 2. Blockouts for gate guides.
 - 3. Retrofit waterstop installation.
 - 4. As shown in the Drawings.

1.4 SUBMITTALS

- A. Product Data:
 - 1. Manufacturer's specifications and installation instructions for all proprietary materials.
 - 2. Proposed method for keeping existing concrete surfaces wet prior to placing grout.
 - 3. Forming method for fluid grout placements.
 - 4. Curing method for grout.
- B. Laboratory Test Reports and Certificates:
 - 1. For proprietary materials, submit copies of reports on quality control tests.
 - 2. Submit certification that materials meet specification requirements for nonproprietary materials.

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3. For ordinary cement-sand grout, copies of grout mix design and laboratory strength test reports.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery of Materials: Deliver grout materials from manufacturers in unopened containers and bearing intact manufacturer's labels.
- B. Storage of Materials: Store grout materials in a dry shelter and protected from moisture.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. High-Strength Epoxy Grout.
 1. Use 100% solids, prepackaged, solvent-free, moisture insensitive, high-strength epoxy grout.
 2. Product and Manufacturer: Provide one of the following:
 - a. E³-HP, as manufactured by The Euclid Chemical Company.
 - b. Sikadur 42 Grout Pak, as manufactured by Sika Corporation.
 - c. Five Star HP Epoxy Grout by Five Star Products, Incorporated.
 - d. Or approved equal.
- B. Non-shrink, Non-metallic Grout:
 1. Prepackaged non-staining cementitious grout which shall meet the minimum requirements of ASTM C1107 and requiring only the addition of water at the jobsite.
 2. Product and Manufacturer: Provide one of the following:
 - a. NS, as manufactured by The Euclid Chemical Company.
 - b. Five Star Grout, as manufactured by Five Star Products, Incorporated.
 - c. Sika Grout 212, as manufactured by Sika Corporation.
 - d. Or approved equal.
- C. Ordinary Cement-Sand Grout: Prepare design mix for ordinary cement grout.
 1. Cement: Portland cement, ASTM C150, Type II; or blended hydraulic cement, ASTM C595, Type 1P.
 2. Aggregates: ASTM C33 and as herein specified.
 - a. Do not use aggregates containing soluble salts or other substances such as iron sulfides, pyrite, marcasite, ochre, or other materials that can cause stains on exposed concrete surfaces.
 - b. Fine Aggregate: Clean, sharp, natural sand, free from loam, clay, lumps or other deleterious substances.
 - 1) Dune sand, bank run sand and manufactured sand are not acceptable.
 - c. Coarse Aggregate: Coarse aggregate not permitted.
 3. Admixtures: Provide admixtures produced by established reputable manufacturers and use in compliance with the manufacturer's printed instruction. Do not use admixtures that have not been incorporated and tested in the accepted mixes, unless otherwise authorized in writing by ENGINEER. Refer to Section 03300 - Cast-In-Place Concrete, for additional admixture requirements.
 4. Proportioning and Design of Mixes: Mixes are subject to the following limitations:
 - a. Specified 28-day Compressive Strength: 4,000 psi.
 - b. Minimum amount of water necessary for the mixture to flow under its own weight.
 - c. Fine Aggregate meeting ASTM C33.

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- d. Air Content Percentage: $\pm 1.5\%$.
- e. Minimum Cement Content in Pounds per Cubic Yard: 658.
- f. Slump at point of placement: $5" \pm 1"$.
- 5. Proportion mix by either laboratory trial batch or field experience methods, using materials to be employed on the Project for grout required. Comply with ACI 211.1 and provide a complete report, from an independent testing laboratory, to ENGINEER, at least 30 days prior to start of Work. Do not begin grout production until ENGINEER has approved mix.
- 6. Laboratory Trial Batches: When laboratory trial batches are used to select grout proportions, prepare test specimens and conduct strength tests as specified in ACI 301, Chapter 3 - Proportioning.
- 7. Field Experience Method: When field experience methods are used to select grout proportions, establish proportions as specified in ACI 301, Chapter 4.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine the substrate and conditions under which grout is to be placed with installer and notify ENGINEER, in writing, of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 INSTALLATION

- A. General:
 - 1. Mix, place and cure grout as shown and in accordance with manufacturer's instructions. If manufacturer's instructions conflict with the Specifications, do not proceed until ENGINEER provides clarification.
 - 2. Manufacturers of proprietary products shall make available upon 72 hours notification the services of a qualified, full time employee to aid in assuring proper use of the product under job conditions. The cost of this service, if any, shall be borne by CONTRACTOR.
 - 3. When placing grout conform to temperature and weather limitations in Section 03300 - Cast-In-Place Concrete.
- B. Through-bolt and form-tie holes: Fill space with dry pack dense grout hammered in with steel tool and hammer. Coordinate dry pack dense grout application with bonding agent in Section 03251 - Concrete Joints.
- C. Columns, Beams and Equipment Bases: Prepare concrete surface by sandblasting, chipping, or by mechanical means to remove any soft material prior to setting base plates and machinery. After shimming columns, beams and equipment indicated to be grouted on the plans to proper grade, securely tighten anchor bolts. Properly form around the base plates allowing sufficient room around the edges for placing the grout. Adequate depth between the bottom of the base plate and the top of concrete base must be provided to assure that the void is completely filled with grout.
- D. Guardrails and Railings: After posts and rails have been properly inserted into holes or sleeves, fill the annular space between posts and cast-in-place sleeves and/or below base plates with non-shrink grout. Bevel grout at juncture with post so that moisture flows away from posts.

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- E. Construction Joints: Ordinary cement-sand grout may be used in place of mortar over the contact surface of the old concrete at the interface of horizontal construction joints as outlined in Section 03251 - Concrete Joints, and Section 03300 - Cast-In-Place Concrete, of these Specifications.
- F. Curing: Cure all grout in accordance with manufacturer's written instructions. Wet cure ordinary cement-sand grout and non-shrink non-metallic grout for a minimum of three (3) days unless directed otherwise by the ENGINEER.

+ + END OF SECTION + +

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SECTION 03740

CRACK REPAIR BY EPOXY INJECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
1. CONTRACTOR shall furnish all material, tools, equipment, appliances, transportation, labor and supervision required to repair cracks by the injection of an epoxy resin adhesive.

1.2 QUALITY ASSURANCE

- A. Qualifications for Epoxy Injection Staff:
1. Manufacturer's Site Representative:
 - a. Capable of instructing successful methods for restoring concrete structures utilizing epoxy injection process.
 - b. Understands and is capable of explaining technical aspects of correct material selection and use.
 - c. Experienced in the operation, maintenance, and troubleshooting of application equipment.
 2. Injection crew and job foreman shall provide written and verifiable evidence showing compliance with the following requirements:
 - a. Licensed and certified by epoxy manufacturer.
 - b. Minimum 3 years' experience in successful epoxy injection for at least 10,000 linear feet of successful crack injection including 2,000 linear feet of wet crack injection to stop water leakage.
 3. CONTRACTOR shall retain the services of a qualified and authorized technical representative of the materials manufacturer to provide a site visit to specifically address the parameters of the repair and provide recommendations at the beginning of the installation and to make periodic visits to ensure that the work is performed in accordance with the manufacturer's recommendations and achieves the repair objectives.

1.3 SUBMITTALS

- A. Product Data: Submit copies of manufacturer's specifications and installation instructions for all materials and accessories including:
1. Manufacturer's recommended surface preparation procedures and application instruction for epoxy adhesives.
 2. Installation instructions for repairing core holes with epoxy grout.
 3. Manufacturer's Certificate of Compliance: Certified test results for each batch of epoxy adhesive.
 4. Statements of Qualification for Epoxy Adhesive:
 - a. Manufacturer's site representative.
 - b. Injection applicator.
 - c. Injection pump operating technician.
 5. Epoxy adhesive two component ratio and injection pressure test records for concrete crack repair work.

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1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping: Package adhesive material in new sealed containers and label with the following information:
 - 1. Manufacturer's name.
 - 2. Product name and lot number.
 - 3. Material Safety and Data Sheet, MSDS.
 - 4. Mix ratio by volume.
- B. Store adhesive containers at ambient temperatures below 100°F and above 45°F. Condition adhesive before use as recommended by the manufacturer.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Materials, equipment and accessories specified in this section shall be products of one of the following:
 - 1. Concreive Series, as manufactured by BASF Building Systems.
 - 2. Sikadur Series, as manufactured by Sika Corporation.
 - 3. Euco Series, as manufactured by Euclid Chemical Company.

2.2 EPOXY ADHESIVE

- A. Epoxy adhesive grout shall be a 100% solids 2-part water insensitive low-viscosity epoxy resin system.
- B. Epoxy shall be suitable for grouting both dry and damp cracks.
- C. Adhesive Properties:

7-day, Tensile Strength, psi	ASTM D638	5,000 min.
Tensile Elongation @ Break, percent	ASTM D638	1.0% min.
Compressive Yield Strength, 7 days @ 73°F, psi	ASTM D695	8,000 min.
Compressive Modulus, psi	ASTM D695	1.5x10 ⁵ min.
Heat Deflection Temperature, °F	ASTM D648	120 min.
Water Absorption @ 24 hours, percent	ASTM D570	1.0% max.
Bond Strength @ 2 days, psi	ASTM C882	1,000 min.
Bond Strength @ 14 days, psi	ASTM C882	1,500 min.

2.3 SURFACE SEAL

- A. The surface seal material is that material used to confine the injection adhesive in the fissure during injection and cure.
- B. The surface seal material shall have adequate strength to hold injection fittings firmly in place and to resist injection pressures adequately to prevent leakage during injection.
- C. Capable of removal after injection adhesive has cured.

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PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean cracks in accordance with epoxy adhesive manufacturer's instructions.
- B. Surface adjacent to cracks or other areas of application shall be cleaned of dirt, dust, grease, oil, efflorescence or other foreign matter which may be detrimental to the integrity of the bond between the epoxy and the injection surface. Acids and corrosives used for cleaning shall not be permitted.
- C. Entry ports shall be provided along the crack at intervals of not less than the thickness of the concrete at that location, unless otherwise specified by the adhesive manufacturer.
- D. Unless the crack is in submerged concrete, remove any water that can be seen by visual inspection from the crack before the injection process, and remove water that appears during the injection process.
- E. Do not inject cracks when the temperature of the concrete is below freezing and moisture conditions indicate the possibility of ice on the internal surfaces of the crack.
- F. Do not inject adhesive if the temperature of the concrete is not within the range of application temperatures recommended by the manufacturer of the adhesive.

3.2 INSTALLATION

- A. Sealing: Apply surface seal in accordance with manufacturer's instructions to designated crack face prior to injection. Seal surface of crack to prevent escape of injection epoxy.
- B. Entry Ports:
 - 1. Establish openings for epoxy entry in surface seal along crack.
 - 2. Determine space between entry ports equal to thickness of concrete member to allow epoxy to penetrate the full thickness of the wall.
 - 3. Provide a means to prevent concrete dusts and fines from contaminating the crack or ports when drilling.
 - 4. Space entry ports closer together to allow adjustment of injection pressure to obtain minimum loss of epoxy to soil at locations where:
 - a. Cracks extend entirely through wall.
 - b. Backfill of walls on one side.
 - c. Difficult to excavate behind wall to seal both crack surfaces.
 - d. Core drill to verify epoxy depth where only one side of wall is exposed.
- C. Epoxy Injection:
 - 1. Condition epoxy at a minimum of 70°F, or as recommended by the manufacturer.
 - 2. Start injection into each crack at lowest elevation entry port.
 - 3. Continue injection at first port until adhesive begins to flow out of port at next highest elevation.
 - 4. Plug first port and start injection at second port until adhesive flows from next port.
 - 5. Inject entire crack with same sequence.

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D. Finishing:

1. Cure epoxy adhesive after cracks have been completely filled to allow surface seal removal without draining or runback of epoxy material from cracks.
2. Remove surface seal from cured injection adhesive.
3. Finish crack face flush with adjacent concrete.
4. Indentations or protrusions caused by placement of entry ports are not acceptable.
5. Remove surface seal material and injection adhesive runs and spills from concrete surfaces.

E. Equipment:

1. The equipment used to meter and mix the two injection adhesive components and inject the mixed adhesive into the crack shall be portable, positive displacement type pumps with interlock to provide positive ratio control of exact proportions of the two components at the nozzle. The pumps shall be electric or air powered and shall provide in-line metering and mixing.
2. The injection equipment shall have automatic pressure control capable of discharging the mixed adhesive at any pre-set pressure up to 200 psi plus or minus 5 psi and shall be equipped with a manual pressure control override.
3. The injection equipment shall have the capability of maintaining the volume ratio for the injection adhesive prescribed by the manufacturer of the adhesive within a tolerance of plus or minus 5 percent by volume at any discharge pressure up to 160 psi.
4. Do not use batch mix pumps.

3.3 FIELD QUALITY CONTROL

A. Injection Pressure Test:

1. The mixing head of the injection equipment shall be connected and the equipment run until clear uniformly mixed material flows into the purge pail. The Operator shall engage the equipment shut-off nozzle valve and subsequently bump the on-off switch while monitoring pressure on psi gauge until the pressure reaches 200 psi. Pressure gauge shall be monitored for one minute. If pressure is maintained between 190 – 200 psi, check valves shall be considered to be functioning properly and the injection may proceed. If pressure drops below 190 psi, CONTRACTOR shall be required to have new seals installed on the check valves and the equipment shall be subsequently retested.
2. The pressure test shall be run for each injection unit at the beginning and after meal break of every shift that the unit is used in the work of crack repair.
3. The adequacy and accuracy of the equipment shall be solely the responsibility of CONTRACTOR.

B. Metering Accuracy Ratio Test:

1. The epoxy mixture ratio shall be monitored continuously while injecting by placing a strip of masking tape on the sides of the A & B reservoirs full height. After filling reservoirs, the A & B levels shall be marked and monitored while running injection machine into purge pail for a period of one minute at 160 psi discharge pressure.
2. The ratio test shall be run for each injection unit at the beginning of every shift that the unit is used in the work of crack repair and when injection work has stopped for more than 1 hour.

C. Proof of Ratio and Pressure Test:

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1. At all times during the course of the work CONTRACTOR shall keep complete and accurate records available to ENGINEER of the pressure and ratio tests specified above.
2. In addition, ENGINEER at any time without prior notification of CONTRACTOR, may request CONTRACTOR to conduct the tests specified above in the presence of ENGINEER.

D. Daily Log

1. Maintain a written daily log for each day of injection work that includes:
 - a. Ambient temperatures at the start and end of the workday and 4 hours after the end of the workday.
 - b. Weather conditions, such as rain, snow, and wind, including changes during the shift.
 - c. Crack cleaning methods, if any, including locations.
 - d. Record of injection adhesive, including manufacturer, product and batch number, and amount used each day.
 - e. Signature and printed name of person responsible for record keeping.

E. Core Testing

1. Initial Cores:
 - a. Obtain 4-inch diameter cores for the full crack depth taken from ENGINEER selected locations.
 - b. Visual inspection for depth of penetration:
 - 1) Three cores from the first 100-feet and one core for each 100-feet thereafter.
 - 2) It is permitted to obtain 2-inch cores if they are only used to verify adhesive penetration.
 - c. Splitting tensile strength per ASTM C496:
 - 1) One core for the first 100-feet and once core for each 75-feet thereafter.
 - d. Mark each of the cores with a "T" for top or "B" for bottom for cores taken vertically, or "H" for cores taken horizontally.
 - e. Mark the respective end of the core with the letters "IS" (injection side) to indicate the side from which the injection was performed.
2. Test Requirements:
 - a. Adhesive Penetration: Minimum of 90% of the crack shall be full of epoxy adhesive.
 - b. Splitting tensile strength / Compression Test: Concrete failure before adhesive failure, or 6,500 psi with no failure of either concrete or adhesive.
3. Acceptance Criteria:
 - a. If initial cores pass the tests as specified, epoxy adhesive injection Work at the area represented by cores will be accepted.
 - b. If adhesive penetration or bond strength are not acceptable, stop injection Work until the areas represented by the testing are accepted, and changes in procedures or materials for continued injection Work have been accepted. Reinject adhesive in the locations where injection has not been acceptable. If partial injection has blocked all access to the cracks on surfaces that can be reinjected, drill injection holes into the concrete to intersect the crack in their void areas.

F. Core Hole Repair:

1. Fill core holes with epoxy grout as required by the Project Specifications. Finish surface shall blend with adjacent concrete.

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+ + END OF SECTION + +

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SECTION 04200

CONCRETE MASONRY UNITS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: All masonry work shown on the Drawings. It also includes providing openings in masonry, to accommodate the Work under other Sections, and building into the masonry all items such as sleeves, anchor bolts, inserts and all other embedded items for which placement is not specifically provided under other Sections.

1.2 REFERENCES

- A. American Concrete Institute (ACI)
 - 1. ACI 315, "Manual of Standard Practice for Detailing Reinforced Concrete Structures."
- B. American Society for Testing and Materials (ASTM)
 - 1. ASTM A36, Carbon Structural Steel, Standard Specification for.
 - 2. ASTM A82, Steel Wire, Plain, for Concrete Reinforcement, Standard Specification for.
 - 3. ASTM A153, Zinc Coating (Hot Dip) on Iron and Steel Hardware, Standard Specification for.
 - 4. ASTM A167, Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip, Standard Specification for.
 - 5. ASTM A240, Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels, Standard Specification for.
 - 6. ASTM A366, Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality, Standard Specification for.
 - 7. ASTM A569, Steel, Carbon (0.15 Maximum Percent), Hot-Rolled Sheet and Strip, Commercial Quality, Standard Specification for.
 - 8. ASTM A580, Stainless Steel Wire, Standard Specification for.
 - 9. ASTM A615, Deformed and Plain Billet-Steel Bars for Concrete Reinforcement, Standard Specification for.
 - 10. ASTM A663, Steel Bars, Carbon, Merchant Quality, Mechanical Properties, Standard Specification for.
 - 11. ASTM C5, Quicklime for Structural Purposes.
 - 12. ASTM C67, Standard Methods of Sampling and Testing Brick.
 - 13. ASTM C90, Load-bearing Concrete Masonry Units, Standard Specification for.
 - 14. ASTM C91, Masonry Cement.
 - 15. ASTM C136, Sieve or Screen Analysis of Fine and Coarse Aggregates.
 - 16. ASTM C140, Sampling and Testing Concrete Masonry Units, Standard Test Methods of.
 - 17. ASTM C144, Aggregate for Masonry Mortar.
 - 18. ASTM C150, Portland Cement.
 - 19. ASTM C180, Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
 - 20. ASTM C207, Hydrated Lime for Masonry Purposes.
 - 21. ASTM C270, Mortar for Unit Masonry.
 - 22. ASTM C331, Lightweight Aggregates for Concrete Masonry Units, Standard Specification for.
 - 23. ASTM C404, Aggregates for Masonry Grouts.

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24. ASTM C426, Linear Drying Shrinkage of Concrete Masonry Units, Standard Test Method for.
 25. ASTM C476, Grout for Masonry.
 26. ASTM C744, Prefaced Concrete and Calcium Silicate Masonry Units, Standard Specification for.
 27. ASTM C1019, Standard Test Method of Sampling and Testing Grout.
 28. ASTM D2240, Rubber Property - Durometer Hardness, Standard Test Method for.
 29. ASTM E84, Surface Burning Characteristics of Building Materials, Standard Test Method for.
 30. ASTM E119, Fire Tests of Building Construction and Materials, Standard Test Methods for.
- C. Brick Institute of America
1. "Technical Notes on Brick and Tile Construction."
 2. Technical Bulletin 1A, "Construction and Protection Recommendations for Cold Weather Masonry Construction."
- D. National Concrete Masonry Association,
1. "Guide Specifications"
 2. "Technical Bulletins."
- E. Underwriters Laboratories (UL)
1. Design Numbers U901 through U914.

1.3 SYSTEM DESCRIPTION

- A. Coordination:
1. Review installation procedures under other Sections and coordinate the installation of items that must be installed with the masonry Work.
 2. Masonry Work advanced without built-in flashings and other items shall be removed and rebuilt, at no additional cost to OWNER, even if discovered after masonry has been completed.
 3. Coordinate the work of other Sections to avoid delay of the masonry Work.

1.4 SUBMITTALS

- A. Shop Drawings:
1. Complete layout of all masonry walls showing modular planning and all special shapes to be used. Show all details for each condition encountered in the Work. Provide plans and elevations drawn at 1/4-inch scale and details drawn at 1½-inch scale. Show all items required to be built into masonry.
 2. Masonry control joint locations and details.
 3. Fabrication, bending, and placement of reinforcing bars. Show bar schedules, diagrams of bent bars, stirrup spacing, lateral ties and other arrangements and assemblies as required for fabrication and placement of reinforcing for masonry Work.
 4. Explanation of where each masonry accessory will be used in the Work, quantities purchased and intended spacings.

- B. Samples:
 - 1. One unit of each type of concrete masonry unit specified.
 - 2. One unit or one modular length of each accessory item specified.
 - 3. Each type of colored mortar, showing the range of color that can be expected in the Work.
- C. Product Data:
 - 1. Complete selection of manufacturer's standard and custom colors.
 - 2. Mix designs for grout and mortar.
 - 3. Manufacturer's specifications and instructions for each manufactured product. Include data substantiating that materials comply with specified requirements.

1.5 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
 - 1. Comply with the applicable requirements of International Building Code, including the requirements for Special Inspection.
 - 2. Wherever a fire-resistance classification is shown or scheduled for masonry Work (4-hour, 3-hour, and similar designations), comply with applicable requirements for materials and installation established by UL and other governing authorities.
- B. Source Quality Control:
 - 1. Obtain all concrete masonry units from one manufacturer, cured by one process and of uniform texture and color or in an established uniform blend thereof. Cure units by autoclave treatment at minimum temperature of 350°F, and a minimum pressure of 125 psi.
 - 2. Do not change source or brands of materials during the course of the Work.
 - 3. No change shall be made in the proportions for mortar or grout, unless resubmitted and re-approved by the ENGINEER.
- C. Construction Tolerances:
 - 1. Variation from Plumb: For lines and surfaces of columns, walls, and expansion joints, do not exceed 1/4-inch in 10-feet, or 3/8-inch in one story height or 20-feet maximum, nor 1/2-inch in 40-feet or more.
 - 2. Variation from Level: For lines of exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines, do not exceed 1/4-inch in any bay or 20-feet maximum, nor 1/2-inch in 40-feet or more.
 - 3. Variation of Linear Building Line: For position shown and related portion of columns, walls and partitions, do not exceed 3/8-inch in any bay or 20-feet maximum, nor 1/2-inch in 40' or more.
 - 4. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, do not exceed +1/2-inch-1/4-inch from dimensions shown.
- D. Preconstruction Conference: Prior to the installation of masonry Work, CONTRACTOR shall schedule a Preconstruction Conference at the project site.
 - 1. Review foreseeable methods and procedures related to the masonry Work including, but not necessarily limited to, the following:
 - a. Project requirements, including Contract Documents.
 - b. Method of sequence of masonry construction.
 - c. Special masonry details.
 - d. Required submittals, both completed and yet to be completed.
 - e. Standards of workmanship.
 - f. Quality control requirements.

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- g. Job organization and availability of materials, tradesmen, equipment and facilities needed to make progress and avoid delays.
- h. Modular planning requirements.
- i. Weather and forecasted weather conditions and procedures for coping with unfavorable conditions.
- j. Required inspection, testing and certifying procedures.
- k. Regulations concerning building code compliance.
- 2. Attendance is mandatory for the following:
 - a. CONTRACTOR'S job superintendent.
 - b. Masonry subcontractor's job superintendent.
 - c. Masonry subcontractor's foreman.
 - d. Authorized representative of concrete unit masonry supplier.
 - e. ENGINEER'S authorized representative.
- 3. Reconvene the meeting at the earliest opportunity if additional information must be developed in order to conclude the subjects under consideration and to resolve any outstanding issues.
- 4. CONTRACTOR shall record the discussions of the conference and the decisions and agreements (or disagreements) and furnish a copy of the record to each party attending.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Delivery of Materials:

- 1. Deliver concrete masonry units in original, unopened and undamaged packages and pallets, plainly marked with identification of materials and name of approved manufacturer. Delivery shall be by the manufacturer or manufacturer's agent.
- 2. Deliver reinforcing to the site, bundled, tagged and marked. Use metal tags indicating size, lengths and other markings shown on approved Shop Drawings.
- 3. Manufactured materials, such as cement and lime, shall be delivered and stored in their original containers plainly marked with identification of materials and manufacturer.

B. Storage of Materials:

- 1. Store materials off the ground, protected from dirt, construction traffic and contamination. Cover using tarpaulins or polyethylene sheets to prevent damage such as wetting, staining, and chipping.
- 2. Do not stack concrete masonry units higher than recommended by manufacturer.

C. Handling Materials:

- 1. Handle materials in a manner that minimizes chips, cracks, voids, discolorations or other defects that might be visible or cause staining in finished Work.

1.7 JOB CONDITIONS

- A. Site Facilities: Supplemental heat sources, as may be required, should CONTRACTOR wish to continue masonry Work in cold weather if not available at the project site. The provision of all supplemental heat energy sources and equipment is the responsibility of CONTRACTOR.

B. Environmental Requirements:

- 1. Do not place any masonry Work when air temperature is below 28°F, on rising temperatures or below 36°F, on falling temperatures, without temporary heated

enclosures or without heating materials or other precautions necessary to prevent freezing.

2. No frozen materials shall be used, nor shall frozen masonry Work be built upon.
3. Remove and replace all masonry Work damaged by frost or freezing.

C. Protection:

1. Protect all masonry against freezing for at least 48 hours after being placed.
 - a. Mean Daily Air Temperature 40°F to 32°F: Protect masonry from rain for 48 hours after installation.
 - b. Mean Daily Temperature 32°F to 20°F: Completely cover masonry with insulating blankets for 48 hours.
 - c. Mean Daily Air Temperature 20°F and Below: Maintain masonry above 32°F for 48 hours by enclosure and supplementary heat.
2. Protect partially completed masonry against rapid heat loss and from water entering it when Work is not in progress, by covering top of walls with strong, waterproof, nonstaining membrane. Extend membrane at least 2' down both sides of walls and secure in place using wall cover clamps spaced at intervals of 4' and at each end and joint of covering.
3. Do not apply distributed floor or roof loading for at least 3 days after completing masonry columns or walls.
4. Do not apply concentrated loads for at least 7 days after completing masonry columns or walls.

D. Cold Weather Masonry Work:

1. All mortar for use in masonry Work, when the mean daily temperature is below 40°F, shall be portland cement- lime-sand mortars using high early strength portland cement.
2. Air Temperature 40°F to 32°F: Heat sand or mixing water to 70°F-160°F.
3. Air Temperature 32°F to 20°F: Heat sand and mixing water to 70°F-160°F. Provide heat on both sides of wall under construction to heat constructed masonry to 40°F. Employ wind breakers when wind is in excess of 15 mph.
4. Air Temperature below 20°F: Heat sand and mixing water to 70°F-120°F. Provide enclosure and auxiliary heat to maintain air temperature above 32°F. Heat constructed masonry to 40°F. Temperature of masonry units when laid shall not be less than 20°F.

E. Hot Weather Masonry Work:

1. Preparation – Prior to conducting masonry work:
 - a. When the ambient air temperature exceeds 100°F, or exceeds 90°F with a wind velocity greater than 8 mph:
 - 1) Maintain sand piles in a damp, loose condition.
 - 2) Provide necessary conditions and equipment to produce mortar having a temperature below 120°F.
 - b. When the ambient air temperature exceeds 115°F or exceeds 105°F with a wind velocity greater than 8 mph implement the requirements above and shade materials and mixing equipment from direct sunlight.
2. Construction – While masonry work is in progress:
 - a. When the ambient air temperature exceeds 100°F, or exceeds 90°F with a wind velocity greater than 8 mph:
 - 1) Maintain temperature of mortar and grout below 120°F.
 - 2) Flush mixer, mortar transport container, and mortar boards with cool water before they come into contact with mortar ingredients or mortar.
 - 3) Maintain mortar consistency by retempering with cool water.

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- 4) Use mortar within 2 hours of initial mixing.
- b. When the ambient temperature exceeds 115°F or exceeds 105°F with a wind velocity greater than 8 mph implement the requirements listed above and use cool mixing water for mortar and grout. Ice is permitted in the mixing water prior to use. Ice is not permitted in the mixing water when added to the other mortar or grout materials.
3. Protection – When the mean daily temperature exceeds 100°F or exceeds 90°F with a wind velocity greater than 8 mph, fog spray newly constructed masonry until damp, at least three times a day until the masonry is three days old.

PART 2 - PRODUCTS

2.1 GENERAL CONCRETE UNIT MASONRY

- A. General: Unless specifically modified by other requirements specified, provide concrete masonry units in compliance with the following classifications, weights, grades, colors, textures, scores, thermal resistance values and other features specified.
- B. Hollow Load-bearing Concrete Masonry Units: Provide the following:
 1. ASTM C90 medium weight.
 2. Minimum Compressive Strength: 1,900 pounds per square inch average of three units; 1,700 pounds per square inch minimum for an individual unit. The manufacturer shall certify that the masonry units meet all requirements of ASTM C90 including the moisture content and linear shrinkage requirements for intermediate conditions.
- C. Color and Texture: Provide the following:
 1. Manufacturer's complete selection of all standard and all custom colors. Submit preliminary color selection for review by ENGINEER.
 2. Color, surface texture and aggregate uniform within the normal range established by sample submission and as approved by ENGINEER.
- D. Special Shapes: Provide the following where required:
 1. Lintels, bond beams, reinforcing units, and flush-end reinforcing units, interior and exterior corner shapes, solid jambs, sash block, coves, premolded control joint blocks, headers, and other special conditions.
 2. Split-face, scored, and other facings, and special sizes, as shown on the Drawings.
- E. Waterproofing Admixture: Manufacture all types of concrete unit masonry, used in construction of exterior walls with an integral waterproofing admixture as follows:
 1. Material: Cross-linking acrylic polymer.
 2. Proportion: In strict accordance with manufacturer's instructions.
 3. Product and Manufacturer: Provide one of the following:
 - a. DRY-BLOCK Admixture by W. R. Grace & Company Construction Products Division.
 - b. Moxie Shield 1800 by Moxie International.
 - c. Or equal.

2.2 MORTAR

- A. General: Anti-freeze admixture or agents, including calcium chloride are not permitted.

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- B. Mortar for All Unit Masonry: Type S. Comply with ASTM C270, Table 2, except limit materials to those specified herein.
1. Portland cement-Lime: Provide the following proportions by volume:
 - a. Portland Cement: 1 part.
 - b. Hydrated Lime or Lime Putty: 1/4 to 1/2.
 - c. Aggregate (sand in damp, loose condition): 2 1/4 to 3 times the sum of cementitious materials.
 - d. Pigment: as required to match approved sample.
 2. Properties:
 - a. Average Compressive Strength, ASTM C270: 1,800 pounds per square inch.
 - b. Minimum Water Retention, ASTM C270: 75%.
 - c. Maximum Air Content, ASTM C270: 12% for Portland cement - lime mortars.

2.3 MASONRY GROUT

- A. Proportion coarse grout mixes subject to the following limitations:
1. Specified 28-day Compressive Strength: 2,000 psi
 2. Minimum Cementitious Content: 550 lb/cu yd
 - a. Fly ash per ASTM C618 may be used replace cement but shall not exceed 20% by weight of cement plus fly ash.
 3. Maximum Water-Cement Ratio by Weight: 0.52
 4. Slump at point of placement: 8" to 11"
- B. Proportion mixes by either laboratory trial batch or field experience methods, using materials to be employed on the Project for grout required. Comply with ACI 211.1.

2.4 MATERIALS

- A. Portland Cement:
1. ASTM C150: Use Type II.
 2. Nonstaining and of natural color or as required to be compatible with the approved pigment.
- B. Hydrated Lime: ASTM C207, Type S, or lime putty ASTM C5.
- C. Aggregates: ASTM C33 and as herein specified.
1. Do not use aggregates containing soluble salts or other substances such as iron sulfides, pyrite, marcasite, ochre, or other materials that can cause stains on exposed surfaces.
 2. Fine Aggregate: Clean, sharp, natural sand, free from loam, clay, lumps or other deleterious substances. For mortar, ASTM C144, except for mortar for joints less than 1/4-inch use aggregate graded with 100% passing the No. 16 sieve.
 3. Colored/ White Mortar Aggregates: Provide ground marble, granite or other sound stone, as required to match the approved sample.
 4. Coarse Aggregate: Clean, uncoated, processed aggregate containing no clay, mud, loam, or foreign matter, as follows:
 - a. Crushed stone, processed from natural rock or stone.
 - b. Washed gravel, natural or crushed. Use of slag and pit or bank run gravel is not permitted.
 - c. Coarse Aggregate Size: ASTM C33, No. 8 or 89.
- D. Admixtures:

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1. Provide admixtures produced by established reputable manufacturers and use in compliance with the manufacturer's printed instruction. Do not use admixtures that have not been incorporated and tested in the accepted mixes. Refer to Section 03300, Cast-In-Place Concrete, for additional admixture requirements.
 2. Waterproofing Admixture for Exterior Concrete Unit Masonry: Provide a cross-linking acrylic polymer integral waterproofing system, proportioned and mixed in strict accordance with manufacturer's instructions. Provide one of the following:
 - a. DRY-BLOCK Mortar Admix by W.R. Grace & Company Construction Products Division.
 - b. Moxie Shield 1800 by Moxie International.
 - c. Or equal.
- E. Colored Mortar Pigments:
1. Commercial iron oxide, manganese dioxide, ultramarine blue, chromium oxide, or carbon black, compounded for use in mortar mixes.
 2. Do not exceed pigment to cement ratios, by weight, of 1 to 35 for carbon black and 1 to 7 for other pigments.
 3. Product and Manufacturer: Provide one of the following:
 - a. Truetone Mortar Colors by Frank D. Davis Co., subsidiary of Rockwood Industries, Inc.
 - b. Sonobrite by Sonneborn Building Products Division Rexnord Chemical Products, Inc.
 - c. Or equal.
- F. Water: Clean and free from injurious amounts of oils, acids, alkalis, or organic matter.

2.5 REINFORCING

- A. Reinforcing Bars: ASTM A615, Grade 60 for all bars. Shop-fabricate reinforcing bars that are shown or required to be bent or hooked. Comply with ACI 315 for the fabrication of reinforcing steel for masonry Work.
- B. Wire products: Ties, and rebar positioners shall be fabricated from cold-drawn steel wire complying with ASTM A82 and hot-dipped galvanized after fabrication with 1.5 ounces per square foot of zinc coating complying with ASTM A153.
- C. Rebar Positioners: Nine gage reinforcing bar positioners which accommodate both horizontal and vertical reinforcing steel. Provide one of the following:
 1. #RB Series Rebar Positioners by Hohmann & Barnard, Inc.
 2. Or equal.

2.6 MISCELLANEOUS ACCESSORIES

- A. Compressible Filler: Provide watertight joint filler where masonry abuts structural framework members, and as shown. Provide the following:
 1. Polyurethane foam strip saturated with polybutylene waterproofing material which when installed at A compression ratio of 2:1 is impermeable to water.
 2. Resilient to -40°F with 100% movement recovery.
 3. Elongation of 140% with a tensile strength of not less than 53 psi.
 4. Product and Manufacturer: Provide one of the following:
 - a. Polyseal by Sandell Construction Solutions.
 - b. Or equal.

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- B. Premolded Control Joint Strips: Provide complete selection of solid extruded rubber strips with a Shore A durometer hardness of 80 to 90 complying with ASTM D2240, designed to fit standard sash block and maintain lateral stability in masonry wall. Provide one of the following:
 - 1. #RS Series - Rubber Control Joints by Hohmann & Barnard, Incorporated.
 - 2. Or equal.
- C. Sealants: Refer to Section 07900, Joint Sealants.

PART 3 - EXECUTION

3.1 INSPECTION

- A. CONTRACTOR and his installer shall examine areas and conditions under which masonry Work is to be installed, and notify ENGINEER, in writing, of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.
- B. Special Masonry Inspection:
 - 1. The OWNER will employ a testing laboratory to perform Special Masonry Inspections in accordance with Chapter 17 of the current Building Code.
 - 2. Masonry inspection services will be provided during the following construction activities:
 - a. During laying of units:
 - 1) During the first day of the masonry construction, inspect proportions of site prepared mortar, construction of mortar joints, location of all reinforcing and connectors, size and location of structural elements, type, size and location of anchors, protection of masonry during cold weather.
 - 2) Inspection to be continuous the first full day of masonry construction which requires special inspection.
 - a) Thereafter, a minimum of 3 hours every third day of construction until the concrete masonry work is complete.
 - 3) Inspection while laying masonry units may be made concurrently with other inspection duties provided all inspection duties are adequately performed.
 - 4) When deficiencies are found, additional inspection shall be provided as required until deficiencies have been corrected.
 - 5) If masonry crews change, an additional full day of inspection is required during the first day the new crew is on-site.
 - b. Placement of reinforcing steel:
 - 1) Verification of all reinforcing including size, grade, lap lengths, and type.
 - 2) Inspection of all reinforcing shall be continuous at Risk Category IV structures.
 - 3) Inspector to be present during the concrete pour in which any dowels connecting concrete to masonry are cast to verify proper location of dowels.
 - c. Prior to each grouting operation, verify that grout space is clean, reinforcing and connectors are properly placed, proportions of site-prepared grout are correct and mortar joints have been properly constructed.
 - 1) Inspection shall be continuous prior to and during grout placement at Risk Category IV structures.
 - d. Verify compliance with International Building Code and Specifications continuously during all grouting operations.

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- e. Provide special inspection in accordance with ACI 530 Table 3.1.3 for Risk Category IV structures including observation of masonry work for conformance to the Contract Documents:
 - 1) Provide inspection reports to the ENGINEER, Building Official and OWNER.
 - a) Notify Contractor of discrepancies for correction.
 - b) Notify ENGINEER, Building Official and OWNER, in writing, when discrepancies have been satisfactorily corrected.
 - 2) Submit final signed report stating that Work requiring special inspection was, to the best of the inspector's knowledge, in conformance to the Contract Documents and the applicable workmanship provisions of the International Building Code.

3.2 INSTALLATION, GENERAL

- A. Build chases and recesses as shown or required by others. Provide not less than 8-inch of masonry between chase or recess and jamb of openings, and between adjacent chases and recesses.
- B. Leave openings for equipment, piping, ducts, and other items to be installed subsequent to starting of masonry Work. After installation of said items, complete masonry Work to match Work immediately adjacent to openings.
- C. Cut masonry units using motor driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide pattern shown and to fit adjoining Work neatly. Use full size units without cutting wherever possible.

3.3 LAYING MASONRY WALLS

- A. General:
 - 1. Lay out walls in advance for accurate spacing of surface pattern bond with uniform joint widths and to properly locate openings, masonry control joints, returns and offsets. Avoid the use of less than half size units at corners, jambs and wherever possible at other locations.
 - 2. Lay up walls plumb and true to comply with specified tolerances, with courses level, accurately spaced and coordinated with other Work.
 - 3. Pattern Bond:
 - a. Lay all concrete masonry Work in running bond with vertical joints in each course centered on units in courses above and below unless otherwise shown.
 - b. Bond and interlock each course of each wythe at corners.
 - c. Do not use units with less than 8-inch horizontal face dimensions at corners or jambs.
- B. Mortar Bedding and Jointing:
 - 1. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course of piers, columns and pilasters, and where adjacent to cells or cavities to be reinforced or filled with concrete or grout.
 - a. Lay walls with 3/8-inch joints.
 - 2. Cut joints flush for masonry walls that are to be concealed or to be covered by other materials, except paint, unless otherwise shown.
 - 3. Tool exposed joints when mortar is "thumbprint" hard, slightly concave, unless otherwise required to match existing joint treatment. Rake out mortar in preparation for application of caulking or sealants where required.

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4. Concave-tool exterior joints below grade.
 5. Do not use mortar that has begun to set or if more than 30 minutes have elapsed since initial mixing. Do not retemper mortar.
 6. Remove masonry units disturbed after laying; clean and reset in fresh mortar. Do not pound corners at jambs to fit stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar and reset in fresh mortar.
- C. Stopping and Resuming Work: Rack back 1/2-unit masonry length in each course, and do not tooth. Clean exposed surfaces of set masonry, wet units lightly, if required, and remove loose masonry units and mortar prior to laying new masonry.
- D. Built-in Work: As the Work progresses, build in items shown, specified or required by others. Fill cores in one block width solidly with masonry grout around built-in items.
- E. Structural Reinforced Masonry:
1. Shape and dimension reinforcement as shown and are required by governing codes.
 2. Position reinforcing accurately at the spacing shown. Support and secure vertical bars against displacement with rebar positioners.
 3. For columns, piers and pilasters, provide a clear distance between vertical bars as shown, but not less than 1½-inch. Provide lateral ties.
 4. For horizontal bars, provide fully-lapped "L" shaped corner bars at corners and intersections.
 5. Provide lapped splices with reinforcing steel placed in contact with rebar positioners or tied. Provide 48 bar diameter lap length, unless otherwise shown.
- F. Grouting Structural Reinforced Masonry:
1. Place grout within 1.5 hours from introducing water in the mixture and prior to initial set. Discard grout that does not meet the specified slump, has exceeded the 1.5 hour timeframe or has reached initial set.
 2. Solid grout all walls, beams, piers and pilasters, unless noted otherwise.
 3. Provide temporary dams where required or barriers to control horizontal flow of grout at ends of wall sections. Build dams full height of grout pour. If masonry units are used, do not bond into permanent masonry wythes. Remove temporary dams after completion of grout pour.
 4. Grout pour height shall not exceed 5.33 feet for grouting cells of hollow units with dimensions equal to or greater than 2.5"x3".
 5. Grout pour height shall not exceed 1 foot for grouting cells of hollow units with dimensions less than or equal to 1.5"x3".
 6. Terminate pour 1½-inch below top of highest course in pour.
 7. Provide metal wall ties, if required, to prevent blow outs.

3.4 ANCHORING MASONRY WORK:

- A. Anchor masonry to structural members where masonry abuts or faces, such members to comply with the following:
1. Provide an open space, not less than 1/2-inch in width, between masonry and structural member, unless otherwise shown. Keep open space free of mortar or other rigid materials.
 2. Anchor masonry to structural members with metal ties embedded in masonry joints and attached to structure. Provide anchors with flexible tie sections, unless otherwise shown.
 3. Space anchors as shown, but not more than 8-inch on center vertically and 36-inch on center horizontally.

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4. Provide end blocks, where masonry abuts structural support, to facilitate installation of compressible filler, backer rod and sealant.
- B. Lintels and Bond Beams: Provide masonry lintels and bond beams where shown. Use specially formed "U" shaped lintel and bond beam units with reinforcing bars placed as shown, filled with grout. Temporarily support formed-in-place lintels and bond beams.

3.5 REPAIR, POINTING AND CLEANING

- A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point up all joints at corners, openings and adjacent Work to provide a neat, uniform appearance, properly prepared for application of sealant compounds.
- C. Cleaning Exposed, Unglazed Masonry Surfaces:
 1. Wipe off excess mortar as the Work progresses. Dry brush at the end of each day's Work.
 2. Final Cleaning: After mortar is thoroughly set and cured, clean sample wall area of approximately 20-square feet as described below. Obtain ENGINEER'S acceptance of sample cleaning before proceeding to clean remainder of masonry Work.
 - a. Dry clean to remove large particles of mortar using wood paddles and scrapers. Use chisel or wire brush if required.
 - b. Presoak wall by saturating with water and flush off loose mortar and dirt.
 - c. Acid type cleaners shall not be permitted.
 - d. Protect other Work from cleaning operations.
- D. Protection: Protect the masonry Work from deterioration, discoloration or damage during subsequent construction operations.

+ + END OF SECTION + +

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SECTION 05051

ANCHORS, INSERTS, AND DOWELS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes all post-installed anchors and inserts required to anchor parts of the Work to supporting concrete or masonry construction, and plaster. This Section also includes adhesives for anchoring reinforcing dowels into existing concrete.

1.2 REFERENCES

- A. American Society for Testing and Materials
 1. ASTM A36, Standard Specification for Structural Steel.
 2. ASTM A123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 3. ASTM A153, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 4. ASTM A194, Standard Specification for Carbon and Alloy Steel Nuts for High-Pressure or High-Temperature Service, or both.
 5. ASTM A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile.
 6. ASTM A320, Standard Specification for Alloys - Steel Bolting Materials for Low-Temperature Service.
 7. ASTM A484, Standard Specification for General Requirements for Stainless and Heat-Resisting Steel Bars, Billets and Forgings.
 8. ASTM A525, Standard Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.

1.3 SYSTEM DESCRIPTION

- A. Provide the size, type, and length of anchor shown on the drawings or, if not shown, as specified in the detailed sections of these specifications.
- B. When the size, length or load carrying capacity of an anchor bolt, expansion anchor, toggle bolt, or concrete insert is not shown or specified, provide the size, length and capacity required to carry the design load times a minimum safety factor of 4.
- C. For equipment anchors, if the design load is not specified by the manufacturer, provide anchors of diameter no less than the diameter of the hole minus 3/16 inch. When the design load is not specified by the manufacturer, provide structural calculations in accordance with Section 01610.

1.4 SUBMITTALS

- A. Product Data: Submit for approval copies of material certification, manufacturer's specifications, load tables, dimension diagrams and installation instructions for the devices.

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- B. Installer's Qualifications: When installing adhesive anchors subject to sustained tension loading or when specifically noted in the Drawings, submit for approval copies of the installer's qualifications certified by the ACI/CRSI Adhesive Anchor Installer Certification program.

1.5 QUALITY ASSURANCE

- A. Post-installed concrete anchors shall be ICC approved for seismic applications in cracked concrete and prequalified in accordance with ACI 355.2 or ACI 355.4.

PART 2 - PRODUCTS

2.1 ANCHOR BOLTS

- A. Nonsubmerged Use in areas of wet use, washdown areas, or areas outside heated buildings:
1. Stainless steel Type 316, unless otherwise shown.
 2. Diameter, Length and Bend Dimensions: As required by equipment or machinery manufacturer. Unless otherwise required, provide 3/4-inch minimum diameter by 12-inches long and other geometry as shown.
 3. Furnish A320 nuts and washers of same material for each bolt, unless otherwise shown.
 4. Provide sleeves as required or as shown for location adjustment.
- B. Submerged Use:
1. Submerged use is defined as any connection 1 foot 6 inches below the normal water surface elevation in a water holding basin.
 2. As specified for nonsubmerged use, for equipment, machinery or other connections except as follows:
 - a. Coating of anchor bolt threads is not required.
 - b. Where threads are covered with fusion bonded coating, provide nut of proper size to fit and provide connection of equal strength to embedded bolt.
- C. For anchoring fabricated metalwork, structural steel, or other components where connections will be protected or dry:
1. Galvanized Steel, 36 ksi, minimum.
 2. Minimum Size: 3/4-inch diameter by 12-inch long, unless otherwise shown.
 3. At base plates with grout pads, furnish two nuts and two washers per bolt of same material as bolt, unless otherwise shown.

2.2 ANCHOR BOLT SLEEVE

- A. High Density Polyethylene Plastic:
1. Single unit construction with deformed sidewalls such that the concrete and grout lock in place.
 2. The top of the sleeve shall be self-threading to provide adjustment of the threaded anchor bolt projection.
 3. Material requirements shall conform to the following:
 - a. Plastic: High density polyethylene.
 - b. Density: 0.956, ASTM D1505.
 - c. Vicat Softening Point: 256°F, ASTM D1525

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d. Brittleness Temperature: -180°F, ASTM D746

B. Fabricated Steel Sleeve:

1. Material: A36 steel.
2. Dimensions, welding, and sizes as shown.

2.3 STAINLESS STEEL FASTENERS LUBRICANT (ANTISEIZING)

- A. Provide for stainless steel nuts and machined bolts, anchor bolts, concrete anchors, and all other threaded fasteners.
- B. Lubricant shall contain substantial amounts of molybdenum disulfide, graphite, mica, talc, or copper as manufactured by:
1. Loc Tite Co., Permatex.
 2. Or equal

2.4 ADHESIVE (EPOXY) ANCHORS AND DOWELS

- A. Provide adhesive anchors where specifically shown and where adhesive anchors are allowed. Unless otherwise shown, adhesive anchors are allowed for anchoring:
1. Supports for pipe, conduit, and electrical boxes, devices, and panels, on floors and walls
 2. Handrails, guardrails, sunshades, stairs,
 3. Fixtures and equipment on floors and walls, and
 4. Single pipes and conduits <2 inch in diameter to ceilings and soffits.
- B. Adhesive shall be epoxy resin. Vinylester resin anchors are NOT allowed.
- C. Product and Manufacturer: Provide one of the following:
1. Installation to Concrete:
 - a. HIT-HY 200 as manufactured by Hilti, Inc.
 - b. SET-XP as manufactured by Simpson Strong-Tie, Inc.
 - c. Or approved equal meeting ACI 355.4.
 2. Installation to solid-grouted Masonry:
 - a. HIT-HY 70 as manufactured by Hilti, Inc.
 - b. SET as manufactured by Simpson Strong-Tie, Inc.
 - c. Or approved equal.

2.5 EXPANSION ANCHORS

- A. Provide expansion anchors only where specifically shown and where expansion anchors are allowed. Unless otherwise shown, and except as noted below, expansion anchors are allowed for anchoring:
1. Supports for pipe, conduit, and electrical boxes, devices, and panels, to floors and walls.
 2. Handrails, guardrails, and sunshades.
 3. Fixtures and equipment which have no moving parts, to floors and walls.
- B. Expansion anchors are NOT allowed in any submerged or chemical containment areas.
- C. Leveling nuts shall not be used with expansion anchors. If leveling nuts are required, provide adhesive anchors, unless otherwise shown.

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- D. Wedge anchors: Provide one of the following:
1. Installation to Concrete:
 - a. Hilti Kwik Bolt TZ by Hilti, Inc.
 - b. Strong-Bolt 2 by Simpson Strong-Tie, Inc.
 - c. Or approved equal meeting ACI 355.2.
 2. Installation to solid-grouted Masonry:
 - a. Hilti Kwik Bolt-3 by Hilti, Inc.
 - b. Wedge-All by Simpson Strong-Tie, Inc.
 - c. Or approved equal.

2.6 OTHERS

- A. Powder actuated fasteners and other types of anchors not specified herein shall not be used, unless approved by ENGINEER.

2.7 ACCESSORIES

- A. Provide Belleville washers, or approved equal, at anchorage connections used to transfer anchorage loads at sheet metal equipment housings.

PART 3 - EXECUTION

3.1 INSTALLATION OF ANCHORS

- A. Obtain anchor bolts in sufficient time so as not to delay concrete or masonry work.
- B. Adhesives shall be stored and installed at the service temperature ranges recommended by the manufacturer.
- C. Locate and accurately set the anchor bolts using templates or other devices as necessary.
- D. Protect threads and shank from damage during installation of equipment and structural steel.
- E. Post-installed anchors are NOT acceptable substitutes for cast-in-place anchor bolts.
- F. Assure that embedded items are protected from damage and are not filled in with concrete.
- G. Unless otherwise shown, the minimum diameter of anchor bolts for structural steel is $\frac{3}{4}$ inch, and for other applications, $\frac{3}{8}$ inch.
- H. Unless otherwise shown, provide the following minimum embedment, where "d" is the nominal anchor diameter:
1. Cast-in-place anchors: 12d.
 2. Adhesive anchors: 12d.
 3. Expansion anchors: 8d.
- I. Unless otherwise shown, provide a minimum edge distance equal to six times the bolt diameter for adhesive anchors, eight times the bolt diameter for expansion anchors and a bolt spacing equal to twelve times the bolt diameter.

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- J. Concrete shall have a minimum age of 21 days at the time of post-installed anchor installation.
 - 1. Concrete temperature at the time of adhesive anchor installation shall be at least 50°F.
- K. Existing reinforcing bars in the concrete structure may conflict with specific anchor locations. Unless noted on the Drawings that the bars can be cut, the contractor shall review the existing structural drawings and shall undertake to locate the position of the reinforcing bars at the locations of the concrete anchors by ferroskan, ground penetrating rebar (GPR), x-ray, chipping or other means.
- L. Drilling equipment used and installation of post-installed anchors shall be in accordance with the manufacturer's printed instructions.
- M. For the adhesive and expansion anchors, CONTRACTOR shall comply with the manufacturer's printed installation instructions on the drilled hole diameter and depth.
- N. CONTRACTOR shall properly clean out the hole utilizing a wire brush and compressed air in accordance with the manufacturer's printed installation instructions to remove all loose material from the hole, prior to installing adhesive or expansion anchors. Drilled and cleaned anchor holes shall be protected from contamination until the anchor is installed. A drilled anchor hole shall be re-cleaned assuming the hole was just drilled, if in the opinion of ENGINEER or Inspector that the hole has become contaminated after initial cleaning.
- O. Unless otherwise indicated by the manufacturer, adhesive shall be dispensed through a tube or cartridge extension, beginning at the maximum depth of the hole and withdrawn as adhesive is injected, followed by insertion and rotating the anchor to the specified depth. Where necessary, spaces around anchors at the surface shall be sealed at horizontal to vertically overhead locations to prevent loss of the adhesive during curing.
- P. Anchors to be installed in the adhesive shall be clean, oil-free, and free of loose rust, paint, or other coatings.
- Q. Installed anchors shall be securely fixed in-place to prevent displacement. Unless shown otherwise on the Drawings, anchors shall be installed perpendicular to the concrete surface.
- R. Reinforcing adhesive dowel bars or all-threaded adhesive bars shall not be bent after being adhesively embedded in hardened, sound concrete.
- S. In lieu of the use of stacked standard washers, if threads of an anchor bolt protrude beyond the attachment, the installers shall use a fabricated filler plate of equal or greater size of the washer. Hole on the filler plate shall be 1/16" (or 2 to 3 mm) greater than the bolt size. Coat as appropriate in accordance with the material and installation location requirements.

3.2 FIELD QUALITY CONTROL

- A. Anchors shall be installed by qualified personnel in accordance with the manufacturer's printed installation instructions. Installation of adhesive anchors shall be performed by personnel trained to install adhesive anchors.

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- B. Installation of adhesive anchors horizontally or upwardly inclined to support sustained tension loads shall be performed by personnel certified by the ACI/CRSI Adhesive Anchor Installer Certification program.
- C. OWNER shall employ a special inspector to perform field inspection services in accordance with Chapter 17 of the CBC for all post-installed anchors.
 - 1. The special inspector must be periodically on the jobsite during post-installed anchor installation.
 - 2. Adhesive anchors installed to resist sustained tension loads shall be continuously inspected during installation by an inspector specially approved for that purpose by the building official.
- D. CONTRACTOR shall correct improper workmanship, remove and replace, or correct as instructed by the ENGINEER, all anchors or bars found unacceptable or deficient, at no additional cost to the OWNER.
- E. The independent testing and inspection agency shall complete a report on each area. The report should summarize the observations made by the inspector and be submitted to ENGINEER.
- F. Provide access for the testing agency to places where Work is being produced so that required inspection and testing can be accomplished.

+ + END OF SECTION + +

SECTION 05120
STRUCTURAL STEEL

PART 1 - GENERAL

1.1 SUMMARY

- A. Scope:
1. Provide all labor, materials, equipment, and incidentals as shown on the Drawings, specified and required to furnish and install structural steel, including connections, surface preparation and shop priming.
 2. Structural steel is that Work defined in AISC "Code of Standard Practice", Section 2, and as shown on the Drawings. The Work also includes:
 - a. Providing openings in and attachments to structural steel to accommodate the Work under this and other Sections and providing for the structural steel all items such as anchor bolts, studs and all items required for which provision is not specifically included under other Sections.
- B. Coordination:
1. Review installation procedures under other Sections and coordinate the Work that must be installed with or attached to the structural steel.

1.2 SUBMITTALS

- A. Shop Drawings: Submit for approval the following:
1. Complete details and schedules for fabrication and shop assembly of members and details, schedules, procedures and diagrams showing the sequence of erection.
 - a. Include details of cuts, connections, camber, holes, and other pertinent data. Indicate welds by standard AWS symbols, and show size, length, and type of each weld.
 - b. Provide setting drawings, templates, and directions for the installation of anchor bolts and other anchorages.
 2. Copies of manufacturer's specifications and installation instructions for products listed below. Include laboratory test reports and other data as required to show compliance with the Contract Documents.
 - a. Structural steel of each type, including certified copies of mill reports covering the chemical and physical properties.
 - b. High strength bolts of each type, including nuts and washers.
 - c. Unfinished bolts and nuts.
 - d. Shop primer and touch-up field primer paint in accordance with Section 09900, Painting.

1.3 QUALITY ASSURANCE

- A. Reference Standards and Codes: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified:
1. ASTM A36, Specification for Carbon Structural Steel.
 2. ASTM A108, Specification for Steel Bar, Carbon and Alloy, Cold Finished.
 3. ASTM A307, Specification for Carbon Steel Bolts and Studs, 60,000 psi tensile strength.

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4. ASTM A325, Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
 5. ASTM A490, Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength.
 6. AWS D1.1, Structural Welding Code.
 7. AREA, Manual of Railway Engineering.
 8. AISC, Manual of Steel Construction.
 9. AISC, Code of Standard Practice for Steel Buildings and Bridges.
 10. AISC, Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings and including the Commentary and Supplements thereto as issued.
 11. AISC, Specifications for Structural Joints Using High-Strength Bolts, RCSC Specification.
- B. Design of Members and Connections:
1. All details shown on the Drawings are typical; similar details apply to similar conditions, unless otherwise shown on the Drawings or specified. Verify dimensions at the site without causing delay in the Work.
 2. Examine conditions under which structural steel is to be provided, and notify ENGINEER, in writing, of unsatisfactory conditions existing or whenever design of members and connections may not be clearly shown on the Drawings. Do not proceed with the Work until unsatisfactory conditions or deficiencies have been corrected in a manner acceptable to ENGINEER.
- C. Source Quality Control:
1. Materials and fabrication procedures shall be subject to inspection and tests in the mill, shop, and field, conducted by a qualified inspection agency. Such inspections and tests will not relieve CONTRACTOR of responsibility for providing materials and fabrication procedures in compliance with specified requirements.
 2. Steel fabricator shall have at least 5 years experience in the fabrication of structural steel for projects substantially similar to those required for this project.
 3. Fabrication shall be performed by a structural steel fabricating plant possessing a current certificate from AISC stating that the plant satisfies the requirements for certification for Certified Building Fabricator of the AISC Quality Management Systems Certification Program. The plant shall maintain this certification for the entire time fabrication for this project is being performed.
- D. Qualifications for Welding Work:
1. Qualify welding processes and welding operators in accordance with AWS "Structural Welding Code" D1.1, Section 5, Qualification.
 2. Provide certification that all welders employed on or to be employed for the Work have satisfactorily passed AWS qualification tests within the previous 12 months. Ensure that all certifications are kept current.
 3. All welds will be subject to visual inspection. Where visually deficient welds are observed, the welds will be tested using non-destructive methods by a certified testing laboratory. If welds are found to be satisfactory, OWNER will pay for testing. Where welds are found unacceptable or deficient, pay for testing, correct improper workmanship, remove and replace, or correct as instructed, all welds found unacceptable or deficient. Responsibility belongs to CONTRACTOR to pay for all corrections and subsequent tests required to confirm the integrity of the weld.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the site at such intervals to ensure uninterrupted progress of the Work.
 - 1. Deliver anchor bolts and anchorage devices, which are to be embedded in cast-in-place concrete or masonry, in ample time to not delay that Work.
- B. Store materials to permit easy access for inspection and identification. Keep steel members off the ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from corrosion and deterioration.
 - 1. Do not store materials on the structure in a manner that might cause distortion or damage to the members or the supporting structures. Repair or replace damaged materials or structures as directed.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Wide flange sections: ASTM A992 Grade 50.
- B. Steel pipe columns: ASTM A53 Grade B.
- C. Hollow Structural Sections (HSS): ASTM A500 Grade B.
- D. Plates, Angles, Channels, and S Shapes: ASTM A36, except where other type steel is shown on the Drawings.
- E. High-Strength Threaded Fasteners: Heavy hexagonal structural bolts, heavy hexagon nuts, and hardened washers, as follows:
 - 1. Quenched and tempered medium carbon steel bolts, nuts and washers, complying with ASTM A325 or:
 - 2. Quenched and tempered alloy steel bolts, nuts and washers, complying with ASTM A490.
 - 3. ASTM F1852 high-strength bolts shall be used for twist-off / tension-controlled bolts.
 - 4. Provide ASTM F436 washers for all bolts in accordance with RCSC Specification for Structural Joints Using High-Strength Bolts.
 - 5. Provide beveled washers at connections of sloped/tapered sections.
 - 6. Unless noted otherwise, high-strength fasteners shall be used for all non-stainless steel fasteners. Pre-tension all high-strength fasteners unless noted otherwise. Pre-tension any connection with designation (SC) slip critical. Slip critical (SC) connections must be free of paint, oil, or other materials that reduce friction at contact surfaces. Galvanized or lightly rusted surfaces are acceptable.
- F. Cast-in-Place Anchor Rods:
 - 1. ASTM F1554, Grade 36 with weldability supplement S1 for threaded rods galvanized.
 - 2. Provide ASTM F436 washers at all nuts.
 - 3. Embedded anchors shall be headed with a standard square plate washer tack welded to the anchor head, unless a larger washer is shown otherwise in the Drawings.
 - 4. Only provide threads at the top of the anchor as required for connections.
- G. Common Bolts:
 - 1. ASTM A307, Grade A for headed bolts galvanized.

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- H. Stainless Steel Fasteners:
 - 1. ASTM F593 Type 304 or 316 stainless steel with matching nut and washer for non-liquid containing (dry) structures.
 - 2. ASTM F593 Type 316 stainless steel for liquid-containing structures.
- I. Electrodes for Welding: E70XX complying with AWS D1.1 Section 8.
- J. Galvanizing:
 - 1. Zinc coated hardware: ASTM A153.
 - 2. Fabrications: ASTM A123.
 - 3. Members designated as galvanized on the drawings or as directed by ENGINEER shall be galvanized after fabrication in accordance with ASTM A385. Weight of zinc coating shall not be less than 2.5 ounces per square foot of actual surface and have a coating thickness of 0.0042 inch. Coating weight will be subject to verification by ENGINEER. Thickness of coating will be measured by means of a magnetic thickness gauge.
 - 4. Each fabricated assembly shall be totally immersed in the galvanizing bath. The galvanizing procedure shall be such as to avoid distortion of the assembly. Straightening of members after galvanizing will not be permitted. Assemblies shall be held in the galvanizing bath until the temperature of the assembly is equal to the temperature of the bath. All deviations shall require approval by ENGINEER.
 - 5. Any galvanized surface which has the coating removed for any cause shall be touched up with a zinc-rich cold galvanizing compound so that the entire surface has a uniform coating of 2.5 ounces of zinc per square foot.
 - 6. Galvanized work shall be subject to inspection by ENGINEER at any time to ensure strict compliance with this specification. Any areas found to show defects or signs of improper galvanizing application will be rejected. Repairs shall be made by CONTRACTOR without additional cost to OWNER.
- K. Surface preparation and Finish:
 - 1. Steel: Where not indicated to be galvanized, steel shall be primed in the shop per Section 09900, Painting. Exposed, non-galvanized, steel shall be coated per Section 09900, Painting.

2.2 FABRICATIONS

- A. Shop Fabrication and Assembly:
 - 1. General:
 - a. Fabricate and assemble structural assemblies in the shop to the greatest extent possible. Fabricate items of structural steel in accordance with AISC, Manual of Steel Construction, and as shown on the Shop Drawings. Provide camber in structural members as shown on the Drawings.
 - b. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence, which will expedite erection and minimize field handling of materials.
 - c. Where finishing is required, complete the assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in the final structure free of markings, burrs, and other defects.
 - 2. Field Connections:
 - a. All field connections, unless otherwise specified below or noted, shall be made with high strength bolts, and shall be bearing type connections.
 - b. Field welding may be used only where noted or approved by ENGINEER.
 - 3. High-Strength Bolted Construction:
 - a. Install high-strength threaded fasteners in accordance with AISC "Specification for Structural Joints Using High-Strength Bolts" (RCSC).

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4. Welded Construction: Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work.
 - a. Assemble and weld built-up sections by methods which will produce true alignment of axes without warp.
 5. Shear Connectors: Install stud shear connectors in accordance with AWS D1.1 Section 4, and as recommended by the manufacturer.
- B. Bracing:
1. Bracing shall have a minimum two bolt connection, or a shop welded connection of equivalent strength.
 2. Vertical bracing and knee braces connecting to columns shall be on the centerline of the columns, unless otherwise noted.
 3. Knee braces shall be at 45 degree angle, unless shown on the Drawings or noted.
 4. All gussets shall be minimum 3/8-inch thick, unless otherwise shown on the Drawings.
- C. Columns: Column shafts shall have "finished" bearing surfaces at the base and at all splice lines.
- D. Hollow Structural Sections (HSS): HSS shall be properly sealed to protect the internal surfaces.
- E. Holes and Appurtenances for Other Work:
1. Provide holes required for securing other work to structural steel framing, and for the passage of other work through steel framing members, as shown on the Shop Drawings. If large block-outs are required and approved by the ENGINEER, the webs shall be reinforced to develop specified shears. Provide threaded nuts welded to framing, and other specialty items as shown on the Drawings to receive other work.
 2. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.
 3. Refer to Paragraph 1.1.B, above, for the requirements of coordination with others.
- F. Grind smooth all rough welds and sharp edges shall be ground to approximately 1/8 inch radius.

2.3 WELDING

- A. Comply with AWS Code, and other requirements indicated herein, for all welding, techniques of welding employed, appearance and quality of welds, and methods used to correct defective work.
1. Qualify joint welding procedures or test in accordance with AWS qualification procedures.
- B. Test and qualify welders, welding operators and tackers in compliance with AWS Code for position and type of welding to which they will be assigned.
1. Conduct tests in presence of approved testing agency.
 2. Certification within previous 12 months will be acceptable, provided samples of the welder's work are satisfactory.
- C. Before Starting Welding:
1. Carefully plumb and align members in compliance with specified requirements.
 2. Fully tighten bolts.
 3. Comply with Section 5 of AWS Code for assembly and surface preparation.

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4. Preheat base metal to temperature stated in AWS Code.
 - a. When no preheat temperature is given in AWS Code and base metal is below 50°F, preheat base metal to at least 70°F.
 - b. Maintain temperature during welding.
 - c. Preheat surface of all base metal within distance from point of welding equal to thickness of thicker part being welded or 3 inches, whichever is greater, to specified preheat temperature.
 - d. Maintain this temperature during welding.
 5. Each welder shall use identifying mark at welds.
- D. Make flange welds before making web welds.
- E. Where groove welds have back-up plates, make first three passes with 1/8 inch round electrodes.
 1. Use backup plates in accordance with AWS Code, extending minimum of 1 inch either side of joint.
- F. Flame cut edges of stiffener plates at shop or field butt weld. Do not shear.
- G. Grind flush web fillets at webs notched to receive backup plates for flange groove welds.
- H. Low Hydrogen Electrodes: Dry and store electrodes in compliance with AWS Code.
- I. Do not perform welding when ambient temperature is lower than 0°F or where surfaces are wet or exposed to rain, snow, or high wind, or when welders are exposed to inclement conditions.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine areas and conditions under which structural steel Work is to be installed, and notify ENGINEER, in writing, of conditions detrimental to proper and timely completion of Work. Do not proceed with Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 ERECTION

- A. General: Comply with the AISC Specifications and Code of Standard Practice, and as herein specified.
- B. Temporary Shoring and Bracing: Provide temporary shoring and bracing members with connections of sufficient strength to bear imposed loads. Remove temporary members and connections when permanent members are in place and final connections are made. Provide temporary guy lines to achieve proper alignment of the structures as erection proceeds.
- C. Anchor Bolts: Furnish anchor bolts and other connectors required for securing structural steel to foundations and other in-place Work.
 1. Furnish templates and other devices as necessary for presetting bolts and other anchors to accurate locations.

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- a. Refer to Section 05051, Anchors, Inserts and Epoxy Dowels, of these Specifications for anchor bolt installation requirements.
- D. Setting Bases and Bearing Plates: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen to improve bond to surfaces. Clean the bottom surface of base and bearing plates.
 - 1. Set loose and attached base plates and bearing plates for structural members on steel wedges or other adjusting devices.
 - 2. Tighten the anchor bolts after the supported members have been positioned and plumbed. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the base or bearing plate prior to packing with grout.
 - 3. Place non-shrink grout between bearing surfaces and bases or plates as specified in Section 03600, Grout. Finish exposed surfaces, protect installed materials, and allow curing in strict compliance with the manufacturer's instructions, or as otherwise required.
 - 4. Leveling plates and wood wedges will not be permitted.
- E. Field Assembly: Set structural frames accurately to the lines and elevations as shown on the Drawings. Align and adjust the various members forming a part of a complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces, which will be in permanent contact before assembly. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 1. Level and plumb individual members of the structure within tolerances as specified in AISC Manual. For members requiring accurate alignment, clip angles, lintels and other members shall be provided with slotted holes for horizontal adjustment at least 3/8-inch in each direction, or more when required.
 - 2. Splice members only where shown on the Drawings or specified.
- F. Erection Bolts: On exposed welded construction, remove erection bolts, fill holes with plug welds and grind smooth at exposed surfaces.
- G. Comply with AISC Manual for bearing, adequacy of temporary connections, alignment, and the removal of paint on surfaces adjacent to field welds.
 - 1. Do not enlarge unfair holes in members by burning or by the use of drift pins, except in secondary bracing members. Ream holes that must be enlarged to admit bolts.
- H. Gas Cutting: Do not use gas cutting torches for correcting fabrication errors in the structural framing. Cutting will be permitted only on secondary members, which are not under stress, as acceptable to ENGINEER. Finish gas-cut sections equal to a sheared appearance when permitted.
- I. Touchup Painting:
 - 1. Unless otherwise specified below, comply with all requirements of touch-up painting specified in Section 09900, Painting.
 - 2. Immediately after erection, clean field welds, bolted connections, and all damaged and abraded areas of the shop paint. Apply paint to all exposed areas with the same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness as specified in Section 09900, Painting.

3.3 FIELD QUALITY CONTROL

- A. The OWNER will employ a testing laboratory approved by the ENGINEER to perform field quality control testing to inspect and to perform tests and prepare test reports in accordance with CBC section 1705.2 and AISC 360.
 - 1. The testing agency shall conduct and interpret the tests and state in each report whether the test specimens comply with the requirements, and specifically state all deviations.
 - 2. Provide access for the testing agency to places where structural steel Work is being fabricated or produced so that required inspection and testing can be accomplished.
 - 3. The testing agency may inspect structural steel at the plant before shipment; however, ENGINEER reserves the right, at any time before Final Acceptance, to reject material not complying with specified requirements.
- B. Correct deficiencies in structural steel Work that inspection and/or laboratory test reports indicate do not comply with the Specifications. Perform additional tests, as may be required to reconfirm any non-compliance of the original Work, and as may be required to show compliance of corrected Work.

+ + END OF SECTION + +

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SECTION 05200

STEEL JOISTS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Copies of manufacturer's specifications and installation instructions for each type of joist and its accessories. Include manufacturer's certification that joists comply with AISC-SJI "Specifications."
 - 2. Detailed drawings showing layout of joist units, headers, special connections, jointing and accessories. Include the mark, number, type, location and spacing of joists and bridging. Provide location drawings for installation of anchor bolts.
 - 3. Detailed drawings showing supports, field splices, bridging attachments and nonstandard joist profiles.
 - 4. Shop Drawings shall list all applicable loads.
- B. Structural Calculations:
 - 1. The steel joist manufacturer shall submit design calculations with a cover letter bearing the seal and signature of the joist manufacturer's registered design professional licensed in California.

1.2 QUALITY ASSURANCE

- A. Fabricator Qualifications: Fabricated by a firm regularly engaged in the manufacture of the types of steel joist specified. Manufacturer to have fabricated joists for at least 2 years.
- B. Qualification of Welding Work:
 - 1. Qualify welding processes and welding operators in accordance with the AWS D1.1, Section 5 Qualification.
 - 2. All welds will be subject to visual inspection. Where visually deficient welds are observed, the welds will be tested using non-destructive methods by a certified testing laboratory. If welds are found to be satisfactory, OWNER will pay for testing. Where welds are found unacceptable or deficient, the CONTRACTOR will pay for testing. The CONTRACTOR will correct improper workmanship, remove and replace, or correct as instructed, all welds found unacceptable or deficient. The CONTRACTOR will pay for all corrections and subsequent tests required to confirm the integrity of the weld.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle steel joists as recommended in AISC-SJI "Specifications." Handle and store joists in a manner to avoid deforming members and to avoid excessive stresses.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Steel: Comply with AISC-SJI "Specifications".
- B. Unfinished Threaded Fasteners: ASTM A307, Grade A, regular hexagon type, low carbon steel.
- C. High-Strength Threaded Fasteners: ASTM A325 or A490 heavy hexagon structural bolts with nuts and hardened washers.
- D. Surface Preparation and Shop Priming: All steel joists shall be primed in the shop. Surface preparation and shop priming are included herein, but are specified in Section 09900 - Painting.

2.2 FABRICATION

- A. General: Fabricate steel joists in accordance with AISC-SJI "Specification."
- B. Bottom Chord: Joists with bottom chords consisting of round bars will not be acceptable.
- C. Holes in Chord Members:
 - 1. Provide holes in chord members where shown for securing other Work to the steel joists.
- D. Extended Ends:
 - 1. Provide extended ends on joists where shown, complying with the manufacturer's standards and requirements of applicable AISC-SJI "Specifications" and load tables.
- E. Bridging:
 - 1. Provide horizontal or diagonal type bridging for open web joists, complying with AISC-SJI "Specifications".
- F. End Anchorage: Provide end anchorages to secure joists to adjacent construction, complying with AISC-SJI "Specifications", unless otherwise shown.

PART 3 - EXECUTION

3.1 INSPECTION

- A. The CONTRACTOR and their installer shall examine the substrate and the conditions under which Work is to be performed and notify ENGINEER, in writing, of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 ERECTION

- A. Place and secure steel joists in accordance with AISC-SJI "Specifications," approved Shop Drawings, and as specified.
- B. Anchors: Furnish anchor bolts and other devices to be built into the concrete and masonry construction. Furnish templates for the accurate location of anchors in other

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Work. Furnish unfinished threaded fasteners for anchor bolts, unless otherwise indicated.

C. Placing Joists:

1. Do not start placement of steel joists until supporting Work is in place and secured. Place joists on supporting Work, adjust and align in accurate locations and spacing before permanently fastening.
2. Provide temporary bridging, connections, and anchors to ensure lateral stability during construction.

D. Bridging: Install bridging simultaneously with joist erection.

E. Fastening Joists:

1. Field weld joists to supporting steel framework in accordance with AISC-SJI "Specifications" for the type of joists used. Coordinate welding sequence and procedure with the placing of joists.
2. Bolt joists to supporting steel framework in accordance with AISC-SJI "Specifications" for the type of joists used.
 - a. Provide unfinished threaded fasteners for bolted connections, unless otherwise indicated.
 - b. Provide unfinished threaded fasteners for bolted connections, except where high-strength bolts or welded connections are shown.
 - c. Provide high-strength threaded fasteners for bolted connections of steel joists to steel columns, and at other locations where shown, installed in accordance with AISC, Specifications for Structural Joints Using ASTM A 325 or A 490 Bolts.

F. Touch-Up Painting: After joist installation, paint all field bolt heads and nuts, and welded areas, abraded or rusty surfaces on joists and steel supporting members. Wire brush surfaces and clean with solvent before painting. Use the same type of paint as used for shop painting.

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SECTION 05300

METAL ROOF DECKING

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Complete erection drawings showing layout and dimensions, including type and gauge of decking sections, adaptations around openings and other special conditions, method of welding or anchoring sections to supporting structural steel, procedure for attaching end closure plates and butt joint cover plates, support of openings and miscellaneous flashing.
 - 2. Manufacturer's product literature and relevant approvals for decking, welding, mechanical fasteners, and sidelap connectors.

1.2 QUALITY ASSURANCE

- A. Field Measurements: Take field measurements prior to preparation of Shop Drawings and fabrication to ensure proper fitting of the Work.
- B. Fabrication and erection shall be in accordance with the current edition of the Steel Deck Institute "Code of Standard Practice". Steel decking shall be delivered, stored, handled and installed in such a manner that it will not be damaged or deformed.
- C. Qualification of Welding Work:
 - 1. Qualify welding processes and welding operators in accordance with AWS D1.1, Section 5 - Qualification.
 - 2. Decking welded in place is subject to inspection and testing. Expense of removing and replacing any portion of decking for testing purposes will be borne by the Owner if welds are found to be satisfactory; otherwise the CONTRACTOR shall pay all costs involved. Remove Work found to be defective and provide new acceptable Work.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Transport, store and erect metal decking and accessories in a manner that will prevent corrosion, deformation or other damage. Store decking clear of the ground with one end elevated to promote drainage. Protect metal deck from water and the elements with a water resistant material.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Deck sections and attachments shall be as shown on the Drawings. Decking having cross-sectional properties, which differ from the indicated, may be used provided that the structural properties of the proposed decking are equal to or greater than, the structural properties of the decking indicated.

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- B. Decking, where indicated, shall have sheet lengths that cover three or more spans wherever practicable.
- C. Galvanized Steel Sheet Decking: ASTM A653. The steel shall receive a protective metal coating of zinc conforming to ASTM A653, with a minimum of 0.6-ounce zinc per square foot, G-90. The decking shall be 18-gauge, unless otherwise shown on the Drawings.
 - 1. Product and Manufacturer: Provide one of the following:
 - a. Vulcraft.
 - b. Verco Manufacturing.
 - c. ASC Steel Deck.
 - d. Or approved equal.
- D. Accessories shall be formed of the same material as used for the steel deck.
- E. Miscellaneous Steel Shapes: ASTM A36.
- F. Mechanical Fasteners (power actuated):
 - 1. Product and Manufacturer: Provide one of the following:
 - a. Hilti, Inc.
 - b. Or approved equal.
- G. Sidelap Connectors:
 - 1. Product and Manufacturer: Provide one of the following:
 - a. Hilti, Inc.
 - b. Elco Textron.
 - c. Or approved equal.
- H. Galvanizing Repair Paint: Any galvanized surface which has the coating removed for any cause shall be touched up with a zinc-rich cold galvanizing compound so that the entire repair surface has a uniform coating of 1.0 ounces of zinc per square foot.

2.2 FABRICATION

- A. Manufacture deck units to lengths as indicated on the shop drawings. Panel end conditions are to be end-lapped 2-inches minimum. Sidelaps are to be nestable or interlocking when using screw-type fasteners.

PART 3 - EXECUTION

3.1 INSPECTION

- A. The CONTRACTOR shall examine conditions under which decking is to be installed and notify Engineer, in writing, of any unsatisfactory condition existing or whenever design of decking and connection may not be clearly indicated. Do not proceed with the Work until unsatisfactory conditions or deficiencies have been corrected in a manner acceptable to Engineer.

3.2 WORKMANSHIP

- A. Decking shall be installed in accordance with the manufacturer's requirements and approved erection layout drawing.

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- B. Steel decking shall be provided complete, including all cutting, shaping, fitting, drilling, welding, ridge plates, valley plates, reinforcing plates for all openings in the deck and miscellaneous pieces necessary for proper installation and weathertight construction.
- C. The steel deck units shall be placed on the supporting framework, aligned, and adjusted to final position before being permanently fastened.
- D. If the supporting beams are not properly aligned or sufficiently level to permit proper bearing of steel units, The CONTRACTOR shall take corrective action to ensure properly aligned Work.
- E. Special care shall be exercised not to damage or overload the decking during installation. The maximum uniform distributed load shall not exceed 20 psf. The decking shall not be used for storage or as a working platform until the sheets have been welded into position.
- F. The decking sheet shall be formed at the longitudinal sides in such a manner that they will overlap and interlock. All interlocking seams shall be welded as specified on the Drawings, with 1 ½-inch long side seam welds.
- G. End laps shall be a minimum of 2-inches and shall occur over bearings only.
- H. The steel decking shall provide a continuous uniform slope, with practically flush top surfaces, and shall be installed in straight and continuous rows, as far as practicable, with ribs at right angles to the supporting members.
- I. All sheets shall be 36-inch wide. Narrower closure strips shall be welded to adjacent full sheet with 1 ½-inch long seam welds at 12-inch on center.
- J. Flashing: Provide zinc coated continuous flashing for deck units at openings and at deck perimeters, if necessary.
- K. Connection Plates: Provide 14-gauge galvanized bent plate sections as shown or required over perimeter and interior framing to allow specified welding to parallel supports.
- L. After erection, all damaged surfaces shall be primed with a zinc dust type primer paint.
- M. After erection, all surfaces shall be cleaned and left free of all grime and dirt.

3.3 ATTACHMENT

- A. Steel deck units shall be fastened to steel framework as shown on the Drawings. Welds shall be free of sharp points or edges. All welds shall be cleaned immediately, by chipping or wire brushing, and shall be coated with a zinc dust type primer paint.
- B. Welding shall conform to the applicable requirements of the AISC "Light Gauge Steel Design" and all welding shall be done by qualified welders. Welder qualifications shall be in accordance with AWS Specification B3.0, "Standard Qualification Procedures."
- C. Decking sheets fastened to framing with proprietary mechanical connections or screws shall be installed in accordance with the manufacturer's recommendations and ICC report.

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+ + END OF SECTION + +

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SECTION 05500

MISCELLANEOUS METALS

PART 1 - GENERAL

1.1 SUMMARY

- A. Work necessary to furnish and install, complete, fabricated metalwork and castings as shown or as required to secure various parts together and provide a complete installation.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings for the fabrication and erection of the miscellaneous metal Work. Include plans, elevations and details of sections and connections. Clearly show all field connections. Show anchorage and accessory items.
- B. Product Data: Submit copies of manufacturer's specifications, load tables, dimensions, diagrams, anchor details, and installation instructions for manufactured products.
- C. Samples: Submit representative samples of manufactured products.

1.3 QUALITY ASSURANCE

- A. Field Measurements: Take field measurements prior to preparation of Shop Drawings and fabrication to ensure proper fitting of the Work.
- B. Shop Assembly: Preassemble items in the shop to the greatest extent possible, so as to minimize field splicing and assembly of units at the project site. Disassemble units to the extent necessary for shipping limitations. Clearly mark units for reassembly and coordinated installation.
- C. Qualifications: Qualify welding operators in accordance with requirements of current AWS Standard Performance Qualification Procedures in the applicable structural welding code.
 - 1. Qualification Tests: Performed by a recognized testing laboratory.
- D. Certification: Certify welders of structural and reinforcing steel for all positions of welding in accordance with such procedure.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Like Items of Materials: Provide end products of one manufacturer in order to achieve standardization for appearance, operation, maintenance, replacement, and manufacturer's service.
- B. Lifting Lugs: Provide on equipment and equipment components weighing over 100 pounds.
- C. Furnish miscellaneous items:

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1. Miscellaneous metalwork and castings as shown, or as required to secure various parts together and provide a complete installation.
2. Items specified herein are not intended to be all-inclusive. Provide metalwork and castings shown, specified, or which can reasonably be inferred as necessary to complete the project.

2.2 MATERIALS

- A. Carbon steel structural shapes:
 1. Wide flange sections: ASTM A992 Grade 50.
 2. Steel pipe columns: ASTM A53 Grade B.
 3. Hollow Structural Sections (HSS): ASTM A500 Grade B.
 4. Plates, Angles, Channels, and S Shapes: ASTM A36.
- B. Stainless Steel:
 1. Plates and Sheets: ASTM A240, Type 304L or 316
 2. Structural shapes: ASTM A276 or A479, Type 304L or 316.
 3. Fasteners and fittings: ASTM A320, Type 316
 - a. Where stainless steel bolts are in contact with dissimilar metals provide insulating sleeves and phenolic washers to electrically isolate the bolts and nuts.
- C. Aluminum, Structural Shapes and Plates: Alloy 6061-T6, meeting Aluminum Assoc. Specification for Aluminum Structures
- D. Cast Iron: A48, Class 30
- E. Light Gauge Steel Framing:
 1. Manufactured by SSMA ICC ESR-3064P, or equivalent, to meet the requirements of AISI S100.
 2. ASTM A570 or A446 with a minimum yield strength of 33 ksi for 18 gauge and 20 gauge, 50 ksi for 14 gauge and 16 gauge.
 3. Framing members shall have the section properties as listed on the Drawings.
- F. High-Strength Threaded Fasteners: Heavy hexagonal structural bolts, heavy hexagon nuts, and hardened washers, as follows:
 1. Quenched and tempered medium carbon steel bolts, nuts and washers, complying with ASTM A325 or:
 2. Quenched and tempered alloy steel bolts, nuts and washers, complying with ASTM A490.
 3. Provide two ASTM F436 washers for all bolts.
 4. Provide beveled washers at connections of sloped/tapered sections.
 5. Unless noted otherwise, high-strength fasteners shall be used for all non-stainless steel fasteners.
- G. Cast-in-Place Anchor Rods:
 1. ASTM F1554, Grade 36 with weldability supplement S1, galvanized, unless shown otherwise.
 2. Provide ASTM F436 washers at all nuts unless shown otherwise.
 3. Provide anchor bolt sleeves as required or as shown for location adjustment.
 4. Provide stainless steel anchors where shown on the Drawings or listed in another specific specification section.
- H. Galvanizing:
 1. Zinc coated hardware: ASTM A153.

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2. Fabrications: ASTM A123.

I. Surface preparation and Finish:

1. Steel: Where not indicated to be galvanized, steel shall be primed in the shop. Comply with Section 09900, Painting.

2.3 ANCHOR BOLT SLEEVE

A. High Density Polyethylene Plastic:

1. Single unit construction with deformed sidewalls such that the concrete and grout lock in place.
2. The top of the sleeve shall be self-threading to provide adjustment of the threaded anchor bolt projection.
3. Material requirements shall conform to the following:
 - a. Plastic: High density polyethylene.
 - b. Density: 0.956, ASTM D1505.
 - c. Vicat Softening Point: 256°F, ASTM D1525
 - d. Brittleness Temperature: -180°F, ASTM D746

B. Fabricated Steel Sleeve:

1. Material: A36 steel.
2. Dimensions, welding, and sizes as shown.

2.4 FABRICATIONS

A. Miscellaneous Framings and Supports:

1. Fabricate units to the sizes, shapes, and profiles shown, or if not shown, of the required dimensions to receive the adjacent gratings, plates, tanks, doors, or other work to be retained by the framing.
2. Except as otherwise shown, fabricate from structural shapes, plates, and bars of compatible material, all-welded construction, using mitered corners, welded brackets and splice plates, and a minimum number of joints for field connection. Cut, drill, and tap units to receive hardware and other items to be anchored to the work.
3. Equip units with integrally welded anchors for casting into concrete or integrating into masonry. Furnish inserts for casting in, if units must be installed after concrete or grout is placed. Anchor spacing shall be 24" on-center, unless otherwise shown.
4. Galvanize where shown.

B. Miscellaneous Fabricated Metals:

1. The following additional items are listed as a guide. Some items on list may not be required, and list may not be all-inclusive. Submittal data for materials and products must be approved before they are incorporated in the work.
 - a. Float Switch Supports
 - b. Lifting Eyes.
 - c. Pipe Supports.
 - d. Steel Bases and Anchors.

C. Stainless Steel Fabrication: Following welding fabrication all stainless steel assemblies shall be cleaned, descaled and passivated in accordance with ASTM A380.

D. Anchors, Fasteners, and Fittings: Provide zinc-coated carbon steel for steel fabrications, and stainless steel for aluminum and stainless steel fabrications, unless shown otherwise.

E. Pipe Sleeves

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1. Provide as follows:
 - a. Hot-dip galvanized, Schedule 40 steel pipe sleeves where shown for piping passing through concrete or masonry.
 - b. Holes drilled with rotary drill may be provided in lieu of sleeves in existing walls.
 - c. Provide a center flange for water stoppage on sleeves in exterior or water-bearing walls.
 - d. Provide a rubber caulking sealant or a modular mechanical unit to form a watertight seal in the annular space between pipes and sleeves.

PART 3 - EXECUTION

3.1 FABRICATION

- A. General:
 1. Exposed Surfaces Finish: Smooth, sharp, well-defined lines.
 2. Provide necessary rabbets, lugs, and brackets so work can be assembled in neat, substantial manner.
 3. Conceal fastenings where practical.
 4. Drill metalwork and countersink holes as required for attaching hardware or other materials.
 5. Fabricate materials as specified.
 6. Weld connections, except where bolting is directed.
 7. Methods of fabrication not otherwise specified or shown shall be adequate for stress and as approved.
 8. Grind exposed edges of welds smooth on walkways, guardrails, handrails, stairways, channel door frames, steel column bases and where shown.
 9. Round sharp edges to 1/8-inch minimum radius. Grind burrs, jagged edges, and surface defects smooth.
- B. Aluminum:
 1. Fabricate as shown, and in accordance with the Aluminum Association Standards and manufacturer's recommendations as approved.
 2. Grind smooth sheared edges exposed in finished work.

3.2 WELDING

- A. General
 1. Meet codes for Arc and Gas Welding in Building Construction of the AWS and AISC for techniques of welding employed, appearance, quality of welds made, and the methods of correcting defective work.
 2. Welding Surfaces: Free from loose scale, rust, grease, paint, and other foreign material, except mill scale which will withstand vigorous wire brushing may remain.
 3. A light film of linseed oil may likewise be disregarded.
 4. Do not weld when temperature of base metal is lower than zero degrees F.
 5. Finished members shall be true to line and free from twists.
 6. Prepare welds and adjacent areas such that there is:
 - a. No undercutting or reverse ridges on the weld bead.
 - b. No weld spatter on or adjacent to the weld or any other area to be painted.
 - c. No sharp peaks or ridges along the weld bead.
 7. Grind embedded pieces of electrode or wire flush with adjacent surface of weld bead.
- B. Welding Operators: As specified in PART 1, Article 1.3 QUALITY ASSURANCE.

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3.3 INSTALLATION

- A. Set units accurately in location, alignment, and elevation, level, plumb, true, and square, measured from established lines and levels. Brace or anchor temporarily in formwork where units are to be built into concrete, masonry, or similar construction.
- B. Anchor securely as shown or as required for the intended use, using concealed anchors wherever possible.
- C. Fit exposed edges accurately together to form tight, hairline joints. Do not weld, cut, or abrade the surfaces of galvanized or anodized units which are intended for bolted or screwed connections.
- D. Field Welding: Where field welding is necessary, grind joints smooth and touch-up the shop paint. Comply with the applicable provisions of AWS D1.1 for the procedures of manual shielded metal-arc welding, the appearance and quality of welds made, and the methods used in correcting welding.
- E. Field Coat all miscellaneous ferrous and steel metals per Specification Section 09900 - Painting, System 300.
- F. Where aluminum is in contact with dissimilar metals, or embedded in masonry or concrete, protect surfaces as specified in Section 09900 - Painting, System 305.

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SECTION 05610

ALUMINUM HANDRAILS AND RAILINGS

PART 1 - GENERAL

1.1 SCOPE

- A. This section covers the supply and installation of welded or non-welded mechanical construction aluminum handrails and guardrails.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings for the fabrication and erection of the handrails and guardrails. Include plans, elevations and details of sections and connections. Clearly show all field connections. Show anchorage and accessory items.
- B. Product Data: Submit copies of manufacturer's specifications, dimensions, anchor details, and installation instructions for manufactured products.

1.3 QUALITY ASSURANCE

- A. Reference Standards:
 - 1. Aluminum Associate (AA)
 - a. Aluminum Standards and Data
 - b. Specifications for Aluminum Structures
- B. Design Criteria:
 - 1. Fabricate units to support a live load of 20 pounds per linear foot and a non-concurrent load of 200 pounds at the top of the railing, in any direction.
 - 2. Expansion/Contraction:
 - a. Provide linear expansion joints at a maximum spacing of 20'-0" designed for 1/4" expansion and 1/4" contraction.
 - b. Provide expansion joints in handrail and railing systems where systems cross expansion joints in structure.
- C. Allowable Tolerances:
 - 1. Limit variation of cast-in-place inserts, sleeves and field-drilled anchor and fastener holes to the following:
 - a. Spacing: $\pm 3/8$ -inch.
 - b. Alignment: $\pm 1/4$ -inch.
 - c. Plumbness: $\pm 1/8$ -inch.
 - 2. Minimum Handrails and Railings Systems Plumb Criteria:
 - a. Limit variation of completed handrail and railing system alignment to 1/4-inch in 12' - 0" with posts set plumb to within 1/16-inch in 3 foot - 0 inches.
 - b. Align rails so variations from level for horizontal members and from parallel with rake of stairs and ramps for sloping members do not exceed 1/4-inch in 12' - 0 inches.
- D. Obtain all handrails and railings systems components and accessories from the same manufacturer.

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1.4 DELIVERY, STORAGE AND HANDLING

- A. Protect aluminum work from abuse, staining, or damage during shipment, storage, erection and installation.
- B. Store in a manner to prevent warping of materials.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Fabricate aluminum to conform to AA standards.
- B. Handrails and railings may be either of welded construction, or non-welded mechanical construction.

2.2 MANUFACTURERS AND PRODUCTS

- A. Golden Railings, Inc.; TCF Bolted System.
- B. Superior Aluminum Products; Series 800 Pipe Railing.
- C. Or Equal.

2.3 MATERIALS

- A. Rails and Posts:
 - 1. Conform to ASTM B221.
 - 2. 1-1/2" nominal diameter, minimum
 - 3. Provide Schedule 40 pipe minimum for rails and Schedule 80 pipe minimum for posts, unless conditions of detail and fabrication require heavier pipe weights to comply with performance criteria specified.
 - 4. All rail, posts and components shall be Aluminum Alloy 6005-T5 or 6063-T6
 - 5. Clear satin anodized finish, 0.7 mil minimum (AA-M10-C22-A41).
- B. Fittings and Accessories:
 - 1. Either weld rail and post components, or provide mechanical fittings to join rail and post components using bolted connections.
 - 2. Provide floor flanges where indicated
 - 3. Provide wall brackets with 3-inch minimum clearance between handrail and finished wall surface and as indicated for ladder rails.
 - 4. Fasteners and anchors shall be Type 304 stainless steel and of type as required by substrate
- C. Toeboard (Kick Plate):
 - 1. Extruded, beveled aluminum 4-inch height, aluminum alloy 6063-T6.
 - 2. Furnish required stainless steel clamps and fasteners for complete installation.
 - 3. Manufacturer/Product:
 - a. Crane Veyor Corp., Toeboard No. C43880 with splice plates and corner connectors.
 - b. Or Equal.

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- D. Weep Holes:
1. Fabricate joints, which will be exposed to the weather so as to exclude water.
 2. Provide 15/64-inch diameter weep holes at the lowest possible point on all handrail and railing systems posts.
 3. Provide pressure relief holes at closed ends of handrail and railing systems.

PART 3 - EXECUTION

3.1 GENERAL

- A. Conform to applicable AA standards.
- B. At locations where welds will be made (if applicable), the anodizing shall be ground off to ensure a proper weld is made. The weld shall then be ground smooth and burn marks removed. Completed welds shall be painted to match the anodizing of the pipe.
- C. Bituminous Coating:
1. Protect aluminum in contact with other metals, grout and concrete by a heavy brush coat of alkali-resistant bituminous coating or a non-porous tape or gasket.
 2. Coating is not required for aluminum in contact with stainless steel bolts.
 3. Apply bituminous coating at 15-mil minimum dry film thickness.
 4. Manufacturer/Product:
 - a. Carboline – Bitumastic No. 50
 - b. Tnemec – Series 46-465
 - c. Or Equal.

3.2 INSTALLATION

- A. Space posts at a maximum of 6'-0" on center, except when a different spacing is indicated on the Drawings.
- B. Install toe boards (kick plates) and anchor to each post with clamps and bolts. Allow 1/4-inch space between bottom of toe board and top of floor surface.
- C. Install handrail to walls with brackets spaced not greater than 5'-0" on center, except where otherwise indicated.
1. For connecting to concrete walls, use anchors as indicated.
 2. For connecting to hollow masonry walls, use toggle bolts having square heads.
- D. Cleaning: Clean all aluminum surfaces, after installation, free of smudges, stains, or other deleterious substances.
- E. Protect aluminum, after cleaning, with clear methacrylate lacquer coating.

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SECTION 05620

GRATING AND CHECKERED PLATE

PART 1 - GENERAL

1.1 SCOPE

- A. Furnish all materials, labor and equipment required to provide all gratings and floor plates in accordance with the Contract Documents.

1.2 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings for the fabrication and erection of all gratings and checkered plate specified herein. Include plans, elevations and details of sections and connections.
- B. Setting drawings and templates for location and installation of anchorage devices.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Grating, including support frames, fastenings and all necessary appurtenances for a complete installation shall be furnished as indicated on the Drawings.
- B. All exposed bearing ends of grating shall be enclosed in a perimeter band of the same dimensions and material as the main bars, including ends at all cutouts.
- C. Grating shall be fabricated into easily removable sections and shall be fastened at each corner and as required with fasteners provided by the grating manufacturer. No fasteners shall be permitted to project above the walking surface.
- D. Grating and Checkered Plate shall be designed for a loading of 150 psf, with a maximum deflection of $L/360$, unless otherwise required by the Drawings.
- E. Minimum grating depth shall be as shown on the drawings. Space bearing bars at 1-3/16 inch center to center. Band all edges with minimum 3/16 inch thick banding bar.
- F. Openings in Grating:
 - 1. Cut gratings for penetrations as indicated and as required for installing and operating equipment. Layout grating units to allow grating removal without disturbing items penetrating grating.
 - 2. At openings, notches, and cuts in grating, provide banding of same material and size as bearing bars, unless otherwise indicated. Weld band to each bearing bar.
- G. Notching of bearing bars at supports to maintain elevations will not be permitted.

2.2 ALUMINUM GRATING

- A. I-bar type consisting of extruded bearing bars positioned and locked by cross bars.

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- B. Material:
 - 1. All supports, cross members, etc. shall be aluminum.
 - 2. Bearing Bars: Alloy 6061-T6 or Alloy 6063-T6, conforming to ASTM B221
 - 3. Cross Bars or Bent Connecting Bars: Alloy conforming to either ASTM B221 or ASTM B210.
- C. Plank clips for grating hold-downs or other required attachments shall be aluminum or Type 304 stainless steel.
- D. Bolts shall be stainless steel Type 316. Where stainless steel bolts are in contact with dissimilar metals provide insulating sleeves and phenolic washers to electrically isolate the bolts and nuts.
- E. Manufacturer/Product:
 - 1. Grating Pacific, "I-Bar 19-SG-4"
 - 2. Borden Grating, "Squeeze Locked Grating"
 - 3. Ohio Grating, "I-Bar 19-SG-4"
 - 4. Or Equal.

2.3 HEAVY DUTY GALVANIZED STEEL GRATING

- A. Welded rectangular design (spaced approximately 1-3/16 x 4 inches on center) designed to support heavy rolling and static loads.
- B. Grating Size and Design:
 - 1. Main bearing bars thickness and depth as indicated on the Drawings.
 - 2. Cross bars to be 5/16" twisted steel and resistance welded at right angles to the main bars, unless noted otherwise on the Drawings.
 - 3. Band all open ends.
 - 4. Hot dip galvanize after fabrication.
- C. Material:
 - 1. Galvanized steel: ASTM A36, hot dipped galvanized per ASTM A123 after fabrication
- D. Manufacturer/Product:
 - 1. Grating Pacific W-19-4
 - 2. Ohio Grating 19-W-4
 - 3. Or Equal.

2.4 CHECKERED PLATE

- A. Minimum thickness: As shown on the drawings
- B. Material:
 - 1. Plate to conform to ASTM B209 with anodized finish.
 - 2. Stainless steel support angles: Type 316 unless otherwise shown.
- C. Raised Pattern Floor Plate: Provide pattern standard with the manufacturer to provide non-slip surface.
- D. Plates shall be stiffened by angles welded to the underside as shown on the drawings.
- E. Lifting Handles:

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1. Each checkered plate shall be provided with four lifting handles, as shown on the drawings.
- F. Maximum weight of each checkered plate shall be 150 pounds.

PART 3 - EXECUTION

3.1 FABRICATION

- A. All measurements and dimensions shall be based on field conditions and shall be verified by the CONTRACTOR prior to fabrication. Such verification shall include coordination with adjacent work.
- B. All fabricated work shall be shop-fitted together as much as practicable, and delivered to the field, complete and ready for installation. All miscellaneous items such as stiffeners, fillets, connections, brackets and other details necessary for a complete installation shall be provided.
- C. All work shall be fabricated and installed in a manner that will provide for expansion and contraction, prevent shearing of bolts, screws, and other fastenings, ensure rigidity, and provide a close fit of sections.
- D. Finished members shall conform to the lines, angles and curves shown on the Drawings and shall be free from distortions of any kind.
- E. All shearings shall be neat and accurate, with parts exposed to view neatly finished. Flame cutting is allowed only when performed utilizing a machine.
- F. All shop connections shall be welded unless otherwise indicated on the Drawings or specified herein. All fastenings shall be concealed where practicable.

3.2 INSTALLATION

- A. Assembly and installation of fabricated system components shall be performed in strict accordance with manufacturer's recommendations.
- B. All gratings shall be erected square, plumb and true, accurately fitted, adequately anchored in place, and set a proper elevations and positions.

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SECTION 07200
ROOF INSULATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies requirements for building insulation for roofs and associated accessories to result in complete assemblies.

1.2 SUBMITTALS

- A. Shop Drawings:
 - 1. Manufacturer's specifications and installation instructions for type of insulation required. Include data substantiating that the materials comply with specified requirements.
 - 2. Complete layout of all roof insulation showing sizes, placement and number of courses.
 - 3. Manufacturer's specifications and installation instructions showing the sizes and layout of the mechanical fasteners.

1.3 DELIVERY, HANDLING, AND STORAGE

- A. Package and protect during shipment.
- B. Inspect for damage, dampness, and wet storage stains upon delivery to the Work site.
- C. Remove and replace damaged or permanently stained materials that cannot be restored to like-new condition.
- D. Carefully handle to avoid damage to surfaces, edges, and ends.
- E. Do not open packages until ready for use.
- F. Store materials in dry, weathertight, ventilated areas until immediately prior to installation.

1.4 COORDINATION WITH OTHER ROOFING SYSTEM COMPONENTS

- A. Roof insulation shall be part of a coordinated, complete roof system which includes the roofing system and all other roofing system components.
- B. Roof insulation manufacturer shall certify that the roof insulation provided is completely compatible with the roofing system specified and all other roofing system components.

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PART 2 - PRODUCTS

2.1 EXTRUDED POLYSTYRENE RIGID ROOF INSULATION

- A. Composed of extruded polystyrene (XPS) and water-resistant binders formed into rigid, non-combustible boards specifically designed for roofing applications with installation directly on structural steel decks beneath a sheet membrane or a standing seam metal roof.
- B. Size: 48-inches by 96-inches.
- C. Thickness:
 - 1. Base Layer: Thickness as shown in the Drawings.
 - 2. Tapered Top Layer: Varies to provide drainage.
- D. Provide the following physical properties:
 - 1. Thermal Resistance, R-Value, ASTM C518: 5.0 hr*ft²*°F/BTU/in.
 - 2. Water Vapor Permeance, ASTM E96: 1.5 maximum perm.
 - 3. Compressive Strength, ASTM D1621: 25 psi.
- E. Provide tapered and non-tapered boards as required to produce a minimum slope to drain of 1/4-inch per foot.
- F. Provide custom pre-cut factory-formed corners, crickets, hips and valleys.
- G. Product and Manufacturer: Provide one of the following:
 - 1. STYROFOAM Brand DECKMATE Plus, by Dow Building Solutions.
 - 2. THERMAPINK 25 by Owens-Corning Fiberglass Corporation.
 - 3. Or equal.

2.2 ROOF INSULATION COVER BOARD

- A. Fiberglass-mat faced roof cover boards.
- B. Provide the following physical properties:
 - 1. Size: 48-inches by 96-inches, 1/2-inch thick
 - 2. Weight: 1.95 psf
 - 3. Water Adsorption, ASTM C1177: < 10%
 - 4. Compressive Strength, ASTM C472: 900 psi
- C. Product and Manufacturer: Provide one of the following:
 - 1. DensDeck Prime by Georgia-Pacific
 - 2. SecurRock by USG
 - 3. Or approved equal

2.3 MISCELLANEOUS MATERIALS:

- A. Mechanical Fasteners: Screw-type 6-gauge minimum self-drilling galvanized steel with sufficient length and quantity to securely anchor system into place and to withstand all super-imposed loads. Provide 1 1/2" diameter disc washers.
- B. Joint Tape: 6-inch wide glass fiber tape.

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PART 3 - EXECUTION

3.1 SEQUENCING

- A. Proceed with and complete the Work only when materials, equipment and tradesmen required for the installation of the roofing membrane over the roof insulation are at the site and are ready to follow with this Work immediately (same day) behind the roof insulation Work.
- B. Do not install any more roof insulation each day than can be covered with complete elastic sheet roofing system by the end of that working day.

3.2 INSPECTION

- A. CONTRACTOR and his installer shall examine the substrate and the conditions under which the insulation Work is to be performed, and notify ENGINEER, in writing, of any unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.3 INSTALLATION

- A. General:
 - 1. Tapered glass fiber board roof insulation system shall be designed and totally precut at the factory.
 - 2. Comply with manufacturer's instructions for the particular conditions of installation in each case. If printed instructions are not available or do not apply to the project conditions, consult the manufacturer's technical representative for specific recommendations before proceeding with the Work.
 - 3. Where skylight or other roof openings are required, provide crickets shaped from tapered glass fiber board to direct roof drainage around opening and too roof drain.
 - 4. Extend roof insulations full thickness, as shown and specified, over entire surface to be insulated.
 - 5. Cut and fit roof insulation Work tightly around obstructions, and fill voids with insulation. Keep back 1/4-inch for all vertical flashings.
- B. Laying Roof Insulation Units:
 - 1. Apply rigid glass fiber board roof insulation to the thickness shown in the Drawings. Provide tapered rigid board roof insulation at crickets and sloped areas shown to provide 1/4-inch per foot positive slope to drains.
 - 2. Mechanically fasten insulation boards to substrate at the UL required spacing.
 - 3. Stagger end joints and stagger joints between courses where two or more courses are used.
 - 4. Lay insulation boards with edge in moderate contact without forcing.

3.4 PERFORMANCE

- A. Roof insulation Work shall withstand the uplift forces of wind, as defined by the Roofing System Guarantee. Refer to the roofing system specification. Failures of the roof insulation Work, or within the insulation, shall be considered failures of materials or workmanship under the Roofing System Guarantee.

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**SECTION 07211
BUILDING INSULATION**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
1. CONTRACTOR shall provide all labor, materials, tools, equipment and incidentals as shown, specified and required to furnish and install all building insulation.
 2. Extent of each type of building insulation is shown.
 3. Types of products required include the following:
 - a. Glass fiber batt insulation.
 - b. Miscellaneous materials and accessories.
- B. Coordination:
1. Review installation procedures under other Sections and coordinate the installation of items that must be installed with the building insulations.
 2. Notify other contractors in advance of the installation of the building insulations to provide other contractors with sufficient time for the installation of items included in their contracts that must be installed before the building insulations.

1.2 QUALITY ASSURANCE

- A. Manufacturer/Installer Qualifications:
1. Engage single installers for each type of building insulation who are skilled, trained and have a record of successful experience in the application of each product and who have a successful record of performing work in accordance with the recommendations and requirements of the manufacturer or who can submit evidence in writing of being acceptable to the manufacturer for production of guaranteed construction and who agree to employ only tradesmen with specific skill and successful experience in each type of Work.
- B. Source Quality Control:
1. Obtain building insulations, requiring a hydrochlorofluorocarbon blowing agent, from manufacturers who manufacture specified insulation using a blowing agent acceptable for use until the year 2020 complying with the requirements of the Copenhagen Amendments to the Montreal Protocol in all ways.
- C. Performance Criteria:
1. Thermal Conductivity: The thicknesses shown are for the thermal conductivity, k-value at 75 F, specified for each material.
 2. Provide adjusted thicknesses, based on thicknesses shown or specified for building insulations, as required to comply with required thermal resistances for use of material having a different thermal conductivity.

- D. Requirements of Regulatory Agencies: Comply with fire-resistance and flammability ratings as shown and specified; and comply with code interpretations by governing authorities.
- E. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified:
1. ASTM C 165, Measuring Compressive Properties of Thermal Insulations, Test Method for.
 2. ASTM C 177, Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus, Standard Test Methods for.
 3. ASTM C 203, Breaking Load and Flexural Properties of Block-Type Thermal Insulation, Test Method for.
 4. ASTM C 236, Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box, Standard Test Method for.
 5. ASTM C 272, Water Absorption of Core Materials for Structural Sandwich Constructions, Standard Test Method for.
 6. ASTM C 303, Dimensions and Density of Preformed Block-Type Thermal Insulation, Standard Test Method for.
 7. ASTM C 518, Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of Heat Flow Meter Apparatus, Standard Test Method for.
 8. ASTM C 520, Density of Granular Loose Fill Insulations, Standard Test Method for.
 9. ASTM C 531, Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Monolithic Surfacing, and Polymer Concrete, Standard Test Method for.
 10. ASTM C 549, Perlite Loose Fill Insulation, Standard Specification for.
 11. ASTM C 553, Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications, Specification for.
 12. ASTM C 578, Rigid, Cellular Polystyrene Thermal Insulation, Standard Specification for.
 13. ASTM C 612, Mineral Fiber Block and Board Thermal Insulation, Specification for.
 14. ASTM C 665, Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing, Standard Specification for.
 15. ASTM C 764, Mineral Fiber Loose-Fill Thermal Insulation, Specification for.
 16. ASTM D 696, Coefficient of Linear Thermal Expansion of Plastics between -30 Degrees C and 30 Degrees C, Standard Test Method for.
 17. ASTM D 1621, Compressive Properties of Rigid Cellular Plastics, Standard Test Method for.
 18. ASTM D 1622, Apparent Density of Rigid Cellular Plastics, Standard Test Method for.
 19. ASTM D 2126, Response of Rigid Cellular Plastics to Thermal and Humid Aging, Standard Test Method for.
 20. ASTM D 2842, Water Absorption of Rigid Cellular Plastics, Standard Test Method for.
 21. ASTM E 84, Surface Burning Characteristics of Building Materials, Standard Test Method for.
 22. ASTM E 96, Water Vapor Transmission of Materials in Sheet Form, Standard Test Method for.

23. ASTM E 119, Standard Methods of Fire Tests of Building Construction and Materials.
24. Underwriters Laboratories, Incorporated, UL 1479, Fire Tests of Through-Penetration Firestops.

F. Codes: Comply with the applicable requirements of the 2016 California Building Code for types of building insulation work specified.

1.3 PRODUCT DELIVERY STORAGE AND HANDLING

A. Delivery of Materials:

1. Deliver building insulation products in manufacturer's original, unopened, factory-sealed containers, bearing manufacturer's name and labels, accurately representing container contents as shown on approved Shop Drawings.
2. Damaged materials shall be permanently removed from Site by CONTRACTOR.
3. Do not deliver insulation materials to the Site before the time of installation.
4. Deliver materials in sufficient quantities to allow uninterrupted continuity of the Work.

B. Storage of Materials:

1. Store materials in original, undamaged containers with manufacturer's labels and seals intact.
2. Store all materials in a dry, enclosed area, off the ground and away from all possible contact with water, ice or snow.
3. Prevent damage to materials during storage, primarily by minimizing the amount of time they are stored on-Site before being incorporated into construction systems. Store only sufficient quantity of building insulation materials on-Site as necessary for the continuous advancement of the Work without causing delay.

C. Handling of Materials:

1. Handle materials carefully in order to avoid damage and breakage or compressing of boards to less than their specified thickness, or other damage.
2. Do not open containers, or expose materials to detrimental conditions or physical damage. Materials which are so exposed shall be removed from the Site and shall not be incorporated into the Work. If incorporated into the Work they shall be removed at no additional expense to OWNER.
3. Handle materials in a manner which prevents inclusion of foreign materials.
4. Do not open packages or containers until all necessary preparatory Work is complete and installation will begin immediately.

1.4 JOB CONDITIONS

A. Protection:

1. Do not allow building insulation materials to become wet or soiled, or covered with ice or snow. Provide continuous protection of materials against damage, wetting and moisture absorption primarily by storing materials under cover and above ground and away from all other construction traffic.
2. Protect foam plastic building insulation from exposure to sunlight.
3. Do not allow building insulations to come into contact with welding operations or other fire or ignition sources.

4. Do not overload the building structure or damage in-place construction system with the weight of stored materials or use of equipment.
5. Protect materials against damage by construction activities.

B. Scheduling:

1. Proceed with building insulation Work only when preceding Work is ready to receive the Work of this Section.
2. Proceed with the building insulation and associated Work only after curbs, blocking, substrate board, nailer strips, vents, drains and other projections through the substrates have been installed, and when the substrate construction and framing of openings is complete.
3. Proceed with and complete the Work only when materials, equipment and tradesmen required for the installation of the building insulation and backfilling operations are at the Site and are ready to follow with the Work in a manner which will not leave the Work vulnerable to damage or deterioration.
4. Do not advance the installation of building insulation materials beyond that which is necessary for proper sequencing of the Work. Do not advance Work when there is no proper and secure protection from damaging weather and construction activities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Glass Fiber Insulations: Provide the following types:

1. General: Provide insulations formed from glass fibers and resinous binders fabricated into flexible blankets, semi-rigid and rigid sheets complying with ASTM C665, ASTM C553, and ASTM C612.
2. Unfaced Batt Insulation: Provide unfaced thermal batt insulation complying with ASTM C665, Type I.
 - a. Physical Properties.
 - 1) R-value, ASTM C518: Reference Drawings. If not specified on the Drawings, provide the maximum R-value corresponding to the framing member thickness.
 - 2) Density, provide standard density unless high-density is required to achieve the specified R-value.
 - b. Thickness: Match the framing thickness shown on the Drawings.
 - c. Width: 16-inches, or as required based on framing member spacing.
 - d. Product and Manufacturer: Provide one of the following:
 - 1) Thermal Batt Insulation by Owens-Corning Fiberglas Corporation.
 - 2) Thermal Batt Insulation by CertainTeed.
 - 3) Thermal Batt Insulation by Johns Manville.
 - 4) Or equal.

B. Miscellaneous Materials and Accessories: Provide the following:

1. Mechanical Anchors: Type and size shown or, if not shown, as recommended by the insulation manufacturer for the type of application shown and condition of substrate.
2. Adhesive Tapes: Complete selection of insulation manufacturer's recommended taping materials.

PART 3 - EXECUTION

3.1 INSPECTION

- A. CONTRACTOR and his installer shall examine the substrate and the conditions under which the building insulation Work is to be performed, and notify ENGINEER in writing of unsatisfactory conditions. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 SUBSTRATE PREPARATION

- A. Verify that surfaces to receive building insulation are clean of all debris, dirt and other contamination before installation begins in any area.

3.3 INSTALLATION

- A. General:
 - 1. Comply with manufacturer's instructions for the particular conditions of installation in each case. If printed instructions are not available or do not apply to Site conditions, submit to ENGINEER specific recommendations from manufacturer for approval before proceeding with the Work.
 - 2. Extend all insulations full thickness over entire surface to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation.
 - 3. Apply the number of layers of insulation specified, each of the required thickness, or the required thickness to provide the thermal value indicated, unless otherwise shown or required, to make up the total thickness.
- B. Batt-Type Insulation:
 - 1. Install batt insulation above ceilings and between studs and rafters as shown. Extend insulation full width, length and height in all areas shown.
 - 2. Fit tightly around obstructions to form a uniform insulated barrier.

3.4 PROTECTION

- A. All components of the Work shall be protected from detrimental weather conditions and until construction operations including, but not limited to, backfilling, framing and sheathing, aluminum siding and concrete unit masonry Work, is completed and acceptable to ENGINEER.
- B. Work which cannot for reasons acceptable to ENGINEER be covered with complete construction system before onset of weather detrimental to the Work, shall be completely covered and protected in such a manner as to deflect precipitation from the installation without damaging adjacent Work.
- C. Protect building insulations from all damage and abuse from all other contractors and installers involved on the Site until final acceptance by OWNER.

3.5 FIELD QUALITY CONTROL

- A. Submit results of all testing to ENGINEER along with recommendations for remedial Work. Do not delay job progress. Coordinate the submission of tests

and remedial Work in a manner which does not impact the acceptability of substrate and which permits expeditious completion of finishing Work.

3.6 ADJUSTMENT AND CLEANING

- A. System components which are dislodged, damaged, expanded, broken, penetrated, or crushed by subsequent installation operations or damaged by detrimental weather shall be immediately replaced with undamaged material in compliance with the Specifications and properly protected as specified.
- B. Only the original installer shall repair or replace deteriorated or defective Work.

3.7 INSPECTION AND ACCEPTANCE

- A. Do not allow construction traffic which is not associated with the installation of building insulation in the area of Work. Protect the area from access by other installers and contractors until the Work of this Section has been incorporated into finished construction systems.
- B. Building insulations which have become wet, damaged, or deteriorated shall be promptly removed from the Site and replaced with materials meeting the requirements of this Specification.

+ + END OF SECTION + +

SECTION 07320

STANDING SEAM METAL ROOF

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: This Section applies to design, manufacture and installation of standing seam metal roof paneling, soffit panels and associated materials.

1.2 QUALITY ASSURANCE

A. References

1. American Society for Testing and Materials (ASTM)
 - a. ASTM A653: Steel Sheet, Zinc-Coated by the Hot Dip Process
 - b. ASTM A792: Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot Dip Process
 - c. ASTM B209: Aluminum and Aluminum Alloy Sheet and Plate
2. Underwriters Laboratory
 - a. UL Building Materials Directory
3. Sheet Metal and Air Condition Contractors National Association, Inc. (SMACNA)
 - a. SMACNA Architectural Sheet Metal Manual, 1993 Edition
4. American Iron and Steel Institute (AISI)
 - a. AISI Cold Formed Steel Design Manual
5. Aluminum Association
 - a. Aluminum Design Manual
6. Metal Construction Association (MCA)
 - a. Preformed Metal Wall Guidelines
7. Code References:
 - a. ASCE 7, Minimum Loads for Buildings and Other Structures
 - b. IBC, International Building Code

B. Experience:

1. Manufacturer shall have a minimum of ten (10) years experience in manufacturing standing seam metal roofing.
2. Panel installer shall have a minimum of two (2) years experience in the installation of standing seam metal roofing and shall show evidence of successful completion of at least three (3) projects of similar size, scope, and complexity.

1.3 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings showing roof plan with layout of panels, clips, clip attachment, underlayment and sections of each flashing/trim condition for approval prior to fabrication. Drawings shall contain material type, metal thickness and finish. Drawings shall distinguish between factory and field fabrication.
- B. Product Data: Submit manufacturer's specifications, standard profile sheet, product data brochure and finish warranty.

- C. Samples:
1. Submit sample 12" long x full panel width showing proposed metal gauge, seam profile and specified finish.
 2. Submit manufacturer's standard colors for OWNER's selection. If design or bid documents specify a color, submit color specified.
- D. Test Reports: Submit the test reports prepared by Underwriters Laboratory indicating wind uplift rating of the proposed roof system. The manufacturer must be listed by name in the UL Directory.
- E. Certification: Submit manufacturer's certification that materials and finishes meet specification requirements.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Panels and flashings shall be protected and properly packaged to protect against transportation damage in transit to the jobsite.
- B. Upon delivery, exercise care in unloading, stacking, moving, storing and erecting panels and flashings to prevent twisting, bending, scratching or denting.
- C. Store panels and flashings in a safe, dry environment under a waterproof covering to prevent water damage. Allow adequate ventilation to prevent condensation. Panels and flashings with strippable film shall not be stored in direct sunlight.
- D. Upon installation immediately remove strippable film from panels and flashings. Protect panels and flashings from foot traffic and from all other trades.

1.5 WARRANTY

- A. Standing seam metal roof manufacturer shall provide a twenty (20) year warranty on the paint finish covering chalking, cracking, checking, chipping, blistering, peeling, flaking, and fading.
- B. Applicator shall furnish written warranty for a two (2) year period from date of substantial completion of building covering repairs required to maintain roof and flashings in watertight condition.

PART 2 - PRODUCTS

2.1 SERVICE CONDITIONS AND PERFORMANCE

- A. System shall be designed to withstand service conditions described in 01610 – General Equipment Requirements and be in compliance with all applicable codes and regulations.

2.2 STANDING SEAM METAL ROOFING

A. Roof Panels:

1. Performance Requirements: Provide factory formed, prefinished, concealed clip structural standing seam metal roof system that has been pretested and certified by manufacturer to comply with specified requirements under installed conditions.
2. Roof system shall meet the wind uplift test requirements in accordance with UL 580 Class 90 when the panels are attached to a substructure meeting the assembly requirements of UL 580.
3. Structural Requirements: Engineer panels for structural properties in accordance with the latest edition of American Iron and Steel Institute's *Cold Formed Steel Design Manual* using "effective width" concept and Aluminum Association's *Aluminum Design Manual*.
4. Panels shall be constructed from 24 gauge, Grade 50 (50 ksi yield strength) structural steel with AZ50 (0.50 oz./ft.²) aluminum-zinc alloy coating, both conforming to ASTM A792.
5. Each panel shall be formed with a 1-1/2" to 2-1/2" seam height.
6. Panel width will be between 12- and 18-inches from seam to seam. Between seams, each panel shall have two or more equally spaced ridges, or stiffeners running parallel with seams.
7. Each panel shall be designed to be screwed to the roof substrate, then have the adjacent panel mechanically seamed with a field-operated, electric- seaming machine provided by the manufacturer in such a way that all screws are concealed.
8. Roof panels shall use a standard UL 90 one-piece roof clip allowing for thermal movement of the panel system.
9. Panels shall be designed for use on roofs with pitch as shallow as 2-inch per foot
10. The panel system shall be a true standing seam shape requiring no trapezoidal foam closures, plugs, or fillers at eaves.
11. Texture: panels shall be smooth or have striations to eliminate oil canning potential.

B. Underlayment:

1. Ice and Water Shield Waterproofing Membrane: 40 mil self-adhered roofing underlayment meeting ASTM E96.

C. Flashing, Roof Jacks, and Trim

1. All flashing, roof jacks, and trim shall be of the same material, gauge, finish, and color as the roof panels and fabricated in accordance with standard SMACNA procedure and details.
2. Provide transition rib covers where roofing changes pitch or Z-closure made from the same material.
3. Provide rake and eave trim at the roof perimeter.
4. Provide roof jacks at all roof penetrations.
5. Fabricate gutters and downspouts in the same gauge, material, finish and color as the roof panels.
6. Flashings shall be designed and installed to allow thermal expansion of the roofing system.

D. Closures:

1. Ridge and hip closures shall be protected and supported by a formed metal closure manufactured from the same material, color and finish as the panels.
2. Metal closures shall be factory fabricated and field-cut as needed.

E. Finish:

1. Metal Preparation: all metal shall have the surfaces carefully prepared for painting on a continuous process coil coating line by alkali cleaning, hot water rinsing, application of chemical conversion coating, cold water rinsing, sealing with an acid rinse, and thorough drying.
2. Prime Coating: a base coat of epoxy paint, specifically formulated to interact with the top-coat, shall be applied to the prepared surfaces by roll coating to a dry film thickness of 0.20 ± 0.05 mils. This prime coat shall be oven cured prior to application of finish coat.
3. Exterior Coating: a Kynar® 500/Hylar® 5000 finish coating shall be applied over the primer by roll coating to a dry film thickness of 0.80 ± 0.05 mils for a total dry film thickness of 1.00 ± 0.10 . This finish coating shall be oven-cured.
4. Interior Finish Coating: a washcoat shall be applied on the reverse side over the primer by roll coating to a dry film thickness of 0.30 ± 0.05 mils for a total dry film thickness of 0.50 ± 0.10 mils. The washcoat shall be oven-cured.
5. Color: Color shall be as noted on Drawings, or as selected by OWNER.

F. Fasteners:

1. Clips to Substrate: screws shall be #10 diameter, self-tapping type, zinc-plated steel, with Phillips style pancake head.
2. Flashings to Panels: exposed screws shall be zinc plated with a #14 x 1" combination steel and neoprene washer, color to match panel.

G. Sealants:

1. Shall not contain oil, asbestos or asphalt.
2. Field applied panel end sealant shall be mastic tape sealant.
3. Exposed sealant shall be one-part polyurethane joint sealant, color to coordinate with roof panels.

H. Product and Manufacturer:

1. ATAS International: Field-Lok
2. Fabral: Stand'N Seam
3. MBCI: SuperLok
4. Or approved equal.

2.3 METAL SOFFIT PANELS

- A. General: Provide factory-formed metal soffit panels designed to be field-assembled by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fastening in side laps; included accessories for a complete, weathertight installation.

- B. Flush Profile: Perforated panels formed with vertical panel edges and intermediate stiffening ribs symmetrically spaced at 4-inch nominal on center between panel edges with flush joint between panels.
 - 1. Material: 22-gauge minimum metal thickness.
 - 2. Finish: Fluoropolymer.
 - 3. Color: As selected from manufacturer's standard color range.
 - 4. Sidelap Sealant: Factory apply sealant, except where no sealant is required. Field-applied sealant is not acceptable.
 - 5. Trims and Flashings: Material, metal thickness, and finish to match panels. Provide profile closures at the ends of panels as required.
 - 6. Fasteners: Concealed fasteners per manufacturer's recommendation.
 - 7. Panel Coverage: 12 inches.
Panel Height: 1 inch.
- C. Manufacturer and Product:
 - 1. AEP Span: Prestige Series
 - 2. McElroy Metal: Marquee-Lok
 - 3. MBCI: Artisan Series
 - 4. Or approved equal.

2.4 FABRICATION

- A. Field dimensions shall be taken prior to fabrication to verify jobsite conditions.
- B. Roof panels shall be formed in continuous lengths. End-laps will not be allowed.
- C. Panels shall be roll formed on a stationary industrial type rolling mill. Portable roll formers, rented or owned by the installer, are not acceptable.
- D. Fabricate flashings from the same material as the roof system.
- E. Follow tolerances in MCA's Preformed Metal Wall Guidelines.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine roof deck for conditions that would prevent proper application of roofing. Immediately notify Contractor and Engineer of defects, and do not proceed with roofing operation until defects are corrected.
- B. Verify that surfaces to receive roofing are smooth, sound, clean and dry.

C. Layout Pattern:

1. Lay out to place seams equidistant from corners and aligned with seams on other side of hip or ridge.
2. Coordinate Work of this section with flashing, trim, and other construction to provide a permanently leakproof, secure, and noncorroding installation.

3.2 INSTALLATION

A. Conform to manufacturers written instructions, the standard set forth in the SMACNA architectural sheet metal manuals and the approved shop drawings detailed for the project.

B. Roof Underlayment:

1. Provide a double layer of underlayment.
2. Provide 18" wide starter strip of underlayment at the eaves, followed by a 36" wide strip of underlayment which completely overlaps the 18" wide starter strip.
3. Continue with consecutive 36" wide strips of underlayment, overlapping 19" at each course, shingle-style.
4. Total of a double layer of underlayment plus 2" overlap at the horizontal seams is required.
5. Overlap vertical seams 6" and minimize their occurrence.
6. Provide ice and water shield membrane at all valley and eave conditions as well as any area at less than a 3:12 slope.

C. Standing Seam Roof Panel Installation:

1. Install panels straight with the seams parallel, conforming to the design as indicated.
2. Install panel system so it is watertight, without waves, warps, buckles or distortions, and allow for thermal movement considerations.
3. Abrasive devices shall not be used to cut on or near the roof panel system.
4. Apply sealant tape or caulking as necessary at flashing and panel joints to prevent water penetration.
5. Remove any strippable film immediately upon exposure to direct sunlight.

D. Metal Soffit Panel Installation:

1. Install panels straight over the full width of soffit.
2. Install perpendicular to support framing.
3. Flash and seal panels with weather closures where metal soffit panels meet walls and at perimeter of openings and joints.
4. Align soffit panel joints with roof or wall panel joints where occurs.
5. Install trims, closures, flashings, and sealants in accordance with the manufacturer's recommended details.

3.3 CLEANING

- A. Dispose of any excess materials and debris from jobsite.
- B. Remove filings, grease, stains, marks, or excess sealants from roof panel system to prevent staining.
- C. Protect work from damage from other trades until final acceptance.
- D. Replace metal roof or soffit panels that have been damaged or have deteriorated beyond successful repair.

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SECTION 07600

METAL FLASHING, GUTTERS, DOWNSPOUTS AND OTHER ROOFING SPECIALTIES

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings: Provide documentation showing the gutter, gutter guard, and downspout profiles, dimensions and material properties. Show joints, types and location of fasteners, and special shapes.

1.2 DELIVERY, HANDLING, AND STORAGE

- A. Package and protect during shipment.
- B. Inspect for damage, dampness, and wet storage stains upon delivery to the Work site.
- C. Remove and replace damaged or permanently stained materials that cannot be restored to like-new condition.
- D. Carefully handle to avoid damage to surfaces, edges, and ends.
- E. Do not open packages until ready for use.
- F. Store materials in dry, weathertight, ventilated areas until immediately prior to installation.

PART 2 - PRODUCTS

2.1 METAL

- A. Galvanized Sheet Steel: ASTM A653, G90, commercial quality copper bearing steel, thickness 24 gauge, unless otherwise shown.

2.2 ANCILLARY MATERIALS

- A. Solder: ASTM B32, alloy composition Sn 50.
- B. Soldering Flux: ASTM B32, Type RA.
- C. Sealer Tape: Polyisobutylene sealer tape as specified in Section 07900, JOINT SEALANTS.
- D. Isolation Paint: As specified in Section 09900, PAINTING AND PROTECTIVE COATINGS, System No. 27.
- E. Isolation Tape: Butyl or polyisobutylene, internally reinforced, or 20-mil thick minimum polyester.
- F. Plastic Roof Cement: ASTM D4586, Type II.

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- G. Fasteners:
 - 1. For Galvanized Steelwork: Steel, galvanized per ASTM A153 or stainless steel fasteners.
 - 2. Nails: Roofing nailhead, 10-gauge spiral or ring shank, lengths as required to penetrate wood at least 3/4-inch.
- H. Gutter Guard (Cover): Provide low profile perforated metal gutter guards compatible with the gutter style supplied. Gutter guards shall be riveted or screwed to the lip of the gutter.

2.3 FABRICATION OF FLASHING

- A. Field measure prior to fabrication.
- B. Fabricate in accordance with SMACNA Architectural Sheet Metal Manual.
- C. Accurately form flashings to shapes shown and detailed, with angles and lines in true alignment.
- D. Form angles true to line and surfaces free of waves and buckles.
- E. Form bends to 1/16-inch inside radius.
- F. Hem exposed edges.
- G. Reinforcements and Supports: Provide same material as flashing unless other material is shown. Steel, where shown or required, shall be galvanized or stainless.
- H. Rigid Joints and Seams: Make mechanically strong. Solder galvanized and stainless steel metal joints. Do not use solder to transmit stress.
- I. At exposed ends of counterflashing furnish weathertight closures.
- J. Neutralize soldering flux.
- K. Solvent clean sheet metal. Surfaces to be in contact with roofing or otherwise concealed shall be coated with isolation paint.

2.4 FABRICATION OF DOWNSPOUTS AND GUTTERS

- A. Fabricate in accordance with SMACNA Architectural Sheet Metal Manual.
- B. Form downspouts and gutters in maximum lengths as practicable to sizes and shapes indicated on Drawings or to field-fit the locations shown on the drawings.
- C. Telescope end joints 1-1/2 inches and lock longitudinal joints of downspouts.
- D. Furnish elbows at bottom where downspouts empty onto splash blocks.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Flashing:
1. Coordinate flashing Work with roofing Work for weathertight and watertight assembly.
 2. Isolate metal from wood and concrete and from dissimilar metal with isolation tape or two coats of isolation paint.
 3. Use only stainless steel fasteners to connect isolated dissimilar metals.
 4. Set flanges of flashings and roof accessories on continuous sealer tape or in plastic roof cement on top of deck. Nail flanges through sealer tape and at 3-inch maximum spacing. Touch up isolation paint on flanges.
 5. Joints, Fastenings, Reinforcements, and Supports: Sized and located as required to preclude distortion or displacement due to thermal expansion and contraction.
 6. Provide continuous holddown clips at counterflashing and edge drips.
 7. Conceal fastenings wherever possible.
 8. Set flashing and sheet metal to straight, true lines with exposed faces aligned in proper plane without bulges or waves.
- B. Downspouts and Gutters: Anchor downspouts to wall with straps of same material as downspouts. Install gutters, scuppers, and conductor heads as indicated on Drawings.

3.2 FINISH

- A. Exposed Surfaces of Flashing and Sheet Metalwork: Free of dents, scratches, abrasions, or other visible defects, and clean and ready for painting where applicable.

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SECTION 07900

JOINT SEALANTS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Product Data: Surface preparation and installation instructions. Indicate where each product is proposed to be used. Provide sealant certified to NSF/ANSI Standard 61 where sealant is in direct contact with potable water.
- B. Samples: Material proposed for use showing color range available.
- C. Quality Control Submittals:
 - 1. Applicator Qualification: Documentation showing minimum of 5 years' experience installing sealants in projects of similar scope.
 - 2. Certificates of Compliance: Proposed materials meet Specification requirements.

1.2 ENVIRONMENTAL REQUIREMENTS

- A. Ambient Temperature: Between 40 and 80 degrees F (4 and 27 degrees C) when sealant is applied. Consult manufacturer when sealant cannot be applied within these temperature ranges.

PART 2 - PRODUCTS

2.1 SEALANT MATERIALS

- A. Sealant Characteristics:
 - 1. Uniform, homogeneous.
 - 2. Free from lumps, skins, and coarse particles when mixed.
 - 3. Nonstaining, nonbleeding.
 - 4. Hardness of 15 minimum and 50 maximum, measured by ASTM C661 method.
 - 5. Immersible may be substituted for nonimmersible.
- B. Sealant Color: To match adjacent surfaces or as selected by ENGINEER.
- C. One-Part Polyurethane, Immersible:
 - 1. Polyurethane base, single-component, moisture curing; ASTM C920, Type S, Grade NS or P, Class 25.
 - 2. Capable of being continuously immersed in water.
 - 3. Designed to be used where the maximum depth of sealant will not exceed 1/2 inch.
 - 4. Provide sealant certified to NSF/ANSI Standard 61 where sealant is in direct contact with potable water.
 - 5. Manufacturers and Products for Nonsag:
 - a. Sika Construction: Sikaflex-1a.
 - b. Tremco: Vulkem 116.
 - c. Or approved equal.
 - 6. Manufacturers and Products for Self-Leveling:
 - a. Sika Construction: Sikaflex-1C SL.

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- b. Tremco: Vulkem 45 SSL.
- c. Or approved equal.

2.2 BACKUP MATERIAL

- A. Nongassing, extruded, closed-cell round polyethylene foam rod, compatible with sealant used, and as recommended by sealant manufacturer.
- B. Size: As shown or as recommended by sealant material manufacturer. Provide for joints greater than 1/2-inch deep. Backup material should be sized to maintain 2:1 width to depth ratio to the greatest extent possible.
- C. Manufacturers and Products:
 - 1. Dow Corning; Ethafoam SB.
 - 2. Sonneborn; Sonofoam.
 - 3. Or approved equal.

2.3 ANCILLARY MATERIALS

- A. Bond Breaker: Pressure sensitive tape as recommended by sealant manufacturer to suit application. Provide bond breaker tape in the bottom of joints to prevent 3-sided joint sealant adhesion when backup material is not used.
- B. Joint Cleaner: Noncorrosive and nonstaining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Primer: Nonstaining type recommended by sealant manufacturer to suit application

PART 3 - EXECUTION

3.1 GENERAL

- A. Use of more than one material for the same joint is not allowed unless approved by the sealant manufacturer.
- B. Install joint sealants in accordance with ASTM C1193.
- C. Horizontal and Sloping Joints of 1 Percent Maximum Slope: Use self-leveling (Grade P) joint sealant.
- D. Steeper Sloped Joints, Vertical Joints, and Overhead Joints: Use nonsag (Grade NS) joint sealant.

3.2 PREPARATION

- A. Verify that joint dimensions, and physical and environmental conditions, are acceptable to receive sealant.
- B. Surfaces to be sealed shall be clean, dry, sound, and free of dust, loose mortar, oil, and other foreign materials.
 - 1. Mask adjacent surfaces where necessary to maintain neat edge.
 - 2. Starting of work will be construed as acceptance of subsurfaces.

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3. Apply primer to dry surfaces as recommended by sealant manufacturer.
- C. Verify that joint shaping materials and release tapes are compatible with sealant.
- D. Examine joint dimensions and size materials to achieve required width/depth ratios.
- E. Carefully follow manufacturer's instructions for mixing multi-component products.

3.3 INSTALLATION

- A. Use joint filler to achieve required joint depths, to allow sealants to perform intended function.
 1. Install backup material as recommended by sealant manufacturer.
 2. Where possible, provide full length sections without splices; minimize number of splices.
 3. Tape sealant may be used as joint filler if approved by sealant manufacturer.
- B. Use bond breaker where recommended by sealant manufacturer and in the bottom of joints to prevent 3-sided joint sealant adhesion.
- C. Seal joints around window, door and louver frames, expansion joints, and elsewhere as indicated.
- D. Joint Sealant Materials: Follow manufacturer's recommendation and instructions, filling joint completely from back to top, without voids.
- E. Joints: Tool slightly concave after sealant is installed.
 1. When tooling white or light color sealant, use a water wet tool.
 2. Finish joints free of air pockets, foreign embedded matter, ridges, and sags.
- F. Tape Sealant: Compress to 50 percent of expanded thickness and install in accordance with manufacturer's instructions.

3.4 CLEANING

- A. Clean surfaces next to the sealed joints of smears or other soiling resultant of sealing application.
- B. Replace damaged surfaces resulting from joint sealing or cleaning activities.

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SECTION 08100

METAL DOORS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Provide and install metal doors per this section and Door Schedule included in the Drawings.

1.2 SUBMITTALS

- A. Shop Drawings: Applicable information for each type of door and frame, including:
 - 1. Frame conditions, complete anchorage details, dimensions, glazing, fire ratings, etc.
 - 2. Reference door numbers used on Drawings and in Door Schedule on shop drawings.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Identify each door with number used on Drawings and in Door Schedule.
- B. Store doors upright, in protected dry area and provide for air circulation around each door. Store doors at least 4-inches off of the floor to prevent water damage and wear of door bottom on floor. Do not cover doors in plastic tarps or other storage provisions which promote water damage and rust. If door packaging becomes wet, remove it immediately.

PART 2 - PRODUCTS

2.1 HOLLOW STEEL DOORS

- A. General:
 - 1. Doors and Frames shall conform to SDI 100, except as modified herein.
 - 2. Doors and Frame cutouts, anchors and reinforcement shall conform to SDI 107 and ANSI A115 to receive hardware as specified elsewhere.
- B. Materials:
 - 1. Doors, frames and frame components shall be manufactured from commercial quality carbon steel conforming to ASTM designation A366, with an A60 zinc-iron alloy coating conforming to ASTM designation A653.
- C. Hollow Metal Doors:
 - 1. Flush Panel Doors: 16-gauge, Grade III, Model 1, with honeycomb or polyurethane core.
 - 2. Trim for doors with glass cutouts shall be 18-gauge galvanized steel. If the trim is installed using screws, screws shall be only visible from the non-secure side of the door. Trim shall be flush or shall protrude no more than 1/16" from the door face, and shall be the same on both sides of the door.
 - 3. All doors shall have flush end closure at top of doors to eliminate moisture penetration. Door tops shall not have holes or openings.

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4. All doors shall include a self-adjusting, concealed door sweep installed in the bottom channel. The bottom seal shall not include springs.
 5. Glass Lites
 - a. Provide door with a narrow lite (N) located along the lock edge of the door with exposed glass dimensions of approximately 4" x 25" where indicated in the Door Schedule.
 - b. Provide door with a half glass (G) where indicated in the Door Schedule.
 - c. Glazing:
 - 1) All glass shall be 1/4" thick fully tempered safety glass, manufactured by a horizontal process.
 - 2) The tempered glass shall meet, at the time of installation, quality and strength requirements of ASTM C-1036 and ASTM C-1048 and the safety criteria of CPSC 16 CFR 1201 and ANSI Z97.1-1984.
 - 3) Glass shall be appropriate for service in environmental conditions from -10 degrees Fahrenheit air temperature to 130 degrees Fahrenheit air temperature.
 - 4) Glass shall be labeled as follows: Each pane of safety glass shall be identified by a label specifying the labeler, whether the manufacturer or installer, the type and thickness of glass, and the safety glazing standard with which it complies. Label shall be acid etched, sand blasted, ceramic fired or an embossed mark or otherwise written so that it cannot be removed without destroying the glass.
 6. Door swing shall be as shown on Drawings.
- D. Metal Frames:
1. Products of hollow metal door manufacturer, constructed to coordinate with hollow metal door.
 2. Frames for Doors 14-Gauge: Welded type, of cross-section shown.
 3. Finished size, shape, and profile of frame members as shown.
 4. Concealed fasteners or welding are preferred to through-the-face fasteners.
 5. Identification: Stamp opening number, as shown on Drawings and in Door Schedule, on center hinge reinforcement of each frame.
- E. Finish:
1. Doors and frames shall be cleaned and phosphate treated.
 2. Doors and frames shall be galvanized with A60 or G60 zinc coating in accordance with ASTM A525 (Wipe Coat galvanized coating is not acceptable).
 3. Doors and frames shall be finished with a baked-on rust-inhibiting primer in accordance with ANSI A250.3. Doors shall be field finished in accordance with Section 09900.
- F. Manufacturers and Models:
1. Steelcraft L series with F series frame
 2. Curries 727 series with M type frame
 3. Or equal.
- G. Door Schedule:
1. See Drawings.

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PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean and prepare rough opening to accept metal frame. Identify and report any deficiencies in rough opening to Engineer prior to installing metal frame.

3.2 INSTALLATION

- A. Metal Frames:
 - 1. Set all frames in accordance with SDI 105.
 - 2. Set welded frames in position prior to beginning partition work.
 - 3. Brace frames until permanent anchors are set.
 - 4. Set anchors for frames as work progresses.
 - 5. Install anchors at hinge and strike levels.
 - 6. Use temporary setting spreaders at all locations.
 - 7. Use intermediate spreaders to assure proper door clearances and header braces for grouted frames.
 - 8. Install frames in prepared openings in concrete and masonry walls using countersunk bolts and expansion shields.
- B. Hollow Metal Doors:
 - 1. Install hollow metal doors in frames using hardware specified in Section 08700 Door Hardware.
 - 2. Clearances at edge of doors
 - a. Between door and frame at head and jambs: 1/8 inch.
 - b. At meeting edges pairs of doors and at mullions: 1/8 inch.
 - c. At transom panels, without transom bars: 1/8 inch.
 - d. At sills without thresholds: 5/8 inch maximum above finish floor.
 - e. At sills with thresholds: 1/8 inch above threshold.

3.3 ADJUSTMENT AND CLEANING

- A. Remove dirt and excess sealants, mortar or glazing compounds from exposed surfaces.
- B. Adjust moving parts for smooth operation. Use shims if necessary to allow for proper closing.
- C. Fill all dents, holes, etc. with metal filler and sand smooth and flush with adjacent surfaces - Reprime/paint to match finish.

+ + END OF SECTION + +

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SECTION 08300

METAL COILING OVERHEAD DOORS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Provide and install interior face-mounted, insulated rolling service door assemblies, completely weather sealed and provided with all necessary accessories and components for a complete installation.

1.2 SUBMITTALS

- A. Shop Drawings: Construction and installation details.
- B. Quality Control: Installer's factory authorization.

1.3 QUALITY ASSURANCE

- A. Qualifications: Experienced, factory authorized installer.

PART 2 - PRODUCTS

2.1 METAL COILING OVERHEAD DOOR

- A. Features:
 - 1. Dimensions: Provide Metal Coiling Overhead doors to fit the openings with the dimensions shown on the drawings.
 - 2. Door Curtain Slats: Interlocking roll-formed flat profile type slats as follows:
 - a. The front slat shall be fabricated of 18-gauge galvanized steel.
 - b. The back slat shall be 24-gauge galvanized steel.
 - 3. Provide insulated slats.
 - a. The slat cavity shall be filled with CFC-free formed-in-place polyurethane insulation.
 - 4. Endlocks shall be attached to each end of alternate slats to prevent lateral movement.
 - 5. Windload Design: 20 PSF.
 - 6. Weatherseals: Vinyl bottom seal, exterior guide and internal hood seals.
 - 7. Bottom Bar: Two galvanized steel angles, minimum thickness 1/8" bolted back to back to reinforce curtain in the guides.
 - 8. Guides:
 - a. Provide three galvanized structural steel angles with minimum thickness of 3/16".
 - b. Guides shall be weatherstripped with a vinyl weather seal at each jamb, on the exterior curtain side and interior curtain side.
 - 9. Brackets: Galvanized steel to support counterbalance, curtain and hood.
 - 10. Counterbalance:
 - a. Helical torsion spring type.
 - b. Designed for 100,000 cycle life design.
 - c. Housed in a steel tube or pipe barrel, supporting the curtain with deflection limited to 0.03" per foot of span.

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- d. Adjustable by means of an adjusting tension wheel.
 - 11. Hood:
 - a. Galvanized steel
 - b. 24 gauge
 - c. Intermediate supports as required.
 - d. Provide with internal hood baffle weatherseal.
 - 12. Color: Powder coating finish in color as selected by ENGINEER from manufacturer's standard colors.
 - 13. Operation: Manual chain hoist (continuous chain, crank operation).
 - 14. Locking: Interior bottom bar slide boltlock and chain keeper locks.
- B. Manufacturers and Products:
- 1. Overhead Door Corp.; 625 Series Stormtite rolling door.
 - 2. The Cookson Co.; Type ESD20.
 - 3. Or equal.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Examine the substrates and conditions under which the Work is to be installed and notify ENGINEER, in writing, of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until any unsatisfactory conditions have been corrected in a manner acceptable to ENGINEER.

3.2 INSTALLATION

- A. Strictly comply with manufacturers installation instructions and recommendations. Coordinate installation with adjacent work to ensure proper clearances.

3.3 TESTING AND ADJUSTING

- A. Upon completion of installation including the work by other trades, test and adjust doors to operate easily, free from warp, twist or distortion.
- B. Test the door in presence of ENGINEER to demonstrate proper operation.

3.4 ADJUSTING AND CLEANING

- A. Adjust doors and operators for smooth, easy operation.
- B. Repair any damage to paint or finishes.
- C. Leave door assemblies clean and remove all debris from work area.

+ + END OF SECTION + +

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SECTION 08305

ACCESS HATCHES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Provide all materials, equipment, and accessories to furnish and install the following access hatches:
 - 1. Flush floor hatches
 - 2. Roof hatches

1.2 QUALITY ASSURANCE

- A. Warranty: Provide a 1-yr warranty on all hatches from date of installation. Warranty shall cover defects in workmanship, design, and materials. If any component should fail during the warranty period, it shall be corrected and the unit restored to service at no expense to the OWNER.

1.3 DESIGN REQUIREMENTS

- A. In other locations and where designated as "Standard" hatches shall be designed for a live load of 300 pounds per square foot.

1.4 SUBMITTALS

- A. Shop Drawings:
 - 1. Detailed drawings showing component and assembly dimensions, location of connections, weights of all equipment, installation details, and accessory details.
- B. Product Data:
 - 1. Descriptive literature, specifications, and engineering data.
 - 2. Materials of construction for all components and accessories.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. All equipment and accessories shall be properly protected during shipment such that no damage or deterioration shall occur between shipment and installation.
 - 1. Finished surfaces shall be protected by wooden blanks.
 - 2. Finished ferrous metal surfaces not painted shall be protected from corrosion.
 - 3. Each box and package shall be clearly marked with the contents and total weight.
- B. Manufacturer shall provide any special storage and handling instructions.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. General: Acceptable manufacturers are listed below. Other manufacturers of equivalent products may be submitted.

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1. Aluminum hatches:
 - a. The Bilco Co.
 - b. Babcock-Davis, Inc.
 - c. Or Equal.

2.2 MATERIALS

- A. Unless otherwise noted, all access hatches shall be constructed of aluminum.
- B. Aluminum hatches shall be provided with aluminum frames and stainless-steel hardware.
- C. Steel hatches and frames shall be galvanized and provided with galvanized or cadmium-plated hardware.

2.3 FLUSH FLOOR HATCHES

- A. General
 1. Doors shall be pre-assembled from the manufacturer.
 2. Covers shall open 90 degrees and be equipped with a hold open arm which automatically locks the cover in the open position.
 3. Covers shall be fitted with the required number and size of compression spring operators. Springs shall have an electrocoated acrylic finish. Spring tubes shall be constructed of a reinforced nylon 6/6-based engineered composite material.
 4. A removable exterior turn/lift handle with a spring loaded ball detent shall be provided to open the cover and the latch release shall be protected by a flush, gasketed, removable screw plug.
 5. Hardware:
 - a. Hinges shall pivot so that the cover does not protrude into the channel frame.
 - b. A Type 316 stainless steel snap lock with fixed handle shall be mounted to the underside of the cover.
 6. Entire door and all hardware components shall be highly corrosion resistant.
 7. Doors shall be sealed with an EPDM gasket for odor control purposes.
- B. **H-100:** Single leaf flush floor hatch for walking areas (up to 42-inch by 42-inch)
 1. Furnish and install where indicated on drawings flush floor access hatch. The hatch shall be single leaf.
 2. Service: Floor hatch for use in areas of foot traffic.
 3. Features:
 - a. Material:
 - 1) Cover: ¼-in aluminum diamond pattern plate
 - 2) Frame: ¼-in extruded aluminum
 - b. The cover shall be reinforced to support a minimum live load of 300 lb/ft² with a maximum deflection of 1/150th of the span.
 - c. Hinges:
 - 1) Aluminum cover: Provide heavy forged aluminum hinges with a minimum ¼-in diameter Type 316 stainless steel pin.
- C. **H-101:** Double leaf flush floor hatch for walking areas (over 42-inch by 42-inch)
 1. Furnish and install where indicated on drawings flush floor access hatch. The hatch shall be double leaf.
 2. Service: Floor hatch for use in areas of foot traffic.
 3. Features:
 - a. Material:

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- 1) Cover: ¼-in aluminum diamond pattern plate
- 2) Frame: ¼-in extruded aluminum
- b. The cover shall be reinforced to support a minimum live load of 300 lb/ft² with a maximum deflection of 1/150th of the span.
- c. Hinges:
 - 1) Aluminum cover: Provide heavy forged aluminum hinges with a minimum ¼-in diameter Type 316 stainless steel pin.

2.4 ROOF HATCHES

A. General

1. All roof hatches shall be preassembled from the manufacturer.
2. Entire hatch shall be weathertight with fully welded corner joints on cover and curb.
3. Cover:
 - a. Material: 11 gauge aluminum with a 3-inch beaded flange with formed reinforcing members.
 - b. Cover shall be reinforced to support a minimum live load of 40 psf with a maximum deflection of 1/150th of the span or 20 psf wind uplift.
 - c. Cover shall have a heavy extruded EPDM rubber gasket that is bonded to the cover interior to assure a continuous seal when compressed on the top surface of the curb.
 - d. Cover insulation shall be fiberglass of 1-inch thickness, fully covered and protected by an 18 gauge aluminum liner.
4. Curb:
 - a. Material: 11 gauge aluminum
 - b. The curb shall be 12 inches in height.
 - c. The curb shall be formed with a 3-1/2-inch flange with 7/16-inch holes provided for securing to the roof deck.
 - d. The curb shall be equipped with an integral metal capflashing of 11 gauge aluminum, fully welded at the corners.
 - e. Curb insulation shall be rigid, high-density fiberboard of 1-inch thickness on outside of curb.
5. Lifting Mechanisms:
 - a. Manufacturer shall provide compression spring operators enclosed in telescopic tubes to provide smooth, easy, and controlled cover operation.
 - b. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly.
 - c. The lower tube shall interlock with a flanged support shoe welded to the curb assembly.
6. Winch Operated Rigging:
 - a. Manufacturer shall provide winch operated rigging to allow the roof hatches to be manually opened from ground floor level.
 - b. Rigging shall include all winches, cables and pulleys per roof hatch.
 - c. Contractor shall install rigging and provide all necessary hardware and stand-off brackets to allow the winches to be readily accessible without interference of adjacent mechanical, structural or electrical items.
 - d. Layout of rigging shall be approved by ENGINEER prior to installation.
7. Hardware:
 - a. Heavy pintle hinges shall be provided.
 - b. Cover shall be equipped with a spring latch with interior and exterior turn handles.
 - c. Roof hatch shall be equipped with interior and exterior padlock hasps.
 - d. The latch strike shall be a stamped component bolted to the curb assembly.

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- e. Cover shall automatically lock in the open position with a rigid hold open arm equipped with a 1-inch diameter red vinyl grip handle to permit easy release for closing.
 - f. Compression spring tubes shall be an anti-corrosive composite material and all other hardware shall be zinc plated and chromate sealed. Springs shall have an electrocoated acrylic finish for corrosion resistance.
 - g. Cover hardware shall be bolted into heavy gauge channel reinforcing welded to the underside of the cover and concealed within the insulation space.
8. Factory finish shall be mill finish aluminum.
- B. **H-201:** Single leaf roof hatch for small equipment access
- 1. Furnish and install where indicated on plans a metal roof hatch.
 - 2. Dimensions: width of 60 inches and length of 60 inches (hinge side).
 - 3. The roof hatch shall be single leaf.
 - 4. Furnish winch operated rigging for each roof hatch.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install in accordance with the manufacturer's recommendations and approved shop drawings. Install level and square with other construction, without warp or rack.
- B. Unless otherwise shown, hatches shall be cast integrally with concrete decks, and shall not be grouted in later.
- C. Coordinate precise location with equipment to be accessed thereby.
- D. Aluminum surfaces shall be protected with two heavy coats of asphaltic or zinc chromate paint, where they are in contact with concrete or masonry.

+ + END OF SECTION + +

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SECTION 08700
DOOR HARDWARE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Provide all materials, equipment, and accessories to furnish and install door hardware.

1.2 SUBMITTALS

- A. Shop Drawings:
1. Product Data: Manufacturers' literature for each item of finish hardware required herein, clearly marked.
 2. Finish Hardware Schedule: Furnish complete and detailed schedule, show product items, numbers, and finishes for all hardware for each separate opening.
 3. Special Tools: Provide listing and description of usage.

1.3 QUALITY ASSURANCE

- A. Qualifications of Supplier: A recognized supplier of architectural finish hardware, with warehousing facilities, who has been furnishing hardware in the vicinity of the Project for not less than 5 years, and who is, or who employs, an architectural hardware consultant.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Provide secure storage for all finish hardware until installation is made.
- B. Before delivery, clearly identify and tag each item of hardware with respect to specified description and location of installation.

1.5 SPECIAL TOOLS

- A. Provide two sets of special tools for installation and maintenance of hardware.

PART 2 - PRODUCTS

2.1 DOOR HARDWARE

- A. Provide all door hardware from a single manufacturer in order to have consistency in appearance, function and maintenance procedures.
- B. Fasteners:
1. All fasteners shall be type 304 stainless steel.
- C. Butt Hinges:
1. Conforming to ANSI A156.1-88.
 2. Quantity per Door Leaf (Minimum):

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DOOR HEIGHT	MINIMUM NUMBER OF HINGES PER LEAF
Up to 5'-0"	2 ea
5'-0" to 7'-7"	3 ea
7'-7" to 10'-0"	4 ea
10'-0" to 12'-6"	5 ea
Over 12'-6"	One for every 30" of door height, rounding up

3. Hinge Size: Except as otherwise specified or as required to comply with UL and NFPA, provide hinges of the following sizes:
 - a. Up to 36" wide: 4½" heavy weight.
 - b. Over 36" to 48" wide: 5" heavy weight.
 - c. Over 48" wide: 6" heavy weight.
4. Types of Hinges: Full-mortise type, ball-bearing hinges swaged for mortise applications, inner leaf beveled, square cornered.
5. Width: Minimum for clearance of trim and 180-degree swing.
6. Exterior Hinges: Non-removable pin.
7. Joint Tolerance: 0.012-inch maximum, gauged in CLOSED position.
8. Material: type 304 stainless steel.
 - a. Finish: Satin stainless steel No. 630.
9. Hinge Manufacturers and Models:
 - a. Stanley FBB191-32D
 - b. McKinney TB2314
 - c. Or Equal.

D. Exit Devices:

1. Provide exit devices on all exit doors listed in the Door Schedule complying with ANSI A156.3.
2. Furnish cylinders on all exterior doors.
3. Provide card key access with key backup on each door, Johnson Controls to match existing City of Roseville Systems.
4. Exit Device Manufacturer and Model:
 - a. To be determined as part of Design-Assist process to match OWNER's existing facilities.

E. Coordinator:

1. Provide coordinator at all double doors.
2. Coordinator Manufacturers and Models:
 - a. Ives COR7G.
 - b. Or Equal.

F. Closers:

1. Provide closers on all exterior doors or as indicated in the Door Schedule which comply with ANSI A156.4.
2. Size closers in accordance with manufacturer's standards. Mount regular arm closers on pull side of doors. Mount parallel arm closers on push side of doors. On pair of doors provide closer on active leaf only, unless noted otherwise.
3. Closer Manufacturers and Models:
 - a. LCN 4110 Series
 - b. Sargent 351 Series
 - c. Or Equal.

G. Thresholds:

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1. Provide threshold at each door as indicated in the Door Schedule or shown on the drawings: One-piece full width of opening; extend beyond jamb where indicated.
 2. Provide with stainless steel machine screws in threaded expansion anchors at concrete.
 3. Finish: Mill finish aluminum, unless indicated otherwise.
 4. Threshold Manufacturers and Models:
 - a. Pemko 274X4AFG
 - b. Reese Enterprises, Inc. S407A
 - c. Or Equal.
- H. Weatherstrip:
1. Provide complete weatherstrip system at exterior doors, including rubber or vinyl at jambs and head, door sweep, rain drip, astragal seal for 2-leaf doors, and all other weatherstripping necessary to provide a weather-sealed door system which does not allow air or moisture movement through the gap between the door and frame.
- I. Stops and Holders:
1. Provide stops and holders for all doors with closers in accordance with ANSI A156.16.
 2. Finish: Satin chromium-plated No. 626.
 3. Stop/Holder Manufacturers and Models:
 - a. Ives WS445
 - b. Hager Companies 256
 - c. Or Equal.

2.2 KEYING

- A. Coordinate Keying System with OWNER. Provide master-keying and local-keying to match OWNER's keying system prior to Final Completion.
- B. Provide removable construction core system for use during construction.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. In accordance with manufacturer's written instructions.
- B. Make Work neat and secure, develop full strength of components, and provide proper function.
- C. Prevent marring, scratching, or otherwise damaging adjacent finishes during hardware installation.
- D. Latchbolts: Install to engage in strikes automatically, whether activated by closers or manually. In no case shall additional manual pressure be required to engage latchbolt in strike.
- E. Wall Mounted Hardware: Install over solid structural backing or solid blocking in hollow walls.
- F. Thresholds:
 1. Cope ends neatly to profile of jamb.

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- 2. Set in sealant and seal ends to jambs.
- G. Hardware: Adjust for easy, noise-free operation.
- H. Replace damaged hardware items.

3.2 MOUNTING DIMENSIONS

- A. Standard Door Hardware Locations: As recommended and published by the Door and Hardware Institute, except as noted or detailed otherwise.
- B. Door Silencers: Install 3 inches from top and bottom of jamb and 1 inch above strike at single doors, and 3 inches from edges of doors in head for pairs of doors.

3.3 MANUFACTURER'S SERVICES

- A. Deliver permanent lock cores to the site.
- B. Remove temporary construction cores and insert permanent cores.
- C. Inspect each lock set to ensure permanent cores are operating satisfactorily.
- D. Deliver to OWNER change and control keys for the permanent system.
- E. Return temporary construction cores to the manufacturer.

3.4 PROTECTION

- A. Cover and protect exposed surfaces of hardware during installation and until Substantial Completion.
- B. Fit, dismantle, and reinstall finish hardware as required for finish painting work.
- C. Protect and prevent staining of hardware during construction in accordance with manufacturer's recommendations.
- D. Remove protective measures and permanent lock cylinders installed prior to final cleaning.

+ + END OF SECTION + +

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SECTION 09250
GYPSUM WALLBOARD

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Furnish all materials, labor, equipment and incidentals required to install gypsum wallboard.

1.2 QUALITY ASSURANCE

- A. General: Regardless of the minimum specifications herein, utilize materials and applications recommended by the manufacturer.
- B. Applicator's Qualifications: Use only workers regularly employed in this type of work who can show experience in the application of similar materials and the specific systems specified.

1.3 SUBMITTALS

- A. Shop Drawings:
 - 1. Manufacturer's list of items and materials proposed for use, with descriptive literature for each system used.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery of Materials:
 - 1. Deliver materials to the project site with manufacturer's labels intact and legible.
 - 2. Deliver fire rated materials bearing testing agency label and required fire classification numbers.
- B. Storage and Handling of Materials:
 - 1. Store materials inside under cover, stack flat, off floor.
 - 2. Stack gypsum wallboard so that long lengths are not over short lengths.
 - 3. Store adhesives and finishing compounds in dry areas, and protect against freezing at all times.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Temperature:
 - 1. In areas receiving gypsum wallboard installation, maintain temperature range between 55 and 70 degrees F for 24 hours before, during, and after gypsum wallboard and joint treatment application.
 - 2. In areas receiving veneer plaster, where outside air temperature is less than 50 degrees F, maintain interior temperature range between 50 degrees F and 80 degrees F for a period of 1 week before, during, and 1 week after application of veneer plaster, base, and joint treatment.
- B. Ventilation:
 - 1. Provide ventilation during and following adhesives and joint treatment applications.

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2. Use temporary air circulators in enclosed areas lacking natural ventilation.
3. Keep air circulation at a minimum level during veneer plastering to avoid excessive drying.
4. Under slow drying conditions, allow additional drying time between coats of joint treatment.
5. Protect installed materials from drafts of ambient air during hot, dry weather.

PART 2 - PRODUCTS

2.1 GYPSUM WALLBOARD

- A. Regular Board: ASTM C36, Type X, 5/8 inch thick with tapered edges.

2.2 FASTENERS FOR GYPSUM WALLBOARD

- A. Screws: ASTM C1002, self-drilling, self-tapping, bugle head, for use with power-driven tool.
 1. Type S, 1-inch long for gypsum wallboard to sheet metal.

2.3 JOINT TREATMENT

- A. Joint Tape for General Interior Applications: ASTM C475, perforated paper tape.
- B. Joint Compound for General Interior Applications: ASTM C475, all-purpose, ready-mixed compound.

2.4 ANCILLARY MATERIALS

- A. Adhesives: As recommended by gypsum wallboard manufacturer for intended use.

2.5 TRIM ACCESSORIES

- A. Zinc-Coated Metal, ASTM C1047:
 1. Corner Bead: 1-1/4 inch by 1-1/4 inch:
 - a. United States Gypsum; Dur-A-Bead.
 - b. Award Metals; standard corner beads.
 - c. Clark Dietrich; standard corner beads.
 2. Edge Trim:
 - a. United States Gypsum; L-Trim and J-Trim.
 - b. Award Metals; L-Bead and J-Bead.
 - c. Clark Dietrich; L-Trim and J-Trim.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspect surfaces to receive gypsum wallboard and related materials before beginning work and report to ENGINEER any defects in such work which will adversely affect the quality of work specified herein.

3.2 PREPARATION

- A. General: Provide, install, and maintain necessary scaffolding, staging, trestles, planking, and temporary heating, lighting, and ventilation as necessary for the duration of the gypsum wallboard work.
- B. Protection: Protect work of other trades.
- C. Coordination:
 - 1. Coordinate work with that of other trades. Check specifications and drawings of other trades to determine parts of work requiring coordination.
 - 2. Cut and repair gypsum wallboard systems for installation of omitted work.
- D. Surface Preparation: Repair defective surfaces prior to starting work. Prepare as specified for application of specific materials.

3.3 APPLICATION OF GYPSUM WALLBOARD

- A. Inspection and Preparation:
 - 1. Check framing for accurate spacing and alignment.
 - 2. Verify that spacing of installed framing does not exceed maximum allowable for thickness of gypsum wallboard to be used.
 - 3. Verify that frames are set for thickness of gypsum wallboard to be used.
 - 4. Do not proceed with installation of gypsum wallboard until deficiencies are corrected and surfaces to receive gypsum wallboard are acceptable.
 - 5. Protrusions from framing, twisted framing members, or unaligned members must be repaired before installation of gypsum wallboard is started.
- B. General:
 - 1. Meet requirements of ASTM C840 and GA-216.
 - 2. Joints: Use gypsum wallboard of maximum lengths to minimize end joints. Stagger end joints when they occur. Locate end joints as far as possible from center of wall or ceiling. Abut gypsum wallboard without forcing. Neatly fit ends and edges of gypsum wallboard. Do not place butt ends against tapered edges.
 - 3. Support ends and edges of gypsum wallboard panels on framing or furring members except for face layer of double layer and where ends are back blocked and floated.
 - 4. Use metal edge trim where gypsum wallboard abuts another material and where shown or noted on Drawings.
 - 5. Use gypsum fiberglass-mat faced gypsum backing board in toilet and shower walls, behind ceramic tile, and elsewhere as indicated on Drawings.
 - 6. Follow manufacturer's recommendation of good practice.
- C. Over Framing:
 - 1. Apply gypsum wallboard first to ceiling and then to walls for single layer horizontal application.
 - 2. Use vertical application for fire-rated walls.
 - 3. Fasten gypsum wallboard securely to framing using double nailing, screw, or adhesive method.

3.4 JOINT SYSTEM

- A. Interior Gypsum Wallboard: Conform to ASTM C840.

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- B. Required: On exposed gypsum wallboard, under ceramic tile and wall covering, and behind casework.
- C. Prefill: Fill V-grooves formed by abutting rounded edges of gypsum wallboard with prefill joint compound. Fill V-joint flush and remove excess compound beyond groove. Leave clear depression to receive tape. Permit prefill joint compound to harden prior to application of tape.
- D. Taping and Finishing Joints:
 - 1. Taping or Embedding Coat: Apply compound in thin, uniform layer to joints and angles to be reinforced. Apply reinforcing tape immediately. Center tape over joint and seat tape into compound. Leave approximately 1/64-inch to 1/32-inch compound under tape to provide bond. Apply skim coat immediately following tape embedment but not to function as fill or second coat. Fold tape and embed in angles to provide true angle. Dry embedding coat prior to application of fill coat.
 - 2. Filling Coat: Apply joint compound over embedding coat. Fill taper flush with surface. Apply fill coat to cover tape. Feather out fill coat beyond tape and previous joint compound line. For joints with no taper, feather out at least 4 inches on either side of tape. Do not apply fill coat on interior angles. Allow fill coat to dry prior to application of finish coat.
 - 3. Finishing coat: Spread joint compound evenly over and beyond fill coat on joints. Feather to smooth uniform finish. Apply finish coat to tapes angles to cover tape and taping compound. Sand final application of compound to provide surface ready for decoration.
 - 4. Filling and Finishing Depressions:
 - a. Apply joint compound as first coat to fastener depressions. Apply at least two additional coats of compound after first coat is dry. Leave filled and finished depressions level with plane of surface.
- E. Finishing Beads and Trim:
 - 1. First Fill Coat: Apply joint compound to bead and trim. Feather out from ground to plane of the surface. Dry compound prior to application of second fill coat.
 - 2. Second Fill Coat: Apply joint compound in same manner as first fill coat. Extend beyond first coat onto face of gypsum wallboard. Dry compound prior to application of finish coat.
 - 3. Finish Coat: Apply joint compound to bead and trim. Extend beyond second fill coat. Feather finish coat from ground to plane of surface. Sand finish coat to provide flat surface ready for decoration.

3.5 FINAL FINISHES

- A. Levels of Finish: Conform to GA-214.
- B. Level 5:
 - 1. Taping, filling, and finishing coats plus two separate coats applied over joints, angles, fastener heads, and trim accessories.
 - 2. Sand between coats and after last coat.
 - 3. Add a thin, smooth, uniform skim coat of joint compound, or product specially formulated for this purpose, over entire surface.
 - 4. Produce surfaces free of tool marks and ridges, ready for painting.
 - 5. Use on surfaces not indicated otherwise, those indicated to receive gloss, semi-gloss, and nontextured flat paints, and where indicated.

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3.6 ADJUST AND CLEAN

- A. Clean: Remove droppings or texture overspray from walls, windows, and floor, leaving room clean for following trades.

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SECTION 09900

PAINTING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Provide and install coatings on all exposed surfaces as indicated herein, in other Specification Sections, and on the Drawings.

1.2 QUALITY ASSURANCE

- A. Experience: Both Coatings Manufacturer and Coatings Installer shall have a minimum 5 years' experience in production and application, respectively, of specified products. Coatings Installer shall be approved and endorsed, in writing, by Coatings Manufacturer.
- B. Regulations: Meet federal, state, and local requirements which apply to the work, including, but not limited to those regulations limiting the emission of volatile organic compounds.
- C. Coatings Manufacturer Recommendations: Coatings Installer shall follow all recommendations of the Coatings Manufacturer regarding storage, handling, surface preparation, application of coatings, recoat times, environmental conditions during storage, preparation and application of coatings, and all other Coatings Manufacturer recommendations.
- D. Warranty: Both Coatings Manufacturer and Coatings Installer shall provide a 1-year complete replacement warranty for all coatings. Manufacturer shall provide 5-year warranty for long-term performance of coatings in addition to 1-year warranty.

1.3 SUBMITTALS

- A. Shop Drawings: Coatings Manufacturer shall submit for approval the following:
 - 1. Copies of Manufacturer's technical information and application instructions for each material proposed for use. Specify exactly which product is being proposed for each coating type (as specified below). This may be accomplished through a reference table along with information on the various products, or by a separate, tabbed section with information on products being submitted for each system in a separate tab of a binder. Submittal of general Manufacturer's literature without detailing which product is proposed for each paint system will be unacceptable.
 - 2. Copies of Manufacturer's complete color charts for each coating system.
 - 3. Letter from the Coatings Manufacturer approving and endorsing Coatings Installer.
 - 4. Letter from Coatings Manufacturer stating that volatile organic compounds (VOCs) meet all Federal, State and Local requirements.
 - 5. Furnish copies of the final, approved submittal to the Coatings Installer so that it is clear which product is to be used for which each system.
- B. Reference Samples:
 - 1. Provide reference samples of paint colors and textures as required by the ENGINEER. Reference samples will show the color and texture of the final paint to be applied and shall be approved by the ENGINEER prior to painting. Reference samples should be

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applied to similar substrates to the final surfaces to be painted. If ENGINEER chooses to forego reference samples, CONTRACTOR must receive the allowance to forego reference samples before painting begins or all painted surfaces will be re-painted at the ENGINEER's discretion and at no additional cost to the OWNER.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protection: Protect all pre-coated items from coating damage during shipping.
- B. Store products in accordance with Manufacturer's directions.
- C. Store products in a neat, orderly fashion. Protect products from damage. Protect storage area from damage from stored products.

PART 2 - PRODUCTS

2.1 PRODUCT AND MANUFACTURER:

- A. Provide coating types as listed in the following table. The systems referenced in the table are those provided by TNEMEC and Sherwin-Williams. If manufacturers other than TNEMEC or Sherwin Williams are desired, the CONTRACTOR shall submit equivalent paint systems.

COATING TYPE	DESCRIPTION	Sherwin Williams Series	TNEMEC SERIES
Clear Polyamine Epoxy	Clear Polyamine Epoxy, high solids, moisture resistant, designed as a one-coat wood sealer.	GP3477	Series 201, Epoxoprime
Acrylic Filler	Waterborne Cementitious Acrylic designed for application on porous surfaces such as rough-faced concrete masonry units	CementPlex 875	Series 130, Envirofill
Acrylic Latex	Single component, finish as required	ProMar 200	N/A
Industrial Acrylic	Single component, high density acrylic finish for interior, exterior surfaces	Shercryn HPA	Series 1029
Latex Primer/Sealer	Waterborne vinyl acrylic primer/sealer for interior gypsum wallboard/plaster. Capable of providing uniform seal and suitable for use with specified finish coats.	ProMar 200 Primer	Series 115
Polyamine Epoxy Sealer	Waterborne Polyamine Epoxy, penetrating, flexible and low-odor primer designed for sealing porous substrates.	Multi-Purpose Acrylic Primer	Series 151, Elasto-Grip FC
Acrylate	Modified Waterborne Acrylate designed for application on porous surfaces such as rough-faced concrete masonry units or wood surfaces. Flexible and breathable, moisture and UV resistant. Matte Finish	Loxon XP	Series 156, Enviro-crete
Polyamidoamine	Polyamidoamine Epoxy designed for	Sher-glass	Series N69, V69

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Epoxy	use on steel or other ferrous metals not in contact with potable water but submerged or immersed in wastewater or non-potable water.	FF	or L69 (type per local VOC regulations), Hi-Build Epoxoline II
	Polyamidoamine Epoxy designed for use on steel or other ferrous metals in contact with potable water.	Macropoxy 5500	Series N140, L140 or V140 (type per local VOC regulations), Pota-Pox Plus
Polyurethane	Aliphatic Acrylic Polyurethane designed for exterior weathering, abrasion and corrosion resistance	HS Polyurethane 250 or Waterbased Acrolon	Series 1095, Endura-Shield
Silane Water Repellent Sealant	Silane/Siloxane penetrating water repellent blend designed for application on above-grade concrete, stucco, block, masonry and stone surfaces	Loxon 7% Siloxane	Series 636, Dur A Pell 20
Wood Sealer / Stain	Single component, 250 g/l wood stain in clear or standard colors	Minwax 250	
Wood Varnish Finish	Single component polyurethane varnish	Minwax	

- B. All coatings used shall comply with Federal, State and local VOC limits based on application location.

2.2 COLOR

- A. Color Pigments: Pure, nonfading, lead-free applicable types to suit the substrates and service indicated.
- B. Provide colors as described in the drawings or specifications, or as selected by ENGINEER from standard color palette. For piping system colors, reference City of Roseville Process Control Standards.
- C. Where existing colors are to be matched or satisfactory color is not available from standard color palette, provide custom-mixed colors.
- D. Provide samples of each color on the substrate to be coated for approval by the ENGINEER prior to beginning coating application.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

- A. Coatings Installer shall prepare all surfaces to be painted in strict accordance with Coatings Manufacturer's recommendations.
- B. Coatings Manufacturer representative shall observe Coatings Installer's methods of preparing surfaces and approve of the work prior to Coatings Installer beginning coating

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installation. If, after a period of time, Coatings Manufacturer is satisfied with Coatings Installers methods, Coatings Manufacturer can allow Coatings Installer to proceed without inspection following surface preparation. Coatings Manufacturer and installer will still both be held equally accountable for any coatings failure.

C. Wood surface preparation

1. Coatings Installer shall clean and prepare all wood surfaces in accordance with the Coating Manufacturer's recommendations. Patching may be required where approved by the Engineer. All joints in wood members including trim, siding, soffits, and joints between wood and dissimilar materials shall be filled with joint sealant prior to coating.

3.2 PROTECTION

- A. Protect all adjacent surfaces from overspray, dripping or other transfer of coatings not intended for those surfaces. Use masking, tape, drop cloths, plastic and other protective materials as appropriate.
 1. Remove, mask, or otherwise protect hardware, lighting fixtures, switchplates, aluminum surfaces, stainless steel surfaces, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not intended to be painted.
 2. Protect working parts of mechanical and electrical equipment from damage during surface preparation and painting process. Mask openings in motors, fan housings, etc. to prevent coatings from falling inside.
 3. Correct all damages by cleaning, repairing or replacing, and repainting, as acceptable to ENGINEER.
- B. Completely remove all masking, tape, drop cloths, plastic and other protective materials within 48 hours of completion of application of finish coat. Take special care to remove masking and plastic which cover tank vent openings, HVAC registers, vents, motor vents, and other areas where airflow is critical to proper operation.

3.3 APPLICATION

- A. Paint all exposed surfaces not specifically excluded in 3.3.C, below. Provide and install Coatings in accordance with the following Table, unless otherwise specified in other Sections:

COATING SYSTEM NO.	SURFACE TO BE COATED	PRIMER COATING	NO OF PRIMER COATS	PRIME COAT THICKNESS (EACH COAT)	FINISH COATING	NO OF FINISH COATS	FINISH COAT THICKNESS (EACH COAT)
100	Concrete Masonry Units (Interior)	Acrylic Filler	1	70 SF/Gal Application Rate	Acrylate	2	135 SF/Gal Application Rate
101	Concrete Masonry Units (Exterior)	Silane Waterproofing Sealant	1	250 SF / Gal Application Rate	None		
102	Concrete Roof Slab (Exterior)	Silane Waterproofing Sealant	1	250 SF/Gal Application Rate	None		

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COATING SYSTEM NO.	SURFACE TO BE COATED	PRIMER COATING	NO OF PRIMER COATS	PRIME COAT THICKNESS (EACH COAT)	FINISH COATING	NO OF FINISH COATS	FINISH COAT THICKNESS (EACH COAT)
200	Wood (Interior and Exterior)	Polyamine Epoxy	1	250 SF/Gal Application Rate	Acrylate	2	135 SF/Gal Application Rate
201	Wood (Interior, where noted)	Wood Sealer	1	250 SF/Gal Application Rate	Wood Finish	1	350 SF/Gal Application Rate
202	Gypsum Board (Interior)	Latex Primer/Sealer	1	350 SF/Gal Application Rate	Acrylic Latex (Semigloss)	2	400 SF/Gal Application Rate
300	Exposed Ferrous Pipe Systems and Exposed Steel Items	Polyamidoamine Epoxy	2	4-6 MDFT	Polyurethane	2	2-3 MDFT
301	Exposed, Non-metallic Pipe Systems	Latex Primer/Sealer	1	3-5 MDFT	Acrylic Latex (Semigloss)	2	3-5 MDFT
302	Immersed Ferrous Pipe Systems and Steel Items	Polyamidoamine Epoxy*	1	6-10 MDFT	Polyamidoamine Epoxy*	1	6-10 MDFT
303	Immersed Non-metallic Pipe Systems	Latex Primer/Sealer*	1	4-6 MDFT	Acrylic Latex (Semigloss)*	1	4-6 MDFT
304	Buried Ferrous and Steel Items	Polyamidoamine Epoxy	1	8-10 MDFT	Polyamidoamine Epoxy	1	8-10 MDFT
305	Aluminum Surfaces in Contact with Concrete	Polyamidoamine Epoxy	1	4-6 MDFT	None		
	Steel Tank	Per 09871, Coating of Steel Water Storage Tank					
	Pumps	Touch up factory applied coatings, per Pump Specifications					

* Where in contact with potable water, coating shall be NSF-61 certified.

B. Items Delivered with Factory Applied Primer:

1. For items delivered with a factory applied primer and requiring painting under this Section, the factory applied primer may be used in lieu of field applied primer only under the following conditions:
 - a. The ENGINEER approves the use of the factory applied primer in lieu of field applied primer.
 - b. The factory applied primer is certified by the Coatings Manufacturer as compatible with the field applied finish coat.

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- c. The Coatings Manufacturer's recommended recoat time for the factory applied primer has not been exceeded.
 2. If all of the above conditions are not met, the Coatings Installer shall re-prepare all surfaces to be painted in strict accordance with Coatings Manufacturer's recommendations and primer applied, in accordance with this Section.
- C. Table Definitions:
1. SF/Gal: Square foot of coverage per gallon of coating used.
 2. MDFT: mil dry film thickness
 3. mil: 1/1000 of an inch paint thickness
 4. Ferrous Pipe: Includes Ductile Iron, Cast Iron, Steel, and Galvanized Steel piping
 5. Steel Items: Includes steel and galvanized steel items such as structural steel, doors, window frames, overhead coiling doors, bollard posts, steel gates, steel fences, and all other steel and galvanized steel items.
 6. Non-Metallic Pipe: Polyvinyl Chloride, Chlorinated Polyvinyl Chloride, Fiberglass Reinforced Plastic, High Density Polyethylene
 7. Exposed: Located above grade, exposed to the atmosphere not submerged. Includes surfaces inside and outside of buildings.
 8. Submerged: In an area which normally is under water or other liquid or is intermittently under water or other liquid.
 9. Buried: Located below grade, surrounded by backfill.
- D. Surfaces Not Requiring Painting:
1. Unless otherwise stated or shown below or in other sections, the following areas or items will not require painting or coating:
 - a. Concrete surfaces.
 - b. Reinforcing steel.
 - c. Copper, bronze, brass, Monel, aluminum, chromium plate, and stainless-steel surfaces, except where:
 - 1) Required for electrical insulation between dissimilar metals.
 - 2) Aluminum and stainless steel are embedded in concrete or masonry, or aluminum is in contact with concrete or masonry.
 - 3) Color coding of equipment and piping is required.
 - d. Existing piping, fittings and pipe supports.
 - e. Pipe unions or portions of piping systems where painting would make disassembly difficult or impossible.
 - f. Prefinished electrical, mechanical and architectural items such as motor control centers, switchboards, switchgear, panelboards, transformers, disconnect switches, HVAC equipment enclosures, ductwork, acoustical tile, cabinets, louvers, and wall panels.
 - g. Electrical conduits.
 - h. Cathodic protection anodes.
 - i. Insulated piping and insulated piping with jacket will require prime coat only.
 - j. Fiberglass reinforced plastic (FRP) surfaces with an integral ultra-violet resistant colored gel coat do not require painting, provided the color is as selected.
 - k. Glass, plexiglass or other transparent or translucent material intended to allow passage of light.
 - l. Civil/site materials such as asphalt, gravel, rock, chain-link fence, and plantings.

3.4 RECOAT TIMES:

- A. Coatings Installer shall observe all requirements of the Coatings Manufacturer regarding recoat times.

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3.5 PAINT LOG

- A. Coatings Installer shall keep a paint log
 - 1. Specific details of the contents and format paint log shall be determined by the Coatings Installer and approved by the ENGINEER.
 - 2. At a minimum, paint log shall record, on a daily basis for any day when coating work is performed:
 - a. Weather conditions, including 3-day forecast
 - b. Which surfaces were prepared for coating
 - c. Approval of surface preparation by the Coatings Manufacturer representative
 - d. Which surfaces or systems were coated that day
 - e. Who the installer was (specific names of persons on crew)
 - f. Which coating type was used
 - g. Which coat was installed
 - h. What the application rate or MDFT was (as approved by ENGINEER)
 - 3. Paint log shall be kept on-site. Paint log shall be signed on a daily basis, for any day when coating work is performed, by the supervisor of the coatings installer field crew and by the ENGINEER.
 - 4. Any painted surface which was not recorded in the paint log shall be stripped, re-prepared, and recoated at the ENGINEER's discretion.

3.6 WARRANTY INSPECTION

- A. Warranty inspection shall be conducted during the eleventh month following completion of the Work. All defective Work shall be repaired by the CONTRACTOR in accordance with this Specification and to the satisfaction of the ENGINEER and at the CONTRACTOR'S expense.
- B. Any location where paint has peeled, bubbled, or cracked and any location where rusting is evident shall be considered to be a failure of the system. The CONTRACTOR shall make repair at all points where failures are observed by removing the deteriorated paint, cleaning the surface, and recoating or repainting with the same system. If the area of failure exceeds 25 percent of the total coated or painted surface, the entire coating or paint system may be required to be removed and repainted in accordance with this specification as determined by the ENGINEER.
- C. All costs for CONTRACTOR'S inspection, Manufacturer's inspection and all costs for repair shall be borne by the CONTRACTOR.

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SECTION 10340

ARCHITECTURAL SUNSHADES AND CANOPIES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Work in this section includes furnishing and installation of roll-formed aluminum overhead hanger rod style canopies as shown on the Drawings.

1.2 QUALITY ASSURANCE

- A. Qualifications:
1. Designer: Professional Civil or Structural Engineer registered in the same state as the Project.
 2. Erector: Approved by the manufacturer.
- B. Warranty: Furnish manufacturer's extended guarantee or warranty, with OWNER named as beneficiary, in writing. Warranty shall provide for correction, or at the option of OWNER, removal and replacement of Work specified in this Section found defective during a minimum period of 5 years after date of Substantial Completion. Finish will not chalk, crack, check, blister, peel, flake, chip or lose adhesion for 5 years.

1.3 SUBMITTALS

- A. Shop Drawings:
1. Drawings stamped by manufacturer's Designer:
 - a. Drawings shall be specifically prepared for this Project.
 - b. Show structural component locations and positions, dimensions, and details of construction and assembly.
 2. Structural Calculations stamped by manufacturer's Designer:
 - a. Complete analysis and design of structural components and connections in accordance with the design requirements indicated.
 3. Samples: Minimum 2-inch by 3-inch metal components requiring color selection.
- B. Product Data:
1. Manufacturer's literature and technical data.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protect components and accessories from corrosion, deformation and other damage during delivery, storage and handling.
- B. Store on wood blocking or pallets, flat and off ground, to keep clean and to prevent damage or permanent distortion. Support bundles so there is no danger of tipping, sliding, rolling, shifting, or material damage. Cover with tarpaulins or other suitable weathertight ventilated covering.

PART 2 - PRODUCTS

2.1 PRODUCT AND MANUFACTURER

- A. Products manufactured or supplied by the following, and meeting these Specifications, may be used on this Project:
 - 1. Mapes Architectural Canopies
 - a. Sunshade: SuperShade.
 - b. Canopy: Lumishade
 - 2. Or equal.

2.2 SERVICE CONDITIONS AND DESIGN CRITERIA

- A. Dead Load:
 - 1. As calculated.
- B. Live Load:
 - 1. 0 psf.
- C. Snow Load:
 - 1. 30 psf.
- D. Wind Load:
 - 1. Basic Wind Speed: 85 mph
 - 2. Exposure Category: C.
 - 3. Importance Factor: 1.15
- E. Seismic:
 - 1. Seismic Design Category: D.
 - 2. Importance Factor: 1.0.
 - 3. Site Class: D.
 - 4. Design Spectral Acceleration Parameters:
 - a. $S_{DS} = 0.613$.
 - b. $S_{D1} = 0.348$.

2.3 COMPONENTS

- A. Materials:
 - 1. Decking at sunshades shall consist of louvered blades (.110 inch extruded aluminum).
 - 2. Decking at canopies shall consist of 2-1/2 inches interlocking, roll formed .032-inch decking.
 - 3. Intermediate framing members shall be extruded aluminum, alloy 6063-T6, in profile and thickness as required by manufacturer.
 - 4. Hanger rods to be powder coated finish to match the canopy.
 - 5. Fascia shall be standard 8-inch extruded, minimum .125 aluminum, flat face (Mapes style 'J').
- B. Finishes:
 - 1. Finish: Two-Coat Kynar Finish.
 - 2. Color: Selected by OWNER.

2.4 FABRICATION

- A. All sunshades and canopies shall be factory preassembled to the greatest extent possible.
- B. All connections shall be mechanically assembled utilizing 3/16-inch fasteners with a minimum shear stress of 350 pounds. Pre-welded or factory-welded connections are not acceptable.
- C. Concealed drainage at canopies: Water shall drain from covered surfaces into intermediate trough and be directed to downspouts.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Confirm that surrounding area is ready for the canopy installation.
- B. Installer shall field confirm dimensions and elevations to be as shown on shop drawings provided by the manufacturer and the Drawings.
- C. Erection shall be performed by an approved installer and scheduled after all concrete, masonry and roofing in the area is completed.

3.2 INSTALLATION

- A. Installation shall be in strict accordance with manufacturer's shop drawings and written instructions. Particular attention should be given to protecting the finish during handling and erection.

3.3 REPAIR AND CLEANING

- A. Immediately following erection, remove unused material, screws, fasteners, and other debris from completed installation. Use caution in removing metal cuttings from surface of prefinished metal panels.
- B. Replace damaged, dented, buckled, or discolored metal panels.

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SECTION 10400

IDENTIFICATION DEVICES

PART 1 - GENERAL

1.1 CONFORMANCE WITH CITY OF ROSEVILLE PROCESS CONTROL STANDARDS

- A. Refer to City of Roseville Process Control Standards (CORPCS) for pipe, equipment, valve, conduit, wire, and other system tag naming and labeling requirements for identification requirements for these systems.
- B. The following products and installation requirements are included in the Specifications as minimum requirements and for cost estimating purposes for bidding purposes, and for items that may not be addressed in the CORPCS. Where a conflict exists between the CORPCS and this section, the CORPCS has precedence and shall be followed.
- C. Efforts were made to label all major equipment and valves. However, not all equipment and valves may be shown with tag numbers on the Drawings, such as small diameter valves included in standard details or included as part of equipment packages. Refer to CORPCS for tag numbering requirements and convention for equipment and valves not shown with tag numbers (including equipment and valves not shown on the Drawings that are shown on Shop Drawings) and propose tag numbers coordinated with established sequences for ENGINEER approval.

1.2 DESCRIPTION

- A. Scope: Furnish and install signs, placards, and labels for safety equipment, hazards, and equipment and piping identification.

1.3 SUBMITTALS

- A. Shop Drawings:
 - 1. Provide manufacturer's literature showing available letter sizes and styles, standard and custom colors, and standard mounting details.
 - 2. Provide drawings showing layouts, actual letter sizes and styles, colors, and project-specific mounting details.

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHER LOCATION SIGNS

- A. Material:
 - 1. Subsurface silkscreened graphics on a transparent acrylic sheet, 0.08" thick with Helvetica Medium alphabet and matching arrows type face.
 - 2. Provide 2" high upper-case letters and 1" high lower-case letters.
- B. Fire Extinguisher Identification Sign:
 - 1. Provide 15"x 15" with 1" radiused corners, unframed.
 - 2. Provide one for each surface mounted fire extinguisher.
 - 3. Background color shall be red with white lettering.

4. Signs shall incorporate a white directional arrow as located by ENGINEER.

C. Product and Manufacturer: Provide one of the following:

1. ASI/SPE MH (Four Corners) Plaque by ASI Sign Systems, Incorporated.
2. Or equal.

2.2 FIRE PROTECTION PLACARDS

A. Fire Protection Placards:

1. Provide diamond-shaped placards: 15" square of 0.125" rigid polyethylene.
2. The placard shall meet NFPA 704.

B. Product and Manufacturer: Provide one of the following:

1. W.H. Brady Company
2. Seton Name Plate Company
3. Or Equal

C. Provide fire protection placards in accordance with the following schedule:

LOCATION AND NUMBER OF SIGNS	MATERIAL	HEALTH	FLAMMABILITY	REACTIVITY	SYMBOL
Provide one sign at chemical pump and storage location	Sodium Hypochlorite	3	0	1	COR

2.3 MISCELLANEOUS SAFETY SIGNAGE

A. Safety signs shall comply with the following standards:

1. Occupational Safety and Health Administration (OSHA), Standards for General Industry, Subparts 1910.200 Hazard Communication (July, 1986).
2. National Fire Protection Association (NFPA) Standard No. 704 - Label System.
3. Uniform Fire Code, Latest Edition.
4. Uniform Fire Code Standard 79-3.

B. Safety signs shall be of height and width required by layout and shall be formed from semi-rigid butyrate, polyethylene or fiberglass. Lettering shall be 3-inches high and 1/2-inch in stroke.

C. Provide the following safety signs:

LOCATION AND NUMBER OF SIGNS	TEXT	BACKGROUND COLOR	LETTERING COLOR
Provide one at each eyewash safety shower location	SAFETY SHOWER/ EYEWASH	Green	White
Provide one at each above-grade motorized equipment location	CAUTION: EQUIPMENT STARTS AUTOMATICALLY	Yellow	Black
Provide one sign at each MCC and high-voltage switchboard location	DANGER: HIGH VOLTAGE	White	Black

2.4 EXIT SIGNS

- A. Material: Plastic, 1/8-inch minimum thickness.
- B. Lettering: 6 inches high, 3/4-inch stroke, white letters on red background.

2.5 IDENTIFICATION LABELS

- A. Pipe Labels and Flow Direction Arrows:
 - 1. Label, Lettering Color, Size and Placement: In accordance with ANSI A13.1, and as listed below.
 - 2. Label Colors:

Fluid Service	Background Color	Letter Color
Fire quenching fluids	Safety red	White
Toxic and corrosive fluids	Safety orange	Black
Flammable fluids	Safety yellow	Black
Combustible fluids	Safety brown	White
Potable, cooling, boiler feed, and other water	Safety green	White
Compressed air	Safety blue	White

- 3. Label Size:

Outside Diameter of Pipe Covering, inches	Length of Color Field, inches	Size of Letters, inches
3/4 to 1-1/4	8	1/2
1-1/2 to 2	8	3/4
2-1/2 to 6	12	1-1/4
8 to 10	24	2-1/2
Over 10	32	3-1/2

- 4. Label Placement:
 - a. Labels shall be positioned on the pipes so they can be easily read. Proper label placement is on the lower side of the pipe if the employee has to look up to the pipe, on the upper side of the pipe if the employee has to look down towards the pipe, or directly facing the employee if on the same level as the pipe. Labels should be located near valves, branches, where a change in direction occurs, on entry/re-entry points through walls or floors, and on straight segments with spacing between labels that allows for easy identification.
- 5. Material: Manufacture from or encase in outdoor grade plastic or vinyl that will resist damage or fading from washdown, sunlight, mildly corrosive atmosphere, dirt, grease, and abrasion.
- 6. Message: See Piping Schedule.
- 7. Labels:
 - a. Snap-Around Type: Size for finished outside diameter of pipe and insulation.
 - b. For 6 Inches and Over Diameter Pipe: May furnish strap-on type fastened without use of tools with plastic or stainless-steel straps.
 - c. Firmly grip pipe so labels remain fixed in vertical pipe runs.
- 8. Manufacturers and Products:
 - a. T & B/Westline, Rariton, NJ, Model WSS Snap-Around.
 - b. Seton Name Plate Corp., New Haven, CT, Setmark Series.

- c. Or equal.
- B. Equipment Labels:
 - 1. Applies to equipment with assigned tag numbers wherever specified.
 - 2. Lettering: Black bold face, 3/4-inch minimum high.
 - 3. Background: OSHA safety yellow.
 - 4. Materials: Either of the following:
 - a. Aluminum or stainless-steel base with a baked-on finish that is suitable for use on wet, oily, exposed, abrasive, and corrosive areas.
 - b. Fiberglass with fiberglass-encased lettering.
 - 5. Furnish 1-inch margin on each end of label for mounting. On fiberglass labels furnish grommets at each end for mounting.
 - 6. Size:
 - a. As appropriate for lettering provided.
 - b. Provide same-size labels for equipment series which are adjacent.
 - 7. Message: Equipment names and tag numbers as used in Sections where equipment is specified and/or on Drawings.
 - 8. Manufacturers and Products:
 - a. T & B/Westline Co., Rariton, NJ; Type KQ.
 - b. Seton Name Plate Corp., New Haven, CT; Style EB.
 - c. Or equal.

PART 3 - EXECUTION

3.1 INSTALLATION OF SIGNS

- A. Install Fire Extinguisher location signs at all fire extinguisher locations, approximately 12" above fire extinguisher mounting bracket.
- B. Install Exit Signs mounted to each door which leads to the outside of the building, on the panic bar side of the door, mounted to the door approximately 5'-6" above finished floor.
- C. Install all other signs at locations as shown on the drawings. Signs should be installed approximately 5'-6" off of finished floor, attached to doors where appropriate. Where two signs are indicated in the same location, signs should be mounted side-by-side, where possible.
- D. Install all signs plumb and level. They shall be attached with four stainless steel screws or anchor bolts as required for substrate. Provide theft/tamper-resistant fasteners on all signs.

3.2 INSTALLATION OF PIPE IDENTIFICATION LABELS

- A. Provide pipe identification label with flow arrows on all exposed piping systems as follows:
 - 1. At all connections to equipment, valves, tees or wall penetrations.
 - 2. At intervals along piping not greater than 18 feet on center with at least one label applied to each exposed horizontal and vertical run of pipe.
- B. Install pipe identification labels after all painting has been completed.

3.3 INSTALLATION OF EQUIPMENT IDENTIFICATION LABELS

- A. Install equipment identification labels on all equipment which has been given an equipment number in the Drawings or Specifications. Provide identification label which includes equipment name and tag number.
- B. Where no damage will be caused to equipment, mount equipment identification label directly to equipment. Otherwise, mount equipment identification labels to concrete equipment base or wall space. Install equipment identification label such that it is clear which piece of equipment is being labeled.
- C. Anchor to equipment or base for easy removal and replacement with ordinary hand tools.

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SECTION 10520
SAFETY EQUIPMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope:
1. The following safety equipment is to be provided and installed by CONTRACTOR so that it may be integrated into OWNER's safety program for operation of the facility into which it is installed.
 2. The following safety equipment does not represent a complete package of safety equipment required to operate the facility. Refer to OWNER's safety program for all required safety equipment and procedures.

1.2 SUBMITTALS

- A. Shop Drawings: Provide manufacturer's product data for each item including sizes, ratings, UL listings, OSHA certifications or other certifications, and mounting/installation information.
- B. Warranty: Provide manufacturer's 5-year warranty on all products provided.

1.3 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protect all equipment provided from all damage until such time as it is turned over to the OWNER.
- B. Safety equipment provided under this specification shall not be used by the CONTRACTOR in the construction of the facility. Safety equipment shall be turned over to the OWNER in new condition.

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHERS

- A. Provide at all locations labeled "FEXT" on Drawings.
- B. Provide Fire Extinguishers which Conform to NFPA-10 and as follows:
1. Tri-class dry chemical extinguishing agent.
 2. Pressurized, red enameled steel shell cylinder.
 3. Activated by top squeeze handle.
 4. Agent propelled through hose or opening at top of unit.
 5. For use on A, B, and C class fires.
 6. Minimum UL Rating: 4A:60B:C, 10-pound capacity.
- C. Mounting Hardware:
1. Furnish heavy-duty brackets with clip-together strap for wall mounting.
 2. Use all stainless steel fasteners for attaching brackets to wall.

- D. Manufacturers:
 - 1. Walter Kidde
 - 2. Master Protection Enterprises
 - 3. Or Equal

2.2 FALL PROTECTION EQUIPMENT

- A. Hatch Safety Net:
 - 1. Standards:
 - a. Comply with all applicable OSHA, UL, ANSI and other applicable standards.
 - 1) Including, but not limited to, OSHA 1926.502(c), safety net systems
 - 2. General Purpose:
 - a. Designed to allow visual inspection and wash down of confined space through net while preventing falls into open hatches. Designed to be easily removed for confined space entry once entrant is properly harnessed and utilizing proper retrieval system.
 - 3. Features:
 - a. Materials:
 - 1) Metallic parts shall be Aluminum and/or stainless steel
 - 2) Netting shall be UV-resistant, highly visible synthetic netting (polyester, or equal) in safety orange or safety yellow.
 - 3) Netting shall be stitched with UV-resistant PTFE thread.
 - b. Netting shall have approximately 4-inch openings to allow for visual inspection and wash-down through netting.
 - 4. Manufacturer and Product:
 - a. U.S. Netting, Hatch Net 121
 - b. U.S.F. Fabrication, Hatch Safety Net
 - c. Or equal
- B. Fall Protection Grating:
 - 1. Standards:
 - a. Comply with all applicable OSHA, UL, ANSI and other applicable standards including, but not limited to, OSHA 29 CFR 1910.23.
 - 2. General Purpose:
 - a. Designed to allow visual inspection and wash down of confined space through grating while preventing falls into open hatches.
 - b. Designed as a factory installed option to be easily opened for confined space entry once entrant is properly harnessed and utilizing proper retrieval system.
 - 3. Features:
 - a. Materials:
 - 1) Metallic parts shall be Aluminum and/or stainless steel.
 - 2) Fiberglass grating panel.
 - b. Fiberglass grating panel shall be equipped with lift assistance and automatic hold-open arm for ease of operation and user safety.
 - c. Fiberglass grating panel shall operate independently of the access cover.
 - d. Fall protection grating shall be rated for 300 psf.
 - 4. Manufacturer and Product:
 - a. The Bilco Co
 - b. Or equal
- C. Portable Davit Arm Retrieval System:
 - 1. Standards:
 - a. Comply with all applicable OSHA, UL, ANSI and other applicable standards.

2. General Purpose:
 - a. Designed to retrieve an entrant into a confined space using a standard personnel harness system.
3. Features:
 - a. 60-inch high center post with winch mounting assembly
 - b. Allows for either 18" or 24" reach on offset arm
 - c. Weight rating of 350 lbs
 - d. Safety factor of 10:1
4. Accessories:
 - a. Winch
 - 1) Designed to attach to a person that is entering or exiting from a confined space.
 - 2) Built with an internal braking system to prevent the accidental pay out of line, as well as a back-up locking pawl system to prevent "free-wheeling" of the winch.
 - 3) Cable extension (payout) should occur ONLY when the handle is turned counterclockwise AND a force of AT LEAST 10 lbs. (4.5 kg.) is applied to the line.
 - 4) The winch frame back plate attaches to a mounting plate which can then be mated to the Portable Davit Arm Retrieval System. Coordinate winch and Portable David Arm Retrieval System.
 - 5) Weight rated to 350 lbs.
 - 6) 10:1 safety factor
 - 7) 5.5:1 gear ratio single speed drive
 - 8) Retrieval rate of 23 feet per minute
 - 9) Continuous braking drive prevents free wheeling
 - 10) Double pawls on friction brake provide back-up safety
 - 11) Low wear, high temperature brake pads
 - 12) Anti-friction drive bearings
 - 13) Three permanent wraps of cable on the drum
 - 14) Level wind springs to prevent loosening of cable lays
 - 15) Slip clutch drive to prevent back-winding of cable drum
 - 16) Galvanic zinc coating of all metal parts
 - 17) Double action locking swivel snap hook
 - 18) Provide with 70 feet of stainless-steel cable
5. Flush Floor Mounted Davit Sleeve:
 - a. Provide flush floor mounted davit sleeve by same manufacturer as davit crane.
 - 1) Sleeve shall be designed specifically for davit crane and shall allow for full functionality and load rating of crane
 - 2) Sleeve and anchor bolts shall be stainless steel
 - 3) Sleeve to be designed for installation in concrete after concrete placement by core drilling a hole in the concrete and bolting sleeve to concrete floor using stainless steel chemical anchors, per manufacturer's instructions.
 - 4) Provide stainless steel debris cap with sleeve.
6. Manufacturer and Product:
 - a. Davit Crane: T.A. Pelsue Company, Model PNUH1824, or equal
 - b. Winch: T.A. Pelsue Company, Model PLPS806MR-70, or equal
 - c. Davit Sleeve: T.A. Pelsue Company, Model PNUS102B-SS, or equal
 - d. Debris Cap: T.A. Pelsue Company, Model PNUS106-SS, or equal

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2.3 LIFE PRESERVERS

- A. General: Life preservers shall be Coast Guard and SOLAS approved and designed and manufactured in accordance with 46 CFR 160.
- B. Features:
 - 1. Materials: Designed for outdoor storage and use in a corrosive environment. Made from high impact linear low-density polyethylene
 - 2. Size: 30-inch diameter
 - 3. Color: Orange
 - 4. Buoyancy: Must be such that the life preserver can support a minimum of 22-pounds for up to 48 hours in fresh Water
 - 5. Lettering: "LIFE PRESERVER" painted on in black letters, 3 inches high
- C. Manufacturers and products:
 - 1. Datrex: Model DX0300D
 - 2. Or equal

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install all safety equipment per manufacturers written instructions.
- B. Install fire extinguishers where "FEXT" is called out on the drawings, 48" above finished floor or adjacent grade.

+ + END OF SECTION + +

SECTION 11200

VERTICAL TURBINE PUMPS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Provide all materials, equipment, and accessories necessary to furnish and install multi-stage vertical turbine pumps, complete and operational with drivers, suction barrels, anchor bolting systems, and variable frequency drives where specified.
- B. The following equipment numbers have been assigned to the equipment that shall be provided. See attached pump and motor data sheets for detailed descriptions:
 - 1. Booster Pump Station
 - a. WD24_PUMP_54100
 - b. WD24_PUMP_54200
 - c. WD24_PUMP_54300
 - d. WD24_PUMP_54400

1.2 QUALITY ASSURANCE

- A. Reference Standards: Comply with requirements and recommendations of the following references, except as otherwise specified:
 - 1. Hydraulic Institute (HI)
 - 2. American Water Works Association (AWWA)
 - 3. National Electric Code (NEC)
 - 4. National Electrical Manufacturers Association (NEMA)
 - 5. Institute of Electrical and Electronic Engineers (IEEE)
 - 6. American Gear Manufacturers Association (AGMA)
 - 7. American National Standards Institute (ANSI)
 - 8. ASTM International (ASTM)
 - 9. Anti-Friction Bearing Manufacturers Association (ABMA)
 - 10. American Petroleum Institute (API)
- B. Quality Certification: Manufacturer supplying equipment furnished under this section shall hold current ISO 9001 certification.
- C. Unit Responsibility: All equipment specified herein shall be coordinated and provided by the pump manufacturer. Manufacturer assumes full responsibility for coordination of all components.
- D. Factory Tests: The selected manufacturer shall provide the following factory tests for approval upon acceptance of shop drawings:
 - 1. Provide the ENGINEER with 2-weeks advance notification in writing of the test schedule. The CONTRACTOR is advised that the factory tests may be witnessed by the OWNER and/or ENGINEER.
 - 2. Provide manufacturer's standard functional test on all equipment.
 - 3. Performance Test:
 - a. Conduct on each pump in conformance with the test standards and procedures specified in the Hydraulic Institute Standards and ANSI/AWWA E101.

- b. Conduct the test using complete pump bowl assembly at manufacturer's minimum submergence, from shut-off head to maximum capacity. Record resulting curve showing head, flow, brake horsepower, speed, pump efficiency, and net positive suction head required (NPSHr). Plot results for a minimum of seven (7) evenly spaced measurements, including shut-off head, primary design point, best efficiency point, and maximum capacity.
- c. Pump performance results compared to rated speed and capacity at the primary design point shall be within tolerances specified by Hydraulic Institute Standards.
- d. Pumps shall not be shipped prior to ENGINEER's approval of test results.
- 4. Hydrostatic Test: test discharge heads and bowl assemblies at either twice the total dynamic head or one and a half times the shutoff head, whichever is greater.
- 5. Motor Test: Provide short commercial motor test per IEEE 115.

E. Warranty:

- 1. Provide a 1-yr warranty on all equipment from date of start-up. Warranty shall cover defects in workmanship, design, and materials. If any component should fail during the warranty period, it shall be corrected and the unit restored to service at no expense to the OWNER.

1.3 SUBMITTALS

A. Submit the following items to the ENGINEER for approval:

- 1. Shop drawings:
 - a. Detailed drawings showing component and assembly dimensions, location of mechanical and electrical connections, weights of all equipment, installation details, and accessory details.
 - b. Power and control wiring diagrams, including terminals and numbers.
 - c. Drawings, templates and directions for installation of anchor bolts.
- 2. Product data:
 - a. Descriptive literature, specifications, and engineering data.
 - b. Materials of construction for all components and accessories.
 - c. Impeller type and diameter, including rated diameter and minimum and maximum diameter available for the pump model.
 - d. Pump weight, motor weight, and complete assembly weight.
 - e. Complete motor nameplate data, as defined by NEMA.
 - f. Where specified, complete variable frequency drive information.
 - g. Factory finish system description.
 - h. Critical speeds of the pumps supplied.
 - i. Motor data:
 - 1) Test results
 - 2) Motor manufacturer
 - 3) Type
 - 4) Enclosure
 - 5) Service Factor
 - 6) Phase
 - 7) Voltage
 - 8) Rated Horsepower
 - 9) Speed
 - 10) Full load and locked rotor amperage
 - 11) Temperature rating
 - 12) Estimated bearing life under design conditions.
 - 13) Minimum efficiency at $\frac{1}{4}$, $\frac{3}{4}$, and full load.
 - 14) Descriptive literature including description of motor insulation.

3. Performance data:
 - a. Pump rated speed.
 - b. Rated and maximum pump horsepower, and driver horsepower.
 - c. Casing working pressure.
 - d. Minimum submergence.
 - e. Maximum down and up thrust.
 - f. Efficiency and NPSHr at each specified operating condition.
 4. Submit Pump Performance Curves:
 - a. Provide pump curves showing head, brake horsepower, pump efficiency, and NPSHr and capacity, for the entire operating range of the pump.
 - b. Correct curves for pump losses and shaft friction horsepower losses. Include pump losses, column and discharge head losses.
 - c. All curves shall clearly display the specified operating conditions and the manufacturers Allowable Operating Region (AOR) and Preferred Operating Region (POR) as defined under ANSI/HI 9.6.3.
 - d. Where variable speed drives are specified, curves shall have at least five (5) speeds plotted between maximum and minimum speed.
 - e. Speed shall be clearly shown on all curves.
 5. Manufacturer's Certificate of Proper Installation.
 6. Operations and Maintenance Manuals: The selected manufacturer shall provide six sets of operation and maintenance manuals for the equipment provided. The manuals shall contain the following information at minimum:
 - a. Equipment description.
 - b. Recommended and limiting operational range.
 - c. Installation instructions including assembly, alignment, and adjustment procedures.
 - d. Operation instructions including start-up and shutdown procedures, and troubleshooting guide.
 - e. Lubrication and regular maintenance instructions.
 - f. Shop drawings.
 - g. Parts list with catalog numbers.
 - h. Performance curves.
- B. Quality Control Submittals:
1. A list of any and all instances where the equipment proposed deviates from these specifications.
 2. Names and addresses of the factory authorized service organization nearest to project site.
 3. Guarantee pump efficiency and NPSHr at the specified operating points.
 4. Upon approval of shop drawings, manufacturer shall provide certified copies of factory test reports for functional, performance and hydrostatic tests as specified.
 5. Upon approval of shop drawings, manufacturer shall provide printed installation instructions.

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. All equipment and accessories shall be properly protected during shipment such that no damage or deterioration shall occur between shipment and installation.
1. Finished surfaces shall be protected by wooden blanks.
 2. Finished ferrous metal surfaces not painted shall be protected from corrosion.
 3. Each box and package shall be clearly marked with the contents and total weight.

- B. Factory assembled parts and components shall not be dismantled for shipment until permission is received in writing from the ENGINEER.
- C. Manufacturer shall provide any special storage and handling instructions.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Provide pumps with performance curves with constantly increasing head from maximum capacity to shut-off head.
- B. Pumps shall rotate counter-clockwise when viewed from above.
- C. Balancing: Pump assemblies shall be dynamically and statically balanced. Vibration at any point of pumps operation shall not exceed the upper limits of the Hydraulic Institute Standards.

2.2 PRODUCT AND MANUFACTURER:

- A. Weir Floway (Basis of Design):
 - 1. Model 16DKL/N, 2 Stage, 10.38-in impeller diameter
- B. Fairbanks Morse
- C. Flowserve
- D. Or Equal

2.3 SERVICE CONDITIONS AND PERFORMANCE

- A. See attached data sheets for service conditions and performance requirements.
- B. Pumps shall have capacity no less than 98% and no greater than 103% of the specified capacity at each of the total dynamic head operating conditions shown.

2.4 COMPONENTS

- A. Coatings:
 - 1. Exterior of discharge head and motor shall be painted desert color. Prepare surfaces to be painted per coating manufacturer's requirements.
 - a. Primer: 2 coats polyamidolamine epoxy, 4-6 mil thickness
 - 1) Series N69, Hi-Build Epoxoline II
 - 2) Or Equal
 - b. Polyurethane: 1 coat Aliphatic Acrylic Polyurethane designed for exterior weathering, abrasion and corrosion resistance, 2-3 mil thickness
 - 1) Series 73, Endura-Shield
 - 2) Or Equal
 - 2. All wetted ferrous metal surfaces, including interior and exterior of suction barrel, exterior of bowl assembly, interior and exterior of column, and interior of discharge head shall be coated with an ANSI/NSF STD 61 approved bonded epoxy, minimum

thickness 8-10 mils. Prepare surfaces to be painted per coating manufacturer's requirements.

a. Coatings:

- 1) Tnemec Pota-Pox Plus Series N140
- 2) Or Equal

B. Fasteners: Provide Type 316 stainless steel fasteners, bolts, nuts and washers conforming to ASTM A276 where exposed to liquid and where fasteners contact tapped holes.

C. Suction Flange:

1. Material: Fabricated steel conforming to ASTM A36 & A53.
2. Location: below grade on suction barrel.
3. Flange rating shall be ANSI 150# minimum.

D. Suction Barrel:

1. Fabricated steel conforming to ASTM A36 & A53.
2. Barrel shall have 1/4-inch minimum wall thickness.
3. Suitable for encapsulation in concrete with mortar conforming to AWWA C205.
4. Flanged mount for discharge head assembly designed to withstand 150% of maximum operating thrust loads.
5. Manufacturer shall be responsible for verification of barrel dimensions to provide acceptable hydraulic conditions at column inlet and minimal vibration per ANSI/HI 2.3.
6. Barrel shall include internal guide vanes to prevent fluid rotation.
7. Barrel shall include four (4) leveling bolts for field leveling. Leveling bolt assembly shall include steel angles and nuts welded to the bottom-exterior of the suction barrel with steel bolts, or other method as approved by ENGINEER.
8. At minimum, suction barrel shall be sized to accept one inch larger diameter bowls and one additional stage.
9. Provide one suction barrel per pump, plus suction barrel for future pump.

E. Suction Bell:

1. Material: ASTM A48 Class 30.
2. Internal vanes shall be provided.

F. Column:

1. Material: Fabricated steel conforming to ASTM A36.
2. Flanged connections shall be provided at column section, bowl, and discharge head connections.
3. Provide O-ring seals at all flange connections.
4. Column section length shall be five (5) ft maximum.
5. Align and support lineshaft bearings.
6. Column diameter:
 - a. Outside diameter shall match standard pipe outside diameters as specified in ANSI B36.10
 - b. Columns 6-inch in diameter and less shall be at least Schedule 40
 - c. Columns 8-inch to 16-inch shall be at least Schedule 30
7. The column pipe shall be sized such that the friction loss will not exceed 5 feet per 100 feet, based on the rated capacity of the pump.

G. Bowl Assembly:

1. Bowls shall be cast iron conforming to ASTM A48, Class 30, with a minimum tensile strength of 30,000 psi.
 2. Interior of bowls shall be lined with porcelain enamel or abrasion resistant epoxy.
 3. Where specified, each bowl shall have thrust-balanced replaceable wear rings with side seal to prevent slippage.
 - a. Material shall be ASTM B505 aluminum bronze, composite, or stainless steel conforming to the requirements of API 610.
 4. Bolted flange connections shall be provided between bowls with O-ring seals.
 5. Bowl bearings shall be bronze conforming to ASTM B505, C93200
 6. Bowls shall be able to withstand the greater of twice the total head or one and a half times the shutoff head.
- H. Impellers:
1. Material: ASTM B584 C83800 bronze alloy.
 2. Enclosed or semi-open design.
 3. Securely fasten impellers to impeller shaft with Type 416 stainless steel tapered lock collets.
 4. Impellers shall be vertically adjustable using an adjustable spacer coupling accessible through the discharge head openings.
- I. Shaft
1. Material: 416 stainless steel conforming to ASTM 582
 2. Shaft sizing shall conform to ANSI/AWWA E101-88, and shall be of sufficient size to prevent excessive elongation and transmit required torque without distortion in both forward and reverse direction.
 3. Maximum combined shear stress shall not exceed 30% of the elastic limit in tension or be more than 18% of the ultimate tensile strength of the shaft material.
 4. Shaft shall have a first critical speed not less than 20% above maximum operating speed.
 5. A two-piece headshaft and solid intermediate line shaft shall be provided.
 6. Maximum section length shall be ten (10) feet.
 7. Minimum of two line shaft bearings shall be provided.
 8. Maximum spacing of bearing intervals shall be 5 feet.
 9. Line shaft couplings shall be ASTM 582 416 stainless steel, left-hand threaded type with perfect butt-fit. Couplings shall be designed with safety factor equal to 1.5 times the shaft safety factor.
 10. Shaft bearings shall be neoprene or bronze, lubricated by the pumped liquid.
- J. Shaft Seal:
1. Cartridge style mechanical seal with adjustable spacer coupling shall be provided in discharge head at terminus of lineshaft.
 2. Material:
 - a. Metal parts: 316 stainless steel.
 - b. Seal faces shall be tungsten carbide or sintered silicon carbide.
 - c. Elastomer bellows secondary seal.
 3. Manufacturer:
 - a. Environamics
 - b. Flowserve ISC Series
 - c. Crane
 - d. Or Equal
- K. Discharge Head Assembly:
1. Location: above grade

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2. Assembly shall be of sufficient design to support the entire weight of pump assembly and NEMA rated driver and transmit all loads to the foundation with minimum vibration.
 3. Material: Fabricated steel conforming to ASTM A36 & A53 or cast iron conforming to ASTM A48 C30.
 4. Discharge head natural frequency shall be elevated above maximum operating speed.
 5. Discharge flange rating shall conform to AWWA C207 for fabricated steel, or ANSI B16.1 Class D 150# minimum for cast iron.
 6. Openings shall be screened to prevent access to rotating equipment.
- L. Mounting Plates:
1. Manufacturer shall provide all supporting sole plates and fabricated steel base plates necessary to properly mount the equipment.
- M. Equipment Identification Plate: 16-gauge stainless steel with the following information at minimum:
1. Equipment number.
 2. Manufacturer's model and serial number.
 3. Rated capacity and discharge head.
 4. Speed.
- N. Motors
1. Motors shall be solid shaft, squirrel-cage induction motors meeting the requirements of NEMA MG 1.
 2. Motor manufacturer shall be ISO9000 certified.
 3. Where variable frequency drives are specified, motor shall be inverter duty.
 4. Motors shall be adequately sized to prevent overload above nameplate horsepower at maximum pump brake horsepower.
 5. Motors shall have the following guaranteed minimum efficiencies at full load as determined by IEEE 112-B:
 - a. 100 hp and above: 92%
 6. Motors shall have minimum power factor of 87%.
 7. Totally Enclosed Fan-Cooled enclosures shall be provided.
 8. Provide thrust bearings with a minimum L-10 life of 30,000 hours, as defined by AGMA, at the worst operating condition.
 - a. Minimum L-10 bearing life at normal operating conditions shall be 60,000 hours.
 9. Manufacturer's recommended bearing lubrication shall be provided.
 10. Where specified motors shall be provided with normally closed thermostat switches.
 - a. Switch shall shutdown the motor upon exceedance of the motor's maximum temperature rating.
 11. Where bearing thermostat switches are specified, motor and bearing thermostat contacts shall be wired in series and leads shall be wired to the motor terminal box.
 12. Where specified motors shall be provided with 120V single phase space heaters wired to a terminal box.
 13. Where specified motors shall have a vibration switch with automatic alarm and shutdown limits.
 - a. Provide adjustable time delay to prevent nuisance trips.
 14. Provide oversized terminal box with terminal for connection of equipment grounding wire.
 15. Provide stainless steel nameplate with the following information, at minimum:
 - a. Manufacturer's name, make, and serial number
 - b. Type
 - c. Voltage

- d. Frame
- e. Insulation
- f. Class
- g. HP
- h. Full load amps
- i. RPM

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Factory TestS: Performed by Manufacturer in the presence of ENGINEER or OWNER, per Quality Assurance Section above.
- B. Manufacturer's representative shall inspect and approve the installation before operation.
- C. Installation Test: Performed by manufacturer's representative in the presence of ENGINEER or OWNER
 - 1. Functional test complete assemblies for proper alignment, connection, and operation.
 - 2. Vibration Test: Results shall not exceed Hydraulic Institute Standards recommendations.
 - a. Test from shut-off head to maximum capacity.
 - b. Units exceeding the vibration limit recommendations of the Hydraulic Institute Standards shall be adjusted or modified as necessary. Units which can not meet Hydraulic Institute Standards shall be replaced.
 - 3. Installation Performance Test shall be conducted in conformance with Hydraulic Institute Standards ANSI/HI 2.6-2000. Conformance with performance requirements shall be verified.
 - 4. Monitor bearing and motor temperatures during all tests and correct overheating if necessary.

3.2 MANUFACTURERS SERVICES

- A. Pump manufacturer shall provide the services of an authorized service representative for not less than four (4) days, for the following:
 - 1. One (1) day for installation assistance.
 - 2. Two (2) days for inspection of installation, start-up instruction, performance testing supervision, and adjustment assistance.
 - 3. One (1) day for training of OWNER's personnel.

+ + END OF SECTION + +

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Section 11212
Pump and Drive Data Sheet

Project	West Side Tank and Pump Station Project
Equipment Numbers	WD24_PUMP_54100, _54200, _54300, _54400
Equipment Location	Booster Pump Station
Drive Description:	
Drive Type	Pumps -100 & -300 VFD Pumps -200 & -400 Soft Starter (RVSS)
Motor	3 PH, 460V, 60 HZ
Motor Horsepower	250 hp
Pump Description:	
Pump Type	Canned Vertical Turbine
Bowl Size	16 in
Number of Stages	2, minimum
Suction Can Diameter	30 in
Suction Flange Size	24 in
Discharge Size	16 in
Operating Conditions:	
Liquid Pumped	Potable water
Temperature	50 to 80 degrees F, 60 deg average
Site Altitude	100 ft
Pump Operating Conditions:	
Pump Rated Speed	1770 rpm
Minimum NPSHa	33.8 ft
Minimum Continuous Stable Flow	925 gpm
Minimum Shutoff Head	320 ft
Pump Design Points:	
1 st Operating Point:	
Capacity (gpm)	3800 gpm
Total Dynamic Head (ft)	170 ft
Minimum Efficiency	80%
2 nd Operating Point:	
Capacity (gpm)	3000 gpm
Total Dynamic Head (ft)	200 ft
Minimum Efficiency	78%
3 rd Operating Point:	
Capacity (gpm)	1000 gpm
Total Dynamic Head (ft)	250 ft
Minimum Efficiency	35%
Appurtenances:	
Motor Winding Temperature Switch	Yes
Bearing Thermostat Switch	No
Vibration Transmitter	Yes
Wear Rings	Yes

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SECTION 11268

RESERVOIR HYDRODYNAMIC MIXING SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Hydrodynamic Mixing System (HMS) is defined as a supplemental system installed within a potable water storage reservoir which passively utilizes the energy provided by the inlet water supply (via pumped or gravity head) and generates a sufficient inlet momentum to achieve a complete homogeneous blending of the water volume within the reservoir with the inlet supply flow. Determination of Complete Homogeneous Blending shall be defined by the modeling requirements and supporting hydraulic analysis as conducted by each individual manufacturer for their specific system configuration as defined within these specifications. System submittals not providing this validation shall not be considered as a viable Hydrodynamic Mixing System (HMS) and shall not be accepted as an equivalent to this system specification.
- B. The specifications in this section include all components of the Reservoir Hydrodynamic Mixing System (HMS) consisting of flow manifold equipped with variable orifice duckbill inlet nozzles that are certified. The HMS manufacturer shall be responsible for designing the system in accordance with the hydrodynamic criteria defined within these specifications and submit design calculations verifying compliance in accordance with the submittal requirements. The following is a description of the Hydrodynamic Mixing System.
- C. All modeling and hydraulic and mixing calculations pertaining to the HMS shall originate from the duckbill valve manufacturer. Modeling and calculations provided by parties other than the duckbill valve manufacturer are not allowed.
- D. The complete Hydrodynamic Mixing System shall be supplied by the variable orifice nozzle manufacturer to maintain single source responsibility for the system. The complete system shall be defined as all piping and appurtenances within the tank downstream of the tank penetration. Appurtenances include pipe, fittings, horizontal and vertical pipe supports, expansion joints, variable orifice duckbill check valves, and any other equipment specified within this section of the specifications. Approved manufacturer is Tideflex Technologies, Carnegie, PA 15106.
- E. The following describes the design principles of the Hydrodynamic Mixing System and the validation of its effectiveness:
 - 1. To not have any horizontal piping that requires bracing to the tank shell other than at the bottom of the reservoir.
 - 2. To be passive operating and not require any outside energy source.
 - 3. To utilize the existing differential pressure between distribution system pressure and tank head to fill the reservoir thru the inlet nozzles.
 - 4. To achieve complete mixing via multiple turbulent inlet jets (Jet-induced mixing).
 - 5. To utilize variable orifice inlet nozzles that provides a non-linear jet velocity versus flow characteristic. This maximizes the inlet momentum at all flow rates. The inlet momentum is the kinetic energy solely responsible for mixing. This also

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ensures the rise height of negatively buoyant inlet jets will be maximized when the inlet water is colder than the tank water.

6. To have less than ten (10) inlet ports.
7. To have inlet ports that discharge an elliptically shaped jet that provides faster mixing and dilution of the inlet water into the tank water.
8. To have a configuration based on Computational Fluid Dynamics (CFD) modeling, conducted by the manufacturer, of a similar configuration in the same tank style.
9. To have multiple sampling studies conducted by water utilities that have conducted "before" and "after" spatial sampling of disinfectant residual and/or temperature that have proven the effectiveness of the HMS. Data can be submitted based upon the request of the engineer.

1.2 SUBMITTALS

A. Independent CFD Modeling Validation

1. The mixing system designer/supplier must supply data or report from at least one project where an independent company conducted CFD modeling on their mixing system design and the modeling results verified the design achieved complete mixing.

B. Full Scale Tracer Study Validation

1. The mixing system designer/supplier must supply data or report from at least one project where a full scale tracer study using calcium chloride was conducted on a circular reservoir and the tracer study results verified the mixing system design achieved complete mixing.
2. The mixing system designer/supplier must supply data or report from at least one project where a full scale tracer study using calcium chloride was conducted on an elevated tank and the tracer study results verified the mixing system design achieved complete mixing.

C. Tideflex Inlet Nozzle and Waterflex Outlet Valve Testing and Validation

1. Verification of independent hydraulic testing to determine headloss and jet velocity characteristics on a minimum of eight (8) sizes of duckbill valves ranging from 2" through 48". The testing must include multiple constructions (stiffness) within each size and must have been conducted for free discharge (discharge to atmosphere) and submerged conditions.
2. Verification of Independent Laboratory Testing for Manufacturing Consistency - the duckbill valve manufacturer shall provide summary documentation of a report conducted by an Independent Laboratory for hydraulic testing where multiple duckbill valves (at least four) of the same size and construction (stiffness) were tested to validate the submitted headloss characteristics and to prove the repeatability and consistency of the manufacturing process to produce the same hydraulic characteristics.
3. Report of independent testing that studied the flow distribution characteristics of duckbill valves installed on multiport manifolds. The manufacturer must have been in the business of manufacturing duckbill valves at the time the report was published.
4. Verification of Finite Element Analysis (FEA) of duckbill valves. The duckbill valve manufacturer shall provide summary documentation of Finite Element Analysis modeling on representative duckbill nozzle sizes to determine deflection, stress and strain characteristics under various load conditions. Modeling must have been done for flowing conditions (positive differential pressure) and reverse differential pressure.

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5. Verification of independent hydraulic testing to determine headloss characteristics on a minimum of three (3) sizes of perforated disc/elastomeric membrane check valves ranging from 6" through 36". Testing must have been conducted with and without the membrane installed. At least two (2) sizes shall have tested two (2) different membrane thicknesses.
 6. Verification of Finite Element Analysis (FEA) modeling on a perforated disc/elastomeric membrane check valve to determine stress and deflection characteristics under reverse differential pressure.
- D. Validation of Long-term performance
1. The mixing system designer/supplier must supply at least one inspection report showing proper operation of, and no deterioration of, the duckbill valves after being in service in a water storage tank mixing application for a minimum of 10 years.
- E. ANSI/NSF 61 Certification
1. Copy of the Certified listing for the valves used in the Hydraulic Mixing System (HMS).
 2. The valves themselves must be NSF61 certified, not just the elastomer used in construction of the valves. NSF61 approved/certified materials will not be accepted in lieu of valve certification.
 3. The NSF61 Certification for the valves must be for a minimum volume of 2,000 gallons. Valves with NSF61 Certification for minimum volume of greater than 2,000 gallons are not acceptable.
- F. Test Report on Elastomer Exposure to Chlorine and Chloramine
1. Copy of test report from an accredited independent laboratory that confirmed there is no degradation in the elastomer when exposed to chlorine and chloramine per the ASTM D471-98 "Standard Test Method for Rubber Property – Effect of Liquids."
- G. System Installation Drawings
1. The HMS manufacturer shall be responsible for providing engineering installation drawings of the complete manifold piping system as supplied by the manufacturer. These drawings shall include plan view piping arrangement, sections and elevations as required, support bracket installation details, duckbill nozzle orientation details, and all dimensions required for locating the system within the specified dimensions of the tank.
- H. Design Calculations
1. All Design Calculations, curves, and reference information listed below must originate and be submitted by the duckbill valve manufacturer. Calculations, curves, and reference information provided by contractors relating to the HMS are not allowed. The duckbill valve manufacturer must include within the submittal package the following design calculations, curves, and reference information:
 2. Calculations showing the fill time required, under isothermal conditions, for the HMS system to achieve complete mix of the reservoir volume at minimum, average and peak fill rates. Complete mixing defined as 95% homogenous solution. The theory and equations used in calculating the mixing times must be from a published AWWA reference manual or paper. The reference document(s) must be submitted with the equations and calculations.
 - a. Calculations showing the water level drawdown required to achieve complete mixing on the fill cycles at minimum, average, and peak flow rates.

- b. Calculations of average storage tank water age for both fill-then-draw, and simultaneous fill and draw scenarios. Theory used in calculating water age must be submitted with the calculations.
- c. A representative Computational Fluid Dynamics (CFD) model evaluation of the proposed HMS system configuration applied within a reservoir of similar geometry. Model output documentation shall include all design variables applied for the simulation, plot of the 3-D geometry showing the mesh definition, velocity magnitude vector and contour plots at different cross-sections throughout the water volume, simulated tracer animations showing the spatial and temporal distribution of inlet water in real time during the fill cycle.
- d. Hydraulic calculations showing the resulting jet velocities of each inlet nozzle at minimum, average, and peak fill rates.
- e. Hydraulic calculations showing the flow distribution among all inlet ports at minimum, average, and peak fill rates.
- f. Manifold hydraulic calculations showing the total headloss of the HMS at minimum, average, and peak fill and draw rates. Headloss shall include all minor losses and headloss of nozzles and outlet check valves.
- g. Hydraulic curves showing thrust vs. flow for the inlet nozzles.
- h. Hydraulic curves for each outlet check valves showing headloss vs. flow.
- i. Calculations showing the terminal rise height of the jets that discharge at an angle above horizontal. The terminal rise height shall be calculated assuming 10°F and 20°F colder inlet water and calculated at minimum, average and peak fill rates. The theory and equations used to calculate the terminal rise height shall be included.
- j. Hydraulic curves for each inlet nozzle of Densimetric Froude number vs. flow
- k. If the calculations and supporting data provided do not show compliance with the hydrodynamic requirements of the system as interpreted by the Engineer or Owner then the submittal shall be rejected.

1.3 INSTALLATION, OPERATION AND MAINTENANCE MANUALS

- A. The manuals shall be in the following format and include the listed required information as a minimum:
 - 1. Enclosed in a 3-ring binder with project title and system designation shown on the front cover and side binder.
 - 2. Table of contents
 - 3. Copy of design calculations for the manifold system as defined in the previous section.
 - 4. Copy of complete set of the installation plans.
 - 5. Copy of Certified Listing for the valves
 - 6. Parts and equipment list with specification numbers for ordering of replacement parts.
 - 7. Product specification sheets for nozzles, expansion joints, concrete anchors, and any other specialized items supplied with the system.
 - 8. Installation guidelines for the HMS manifold system.
 - 9. Operational procedures for the HMS manifold system.
 - 10. Guidelines for repair of system components.
 - 11. Schedule for suggested periodic maintenance of the manifold system.

1.4 DELIVERY, STORAGE, AND MATERIAL HANDLING

- A. Individual nozzles shall be packaged separately from the piping equipment.

- B. All flanges shall be protected by using plastic inserts or plank wood, pipe sections are to be fully supported to prevent pipe deflection or damage to fittings or connections.
- C. All equipment shall be shipped on pallets capable of fully supporting the pipe sections across their entire length. Pallets should be accessible for fork lift transport or strap and hoist means without causing any load to the pipe equipment.
- D. All stainless steel components shall be stored separately away from any carbon steel components or other materials that could stain or deface the stainless steel finish from run-off of oxidized ferrous materials.
- E. All pipe equipment should be covered and stored in areas free from contact with construction site sediment erosion to prevent accumulation of materials within the pipe and fittings.
- F. Duckbill nozzles should be protected from contact with rigid objects during handling and storage. The contractor shall be responsible for replacing any duckbill nozzles or elastomeric components that are damaged after arrival on the site through installation and start-up of the system.

PART 2 - PRODUCTS

2.1 VARIABLE ORIFICE DUCKBILL INLET NOZZLES

- A. Inlet ports/nozzles shall be duckbill-style check valves that allow fluid to enter the reservoir during fill cycles and prevent flow in the reverse direction through the nozzle during draw periods. Inlet ports/nozzles may not be fixed-diameter ports or pipes.
- B. Inlet ports/nozzles shall have a variable diameter versus flow hydraulic profile that provides a non-linear jet velocity versus flow characteristic and a linear headloss versus flow characteristic. The hydraulic characteristics of the duckbill valves shall be defined by "Hydraulic Code".
- C. The inlet ports/nozzles shall discharge an elliptically shaped jet. The nozzle must have been modeled by an independent laboratory using Laser Induced Fluorescence (LIF).
- D. Manufacturer shall have conducted independent hydraulic testing to determine headloss and jet velocity characteristics on a minimum of eight (8) sizes of duckbill valves ranging from 2" through 48". The testing must include multiple constructions (stiffness) within each size and must have been conducted for free discharge (discharge to atmosphere) and submerged conditions.
- E. Manufacturer shall have conducted an independent hydraulic test where multiple valves (at least four) of the same size and construction (stiffness) were tested to validate the submitted headloss characteristics and to prove the repeatability of the manufacturing process to produce the same hydraulic characteristics.
- F. Manufacturer shall have conducted independent hydraulic testing to study the flow distribution characteristics of duckbill valves installed on multiport manifolds.

- G. Manufacturer to have conducted Finite Element Analysis (FEA) on various duckbill valves to determine deflection, stress, and strain characteristics under various load conditions. Modeling must have been done for flowing conditions (positive differential pressure) and reverse differential pressure.
- H. Manufacturer must have conducted in-house backpressure testing on duckbill valves ranging from ¾" to 48".
- I. Manufacturer shall have at least fifteen (15) years experience in the manufacturing of "duckbill" style elastomeric valves.
- J. Manufacturer must have duckbill valves installed on manifold piping systems in at least 100 distribution system reservoirs.
- K. Manufacturer must have representative inspection videos showing the duckbill valves discharging water into the reservoir during an initial fill (unsubmerged). Manufacturer must also have representative underwater inspection videos showing the operation of the valves when submerged. Representative videos can be submitted upon request from the engineer.
- L. The duckbill style nozzles shall be one-piece elastomer matrix with internal fabric reinforcing designed to produce the required discharge velocity and minimum headloss requirements as stipulated in the Submittals section. The flange portion shall be an integral portion of the nozzle with fabric reinforcing spanning across the joint between the flange and nozzle body.
- M. The elastomer used in construction of the duckbill valves must have been tested by an accredited independent laboratory that confirmed there is no degradation in the elastomer when exposed to chlorine and chloramine per the ASTM D471-98 "Standard Test Method for Rubber Property – Effect of Liquids."
- N. The manufacturer's name, plant location, serial number and product part number which designates nozzle size, material and construction specifications shall be bonded onto the surface of the nozzle.

2.2 STAINLESS STEEL PIPE AND FITTINGS

- A. Stainless steel pipe and fittings shall conform to the associated standards.
- B. Dimensions for stainless steel fittings shall conform to AWWA C110, unless otherwise specified.
- C. Piping shall be Schedule 10s stainless steel 304L fabricated from material per ASTM-A240.
- D. All flanges shall be plate ring flanges. Flange drilling pattern shall be in accordance with ANSI B16.1/B16.5 standards.
- E. Ring flanges shall be continuously welded on both sides.
- F. All shop welds shall be manually scrubbed or brushed with non-metallic pads or stainless steel wire brushes to remove weld discoloration. Welds to be chemically passivated with nitric or citric acid.

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- G. Field welding of stainless steel pipe and fittings will not be allowed unless approved by the Engineer.

2.3 FLANGE GASKETS

- A. Flange gaskets shall be full-faced and shall be in accordance with ASTM D1330.
- B. Flange gasket drilling pattern shall conform to ANSI B16.1/B16.5.
- C. Flange gaskets shall be 1/8" thick.
- D. Gasket material shall be EPDM.

2.4 FASTENERS

- A. Hex head bolts and nuts shall be stainless steel 316 conforming to ANSI/ASME B18.2.1 and ANSI/ASME B18.2.2.

2.5 PIPE SUPPORTS

- A. All components of the bracket assembly shall be stainless steel 304 in accordance with the associated standards.
 - 1. The bracket assemblies shall consist of four components:
 - 2. A base plate. For concrete tanks, the base plate will have four thru holes for expansion anchors.
 - 3. A top-works weldment that consists of structural channel and angle iron. The TMS piping shall rest on the angle iron. The angle iron has predrilled holes for the U-bolt.
 - 4. U-bolt with four hex nuts.
 - 5. An 1/8" thick EPDM strip with a length equivalent to the circumference of the pipe. The strip shall be placed between the pipe and the angle iron and U-bolt.
- B. The channel of the top-works weldment shall be field fit and modified to the required length. The channel shall then be field welded to the base plate.
- C. For concrete tanks, the support shall be anchored to the concrete floor with stud type expansion anchors, the pull-out rating of the combined anchors shall be a minimum of 10 times greater than the static weight of the vertical pipe section.

2.6 DRAIN

- A. Provide a 1 inch drain on the inlet pipe 4-inches above where the TMS attaches to the tank floor. The drain shall have a ball corporation valve.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation of the manifold system shall be in accordance with the installation plans and guidelines provided by the HMS manufacturer and as specified in the installation section of the IOM manual. Refer to section on Submittals for quantities and delivery schedules of the documents.

3.2 START-UP AND TESTING PROCEDURES

- A. The TMS manufacturer shall provide one (1) day start-up services by a factory representative to verify that the system has been installed in accordance with the design specifications and requirements listed within this section.

3.3 START-UP FLOW TESTING

- A. Following installation of the complete manifold piping system, the contractor shall open the upstream isolation valve to allow flow into the tank through the manifold system. The isolation valve must be opened slowly to prevent surge or over-pressurization of the manifold system. The isolation valve must be fully opened to inspect the flow characteristics of the manifold system.
- B. The contractor and factory representative shall visually inspect the entire piping system for leakage.
- C. The contractor and factory representative shall visually inspect all of the inlet nozzles to ensure flow is being discharged into the tank through all nozzles.

3.4 SPARE PARTS

- A. Spare parts are not required, unless otherwise specified.

3.5 WARRANTY

- A. The complete manifold piping system shall be supplied by the HMS manufacturer to maintain single source responsibility for the system. The complete system shall be defined as all piping and appurtenances within the tank downstream of the tank penetration. Appurtenances include pipe, fittings, horizontal and vertical pipe supports, expansion joints, duckbill valves, and any other equipment specified within this section of the specifications.
- B. All piping, pipe support brackets, joint connections, expansion joints, and anchors shall be warranted by the HMS manufacturer against failure under design conditions for a period on one (1) year from the date of final installation approval by the Engineer.
- C. Inlet nozzles shall be warranted by the manufacturer against failure under design operating conditions for a period of one (1) year from the date of final installation approval by the Engineer. Elastomer components damaged because of maintenance activities, foreign debris, or excessive exposure to direct ultraviolet and thermal radiation shall be excluded warranted coverage.

+ + END OF SECTION + +

SECTION 11405

CHEMICAL METERING PUMP SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: This specification covers the supply and testing of completely functional, skid-mounted chemical metering pump systems. The chemical metering pump system shall include skid assembly containing chemical metering pumps, integral electric motors, controls, integral variable speed drives, valves, meters, control panels and all necessary piping, fittings, supports and accessories as shown on the Drawings and specified herein. The chemical metering pump system supplier shall be responsible for supplying all components of the skid-mounted chemical metering pump system.

1.2 QUALITY ASSURANCE

- A. A single metering pump system supplier shall be responsible for the assembly, supply and coordination of all equipment and appurtenances specified herein.
- B. System supplier shall provide reference list of no less than three installations where fully integrated chemical metering pump systems were provided.
- C. Provide a factory operational and performance test on the pre-assembled system and documentation of results prior to shipment.
- D. Provide operational and performance field test.
- E. Warranty: The chemical metering pump system supplier shall provide a two-year warranty on the metering pump mechanical drive and a one-year warranty on the liquid end, pump accessories, and the skid-mounted system.

1.3 SUBMITTALS

- A. Submittals shall be in accordance with Section 01330, Submittal Procedures.
- B. Shop Drawings:
 - 1. Detailed metering pump diagram
 - 2. Control and power wiring diagrams
 - 3. Enclosure dimensions
 - 4. Connection point locations and sizes
 - 5. Skid mounting details
 - 6. Piping and fittings details
 - 7. Control panel dimensions, connection details, and wiring diagrams
 - 8. Location of all specified appurtenances
- C. Product Data:
 - 1. Complete catalog information, descriptive literature, and specifications, including but not limited to the following:
 - a. Total assembly weight
 - b. Materials of construction

- 1) Confirmation that all wetted parts are compatible with specified service chemical
 - c. Control system details
 - d. Appurtenance details
 - e. Hydraulic calculations confirming pump sizing and range for service conditions
 - f. Documentation of accuracy over flowrate range specified herein
 - 2. Recommended spare parts list
 - 3. Complete motor nameplate data
 - 4. Factory finish system
 - 5. Complete O&M manual for each pump model and control system
- D. Quality Assurance Submittals
- 1. Factory operational and performance testing results
 - 2. System Suppliers certificate of compliance with these specifications

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. System supplier shall provide special shipping, handling, and storage instructions.

PART 2 - PRODUCTS

2.1 PRODUCT AND SYSTEM SUPPLIER: PROVIDE:

- A. BRAVO pre-engineered systems manufactured and marketed by SEEPEX INC.
- B. Or Equal

2.2 SERVICE CONDITIONS AND PERFORMANCE

- A. Sodium Hypochlorite Metering Pump System
 - 1. Location: As shown on Drawings
 - 2. Equipment Identification Numbers:
 - a. Sodium Hypochlorite Pump No. 1: WD23_PUMP_54101
 - b. Sodium Hypochlorite Pump No. 2: WD23_PUMP_54102
 - 3. Service Chemical: 12.5% Sodium Hypochlorite
 - a. Specific Gravity: 1.2
 - b. Temperature: 50 to 90 deg F
 - 4. Flowrate Range:
 - a. 0.5 to 5.0 gallons per hour (gph)
 - 5. Rated Pressure: 100 psig
 - 6. Minimum NPSHa: 33 FT
 - 7. Piping/pump arrangement: See Drawings.

2.3 SYSTEM ASSEMBLY

- A. System Design:
 - 1. Chemical Metering Pump System supplier shall provide completely assembled, skid-mounted Chemical Metering Pump Systems and include the following features:
 - a. Pumps shall be vertically mounted with pump drives and electronics located above the piping.
 - b. Shall be scalable to incorporate 1, 2, or 3 pumps as required.
 - c. Shall include removable drip pans with threaded drains (1/2" FNPT threaded)

- d. Specifically engineered to achieve the required structural strength using vacuum molded HWMPE, formed HWMPE sheet material and powder coated structural stainless-steel angle for critical support areas.
- e. The entire pump system shall be serviceable from the front of the system.
- f. Piping shall be secured to the system frame using KiwiBlock pipe supports or equal. Pipe Mounting system to incorporate the following features:
 - 1) Polypropylene mounting blocks with minimum tensile strength of 3800 psi and must be UV resistant.
 - 2) Blocks secured to system frame using two three #8-10 self-tapping screws constructed of stainless steel.
 - 3) Piping shall be secured to the piping brackets using two tie wraps each rated for 300 lbs. Tie wraps shall be cut using tie wrap gun to avoid sharp edges that pose a safety hazard.
 - 4) Pipe securing system shall not require access to the rear to replace or remove parts.
 - 5) Pipe mounting system shall incorporate UR rating to be suitable for securing electrical components in accordance with UL recommendations.
- 2. The Chemical Metering Pump Systems shall not include any loose-shipped parts. It shall be completely shop or factory assembled and shall require no field assembly other than field connections of piping and wire.
- 3. The Chemical Metering Pump System\ shall be designed in accordance with the Drawings, providing the shown inlet and outlet connections, features and appurtenances.

2.4 COMPONENTS

- A. General: All wetted materials shall be specifically selected for resistance to specified service chemical.
- B. Piping: CPVC conforming to ASTM D2846
 - 1. The piping of the feed system shall be constructed of schedule 80, solvent welded CPVC.
 - 2. All plumbing on the system must be hard piping.
 - 3. All fittings shall be socket welded and not threaded to prevent leaks
 - 4. Piping shall be in such a manner that unions will allow for all major components to be removed without the entire pipe assembly being removed
- C. Solvent welded connections:
 - 1. Squarely cut, deburred, externally beveled ends (10-15°)
 - 2. Connection shall have maximum depth into the socket portion of the welded joint.
 - 3. Pipe section must be solvent welded radially and axially against socket shoulder for maximum joint strength.
 - 4. Components to be rotated a minimum of 90° during insertion.
 - 5. Solvent welded connections shall be chemically prepared using Weld-On P-75 "Wet R' Dry" Primer or equal
 - 6. Joints shall be solvent welded within 30 seconds of primer application if not pipe must be re-primed prior to solvent welding.
 - 7. Joint pieces shall still be "wet" from the primer when cement is applied.
- D. Calibration column:
 - 1. Provide calibration column on the common suction header for each pump skid assembly.

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2. Column shall be sized to run a minimum of 30 seconds at maximum flow rate.
 3. If the prescribed size of the calibration column exceeds 2,000 mL, a 2,000 mL column will be provided.
 4. The Calibration column assembly shall include a ball valve to isolate the calibration column from the chemical supply and a ball valve to isolate the chemical supply tank from the suction line.
 5. The Calibration column shall be constructed of clear and gray PVC and include sealed end caps.
 6. Provide threaded connection at top of column for connection to common vent.
 7. Pump system must include a means to fill calibration column when the tank level falls below the level of the calibration column.
 - a. In these instances, the pump may be used to actively fill the calibration column using pre-plumbed valves and piping.
 8. Calibration columns shall be sealed as manufactured by Griffco Valve or equal
- E. Ball valves: Provide ball valves for all shut-off, isolation, and flow control applications.
1. Features:
 - a. CPVC
 - b. True union integral union
 - c. FPM O-ring seals
 - d. Ball shall be drilled to relieve pressure from off-gassing
 2. Manufactures:
 - a. ASAHI Type 21 (true union)
 - b. Or Equal
- F. Metering Pumps:
1. WD23_PUMP_54101, WD23_PUMP_54102: Self-priming, positive displacement, progressing cavity type.
 - a. The system shall be a duplex configuration constructed with pumps in a Duty/Duty configuration.
 - b. The pumps shall be of the compact, close-coupled design that incorporates SEEPEX IMP metering pump controller or equal.
 - c. The integral pump controller shall be capable of varying pump performance throughout the entire operating range. The metering pump controller shall have IP65/ NEMA 4X for indoor use and include the following features:
 - 1) The metering pump controller shall be designed to work solely with the pump and motor to deliver up to 350:1 speed performance and flow performance up to 1000:1 without requiring encoders or blower cooling.
 - 2) Metering pump controller shall run on single phase power at 120 VAC or 230 VAC at 48-62 Hz. Frequency and voltage capability to be separate.
 - 3) The integral metering pump motor shall have IP55 certification and controller and motor shall be designed to maintain a constant torque of 8.75 lb. ft. from 20 to 600 RPM and constant power (up to 1.0 hp) from 600-1,800 RPM. The drive shall be capable of 5.0 lb. ft. at 10 RPM and 3.0 lb. ft. at 5 RPM.
 - 4) The metering pump controller system shall be able to produce a minimum of 18 lb. ft. of starting torque for a minimum of 15 seconds and 12 lb. ft. for 60 seconds. The drive shall be capable of operating at ambient temperatures of 50 to 90 degrees Fahrenheit without requiring derating.
 2. Pumping Equipment:
 - a. Rotor and Stator: Each pump shall be a minimum single-staged design employing a single helix rotor operating in a double helix stator.
 - 1) Convolutions configured to form a cavity between the rotor and stator

- 2) Cavity shall progress from the pump's inlet to discharge port with operation of the rotor
 - 3) A seal preventing leakage from the discharge back to the inlet shall be formed by the fit between the rotor and stator at the point of contact
 - 4) Stator shall be molded with a seal integral to the stator elastomer
 - 5) Separate gaskets or "O" rings are not permitted to form the seal
 - b. Rotor and Drive train: Shall be warranted for three years from the manufacturer regarding materials and workmanship
 - c. Joints: Each pump rotor shall be driven through a positively sealed and lubricated pin joint.
 - 1) Pin constructed of high speed steel, air hardened to 64 HRC
 - 2) Grease-lubricated joint with a high temperature (450° F)
 - 3) PTFE filled synthetic grease
 - 4) Covered with elastomeric sleeve
 - 5) Positively sealed with hose clamps
 - 6) Constructed of Hastelloy C, PVDF or 316ss
 - d. Casing: NPT connection shall be provided at both the inlet and discharge ports of the pump.
 - 1) 1" FNPT suction side
 - 2) 1/2" discharge side FNPT
 - 3) Casing constructed of CPVC
 - e. Bearings: each pump shall be provided with oil lubricated thrust and radial bearings designed for all loads.
 - f. Shaft seal: shaft seal be sealed using single-acting mechanical seal with atmospheric quench or double acting mechanical seals.
 - 1) Solid shaft through mechanical seal area
 - 2) Shaft shall be a two-part design allowing for removal of mechanical seal and all other wetted tool rotating parts without requiring disassembly of pump or gear motor bearings
 - 3) Silicon carbide faced seals, metal parts and elastomers to be compatible with sodium hypochlorite.
 3. Features:
 - a. The piping system must contain a vent for each pump or pump head with the following features:
 - 1) Vent must be located within 12" of the pump inlet
 - 2) Incorporate a minimum 2° angle
 - 3) Capable of being isolated to permit suction lift conditions
 - b. Pumps shall incorporate a run dry protection sensor to protect pump from running dry in event of inadequate chemical supply and include the following features:
 - 1) Integral drive and sensor shall be designed to work in coordination
 - 2) Factory tested to stop metering pump controller when there is fluid loss
 - 3) Universal sensor shall be compatible with Sodium Hypochlorite
 - 4) Sensor shall be compatible with conductive and non-conductive chemicals
 4. Products:
 - a. WD23_PUMP_54101, WD23_PUMP_54102:
 - 1) SEEPEX Series MD with NSF61 certification
 - 2) Or equal
- G. Pump Suction Side:
1. The suction lines on the feed system shall be designed with the following features:
 - a. Located as low as possible on the chemical feed system
 - b. Minimum 1" pipe size
 - c. Incorporate a fully ported ball valve

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- d. Valve shall be able to be mounted on either side of the system
 2. The suction inlet shall incorporate a ½" standpipe with the following features:
 - a. Isolation valve to purge entrapped vapor
 - b. Vapor shall be routed back to the top of the day tank during flood suction operation
 - c. Negate frictional losses associated with the flow in the piping from the day tank to skid inlet
 - d. Valve shall be able to be closed when suction lift is required
- H. Pump discharge side:
1. The discharge lines terminating at the skid from each pump shall be ½" socketed union. Placement on feed system shall be exiting the top of the feed system.
 2. Discharge line to be plumbed so that an external relief valve discharges back to suction line.
 3. Line from pressure relief valve and back to suction side must include a section of clear PVC.
 4. Each discharge line will include a 160 psig gauge with a minimum of 2-1/2" face diameter and include the following features:
 - a) Liquid filled type with glycerin filled gauge protector
 - b) Polypropylene non-wetted parts
 - c) CPVC/PTFE wetted parts
 - d) Diaphragm separating wetted parts and non-wetted parts
 - e) Minimum full-scale accuracy of 1.5%
 - f) Gauge shall be OBS-M series by Trufo® or equal
- I. Pressure Gauges and Isolators: A pressure gauge and isolator shall be provided for the discharge line of each pump.
1. Constructed of 316ss, CPVC, polypropylene and PTFE
 2. Scale of 0-160 psig, display pressure in psig
 3. Must be isolated from product being pumped
 4. Glycerin filled gauge protector constructed of CPVC/Polypropylene
 5. Minimum 2-1/2" face
 6. OBS-M Series by Truflo® or equal
- J. Pressure Relief Valve: Provide adjustable pressure relief valve for each pump discharge. The valve, gauge, and gauge isolator shall all be located prior to any pump isolation valves.
1. Factory preset at 125 psig
 2. Adjustable from 10-150 psig
 3. Body constructed of solid CPVC
 4. ½" socketed connections
 5. Valve top constructed of Noryl and shall not come in contact with process fluid
 6. Two separate ports
 7. Maximum pressure rating of 350 psig
 8. Opening set point adjustable using hand tools
 9. Capable of bypassing 300 US GPH minimum
 10. Union installed on both sides
 11. Valve shall be ½" 2-port M Series as provided by Griffco Valve Inc. or equal
- K. Equipment Identification: Provide stainless steel plate with ¼-inch die-stamped equipment identification numbers mounted in a visible location.

- L. Lifting lugs: Provide for equipment weighing over 100 pounds.
- M. Anchor Bolts: Provide all anchor bolts necessary for proper installation of the metering pump system frame or rack.
 - 1. All metals shall be Type 316 stainless steel
 - 2. Sized by equipment manufacturer
- N. Skid-Mount: Each Chemical Metering Pump System shall be completely assembled, calibrated, tested mounted and shipped on a single skid.
 - 1. Components to be mounted include metering pumps, piping, valves, and all piping appurtenances specified herein. Vertical back panels and frame-mounted enclosures shall be provided as required to fully support all equipment and appurtenances.
 - 2. Forklift truck cut-outs shall be provided.
 - 3. The strength of the skid and supporting frame shall be suitable for shipping, offloading, installation and long-term support of the metering pumps.
 - 4. Frame or rack shall have accommodations for concrete floor mounting.
 - 5. No bare metal parts shall be allowed.

2.5 INTEGRATED SYSTEM CONTROLS

- A. The pre-packaged chemical feed system shall be complete with an advanced multi-pump process controller with the following features:
 - 1. Color touch screen operator interface that measures 5.7" diagonally
 - 2. Red 3.1 eight segment LED display that can be programmed to represent any engineering unit from 0.0 to 999.9 units
 - 3. The integral variable speed drive must incorporate the following manual operator interfaces
 - a. Start membrane button
 - b. Stop membrane button
 - c. UP button to increase pump speed
 - d. DOWN button to decrease speed
 - e. Forward/ Reverse button
 - f. Red, 8-segment, 3.1 LED digital display
 - g. Mode button to access and change user configuration parameters
- B. The metering pump controller must include the following inputs and output capabilities:
 - 1. Remote two-wire start/stop discrete input.
 - 2. Remote analog speed reference input.
 - a. 0-20 mA current signal
 - b. 4-20 mA DC current signal
 - c. 0-10 VDC signal
 - d. 2-10 VDC signal
 - e. Speed potentiometer input
 - 3. Three programmable discrete input signals
 - 4. One programmable discrete output
 - 5. One programmable (NO/NC) dry-contact relay for 2 Amps up to 24 VDC resistive and 3 Amps 85-265 VAC resistive
 - 6. One programmable analog output
 - a. 0-10 VDC
 - b. 2-10 VDC
 - c. 0-20 mA DC (into 500 Ω load)
 - d. 4-20 mA DC (into 500 Ω load)

- e. The metering pump controller must incorporate the capability of using remote mounted sensor/transmitter to create a closed-loop control system complete with integral PID controller. Such options could be but not limited to pH, ORP, flow, residuals, turbidity, color, etc.
 - f. The metering pump controller shall be able to be controlled via the following communication bus strategies, as preferred by OWNER. Manufacturer shall coordinate communication bus strategy with CONTRACTOR for necessary wiring requirements and Applications Programmer:
 - 1) Ethernet/IP / TCP/IP / Modbus TCP/IP
 - g. The integral metering pump drive shall have the capability of performing 16-segment speed segmentation with separate acceleration/ deceleration profiles and programmable repetitions of sequences.
7. Each pumps controls/display shall be clearly marked with the pump equipment number
- C. Provide all cables, connectors, and a terminal junction box for termination of remote signal circuits.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation shall be in complete accordance with manufacturer's instructions.
- B. Installation shall include furnishing and applying an initial supply of any pump spare parts, lubricants, rebuild kits, etc, recommended by manufacturer.
- C. Check and align all pumps, motors, valves, piping, etc. after pump assemblies have been installed to ensure alignment and assembly has been unchanged from factory assembly conditions. Make adjustments required to place system in proper operating condition.

3.2 MANUFACTURER'S FIELD SERVICES

- A. A factory trained representative shall be provided for installation supervision, start-up and test services, and operation and maintenance personnel training services. The serviceman shall make three (3) visits to the site. The first visit shall be for assistance in the installation of equipment. The second visit shall be for checking the completed installation and start-up of the system. The third visit shall be for instruction of operations personnel.

+ + END OF SECTION + +

SECTION 13205

HIGH DENSITY POLYETHYLENE STORAGE TANKS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Design and manufacture of high density polyethylene storage tanks complete with appurtenances, including overflow pipe with braces, fittings, ladders, manway, anchorage system, and other details as shown on the attached Tank Data Sheet and specified herein.
- B. Equipment Identification Numbers: the following equipment identification numbers have been assigned to the equipment that shall be provided under this section:
 - 1. Sodium Hypochlorite Storage Tank: WD23_TANK_54100

1.2 QUALITY ASSURANCE

- A. Reference Standards: Tanks and appurtenances shall be designed, fabricated and inspected according to the latest edition of the following standards:
 - 1. American Society of Testing Materials (ASTM) D618: Conditioning Plastics and Electrical Insulating Materials for Testing
 - 2. ASTM D638: Tensile Properties of Plastics
 - 3. ASTM D790: Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
 - 4. ASTM D883: Standard Definitions of Terms Relating to Plastics
 - 5. ASTM D1525: Test Method for Vicat Softening Temperature of Plastics.
 - 6. ASTM D1693: ESCR Specification Thickness 0.125" F50-10% Igepal.
 - 7. ASTM D1998-15: Standard Specification for Polyethylene Upright Storage Tanks
 - 8. ASTM D2765: Degree of Crosslinking in Crosslinked Ethylene Plastics as Determined by Solvent Extraction.
 - 9. ASTM D2837: Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.
 - 10. ASTM D3892: Practice of Packaging/Packing of Plastics.
 - 11. ASTM D4883: Standard Test Method for Density of Polyethylene by the Ultrasound Technique
 - 12. ASTM F412: Definitions and Terms Relating to Plastic Piping Systems.
 - 13. Association of Rotational Molders (ARM) Low Temperature Impact Resistance (Falling Dart Test Procedure).
 - 14. American National Standards Institute (ANSI) B16.5: Pipe Flanges and Flanged Fittings
 - 15. California Building Code (latest edition)
- B. Factory Tests:
 - 1. Dimensions and Tolerances Tests: Measurements shall be taken with the tank in the vertical position with the tank completely empty.
 - a. Tolerances for outside diameter out of roundness shall be per ASTM D1998-15.
 - b. Tolerances for fittings placement will be +/- 0.5 inches in elevation and 2 degrees radial at ambient temperature.

2. Visual Inspection: Verification that the tank is free of visual defects such as foreign inclusions, air bubbles, pinholes, pimples, crazing, cracking, and delaminations that will impair the performance of the tank.
 3. Low Temperature Impact Test:
 - a. In accordance with ASTM D 1998-15
 - b. Test specimens shall be taken from fittings location or piggy-back test molds.
 - c. Test specimens shall be conditioned at -40 deg F for a minimum of two (2) hours.
 - d. Test specimens > ½" wall thickness shall be tested at 200 ft-lb. Test specimens < ½" wall thickness shall be tested at 100 ft-lb.
 4. Degree of Crosslinking Test:
 - a. Conduct o-xlene insoluble fraction (gel test) per ASTM D2765 Method C for the determination of the ortho-xlene insoluble fraction (gel) of crosslinked polyethylene.
 - b. The percent gel level for crosslinked tanks on the inside 1/8 inch of the wall shall be a minimum of 65%.
 5. Ultrasonic Tank Thickness Test: All tanks shall meet design wall thickness requirements and tolerances.
 - a. All tanks with capacity greater than 2,000 gallons shall be measured for tank wall thickness at 6 inches, 1 ft, 2 ft, 3 ft and 4 ft on the tank sidewall height at 0 and 180 deg around the tank circumference with 0 deg being the tank manway and in the counter-clockwise direction per ANSI standard drafting specifications.
 - b. All tanks with capacity less than 2,000 gallons shall be measured for tank wall thickness at 6 inches, 1 ft and 2 ft on the tank sidewall height at 0 and 180 deg around the tank circumference with 0 deg being the tank manway and in the counter-clockwise direction per ANSI standard drafting specifications.
 6. Hydrostatic test in accordance with ASTM D 1998-15
- C. Warranty:
1. Manufacturer shall provide a minimum five (5) year full replacement warranty in the OWNERS name for each tank, by serial number and chemical service.

1.3 SUBMITTALS

- A. In accordance with Specification Section 01330, Submittal Procedures.
 1. Shop Drawings:
 - a. Complete drawings and details of the tank and all dimensions, connections, appurtenances, anchorage and restraint system.
 - b. Details of inlet and outlet fittings, manways, flexible connections, and vents.
 2. CONTRACTOR shall supply seismic anchorage calculations for each tank as required by Specification Section 01610.
 3. Product Data:
 - a. Detailed descriptive literature including tank weight, materials of construction, manufacturing details, resin manufacturer data sheet, and wall thickness.
 - b. Confirmation from resin manufacturer that the proposed resin system is suitable for storage of the specified chemicals using the fabrication technique proposed.
 - c. Complete design calculations for tank, reinforcement, and anchorage system.
 - 1) Hoop stress shall be calculated using 550 PSI at 100 degrees F as prescribed in ASTM D 1998-15.
 - 2) Tank restraint system calculations for seismic and wind loading criteria specified herein, signed and sealed by a Civil or Structural Engineer licensed in California.
 - d. Tank capacity chart indicating storage volume in gallons and height in feet.

- e. Manufacturer's recommended procedures for unloading, handling, and installing the tank and appurtenances, including recommended bolt torque for all bolted connections.
- f. Color chart showing available colors.
- 4. Quality Control Submittals:
 - a. Certificate of Compliance with these specifications and ASTM D 1998-15.
 - b. Copy of the Manufacturer's Quality Assurance Program
 - c. Complete Factory Testing Report
 - d. Manufacturer's warranty

1.4 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Tank shall not be shipped until ENGINEER has approved Factory Testing Report.
- B. All packing, packaging, and marking provisions of ASTM D3892 shall apply.
- C. Each tank shall be shipped clearly marked with the Manufacturer's standard identification system indicating the following, at minimum:
 - 1. Name of Manufacturer.
 - 2. Date of Manufacture.
 - 3. Tank Capacity.
 - 4. Model Number.
 - 5. Serial Number.
- D. Tank and all components shall be protected from damage during shipment and handling. Details of protection procedures shall be the full responsibility of the Manufacturer, with the following minimum measures taken:
 - 1. Tank shall be supported during shipment to prevent contact with bulkhead or bed of vehicle.
 - a. Tank shipped horizontally shall have padded cradle supports
 - b. Tank shipped vertically shall be placed on a skid.
 - 2. All fittings shall be installed, removed, and shipped separately.
 - 3. Prevent damage to flanged connections using wooden blinds bolted to the flange and having a diameter two (2) inches greater than the outside diameter of the flange.
 - 4. All unflanged components shall be plugged to prevent deflection and protected by adequate exterior wrapping.
 - 5. All components shipped shall be firmly fastened and padded to prevent shifting or flexing during transport.
 - 6. No items shall be shipped loose inside the tank.

PART 2 - PRODUCTS

2.1 PRODUCT AND MANUFACTURER:

- A. Assmann, Inc.
 - 1. Model Numbers:
 - a. T71-00: ICT 550
- B. Poly Processing, Inc.
- C. Or Equal

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2.2 SERVICE CONDITIONS

A. General:

1. Maximum fluid temperature: 95 deg F
2. Minimum fluid temperature: 35 deg F
3. Maximum ambient air temperature: 110 deg F
4. Minimum ambient air temperature: 20 deg F
5. Operating Pressure: Atmospheric

B. Service Conditions Table:

Tank	WD23_TANK_54100
Liquid Stored	Sodium Hypochlorite
Approximate Concentration	12.5%
Specific Gravity	1.20
pH	12.0
Tank Type	Crosslinked

2.3 DESIGN CRITERIA

A. General:

1. Tanks shall be rotationally-molded crosslinked polyethylene, one-piece seamless construction, cylindrical in cross-section and vertical in axis.
2. Tanks shall fully conform to ASTM D 1998-115.
3. Dimensions shall be as shown in the attached Tank Data Sheets.
4. All tank fitting attachments shall be provided with flexible couplings or other provisions to allow for movement without rupture or separation of connections.
 - a. Flexible couplings shall allow minimum 4% deflection in all directions.
5. Tanks shall be clearly marked with manufacturer, date of manufacture, and serial number.
6. All opening cut edges shall be trimmed smooth.

B. Design Loads:

1. Resistance of both wind and seismic loads shall be provided for both tank full and tank empty conditions and in accordance with Section 01 60 00, General Equipment Requirements.
2. T29-00 and T72-00 (outdoor installations): 35 psf snow load.
3. Tank Anchorage System:
 - a. Manufacturer shall be fully responsible for design and provision of adequate anchorage system for the service conditions. Design of the anchorage system shall be coordinated with the supporting foundation shown in the Contract Drawings. Anchorage designs requiring re-design of the tank foundation shown in the Contract Drawings shall not be acceptable.
 - b. All anchorage systems shall be 316 stainless steel unless otherwise specified.
 - c. Contractor shall refer to Drawing 70-SM-4 regarding special anchorage configuration for T71-00.

C. Tank type, style, capacity, dimensions, and fittings orientation shall be as shown in the attached Tank Data Sheets.

D. Materials:

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1. General:
 - a. Tanks shall be virgin polyethylene resin as compounded and certified by the Manufacturer.
 - b. Resin shall contain a minimum of a UV 8 stabilizer as compounded by the resin manufacturer.
 - c. Color shall be natural.
 - d. Pigments, where specified, shall not exceed 0.25% dry blend total weight.
2. Resin:
 - a. Crosslinked polyethylene as manufactured by ExxonMobil Chemical, or resin of equal physical and chemical properties.
 - 1) Mechanical Properties:

Property	ASTM	Value
Specific Gravity	D1998	1.9
Hoop Stress	D1998	600 PSI
Density (Resin)	D1505	0.938-0.946 g/cc
Tensile (Yield Stress 2-inch/min)	D638	3000 PSI
Elongation at Break (2-inch/min)	D638	>300%
ESCR (100% Igepal, Condition A, F50)	D1693	>1000 hours
ESCR (100% Igepal, Condition B, F50)	D1693	>1000 hours
Vicat Softening Degrees F	D1525	250
Flexural Modulus	D790	100,000 PSI

3. Fittings, Gaskets, and Fasteners:

Tank	WD23_TANK_54100
Liquid Stored	Sodium Hypochlorite
Fittings Material	PVC
Gasket Material	Viton
Bolt/Fastener Material	Titanium

- E. Wall Thickness: Minimum required wall thickness for the cylinder must be sufficient to support its own weight in an upright position without any external support, as determined by the following equation, and not less than 0.187 inches:

$$T = 0.433 \times SG \times H \times OD \div (2 \times SD)$$

Where:

- T = wall thickness (inches)
 SG = specific gravity (g/cm³)
 H = fluid head (feet)
 SD = hydrostatic design stress (PSI)
 OD = outside diameter (inches)

- 1) In accordance with the above formula, the tank shall have a stratiform (tapered wall thickness) wall.
- 2) Flat areas shall be provided to allow locating large fittings on the cylinder straight shell.
- 3) Hydrostatic Design Stress:
 - a) As determined by multiplying the hydrostatic design basis, determined by ASTM D2837 using rotationally molded samples, with a service factor selected for the application.

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- b) The hydrostatic design stress is 550 PSI at 73 deg F.
- c) Hydrostatic design stress shall be derated for service above 100 deg F and for mechanical loading of the tank.

F. Top Head:

- a. Integrally molded with cylinder straight shell.
- b. Minimum thickness equal to the top of the cylinder straight shell.
- c. Top head for tanks with capacities in excess of 2000 gallons shall be designed to provide a minimum of 1300 square inches of flat area for fittings locations.

G. Bottom Head:

- a. Integrally molded with cylinder straight shell.
- b. Flat.
- c. Knuckle radius shall be 1-1/2 inches minimum.

H. Fittings:

1. Manway:
 - a. Tanks less than 2,000 gallons: Minimum 16-inch threaded polyethylene, vented and easily accessible.
 - b. Tanks greater than 2,000 gallons: Minimum 24-inch threaded polyethylene, vented and easily accessible.
2. Threaded Bulkhead (THR):
 - a. Threaded bulkhead fittings shall not be allowed for connections greater than 2 inches.
 - b. Where used bulkhead fittings shall be constructed of PVC.
 - c. Gaskets shall be a minimum of 1/4" thickness and constructed of 40-50 durometer EPDM or 60-70 durometer Viton as specified herein and in the Tank Data Sheets.
3. Bolted Double 150 lb. Flange Fittings (FLG):
 - a. Bolted double flange fitting shall be constructed with two (2) 150 lb. flanges and two (2) 150 lb. flange gaskets, and the correct number and size of all-thread bolts for the flange specified by the flange manufacturer.
 - b. Flanges shall be constructed of PVC Type I, Grade I, or other specified material.
 - c. Gaskets shall be a minimum of 1/4" thickness and constructed of 40-50 durometer EPDM or 60-70 durometer Viton as specified herein and in the Tank Data Sheets.
 - d. Provide a minimum of four (4) full thread bolts, material as specified in the attached Tank Data Sheets.
 - 1) The bolts may have gasketed flanged metal heads or bolt heads encapsulated in polyethylene material.
 - a) Encapsulated bolts shall be designed to prevent metal exposure to the liquid in the tank and prevent bolt rotation during installation.
 - b) The polyethylene encapsulation shall fully cover the bolt head and a minimum of 1/4" of the threads closest to the bolt head.
 - c) Polyethylene shall be color coded to distinguish bolt material (white - 316 S.S., yellow - Hastelloy C276, red - Monel, green - Titanium).
 - d) Each encapsulated bolt shall have a gasket to provide a sealing surface against the inner flange.
 - 2) Bolted double flange fittings shall have bolt holes straddling the principal centerline of the tank in accordance with ANSI/ASME B-16.5 unless otherwise specified.
4. Lifting Lugs: Tanks shall have a minimum of three lifting lugs integrally molded in the cylinder straight shell.

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- a. Lifting lugs shall be designed and located to enable erection of an empty tank.
 - b. Lifting lugs shall be Type 316 stainless steel.
- 5. Tie-downs:
 - a. Provide a minimum of four (4) tie-down lugs integrally molded into the top head.
 - b. Tie-down lugs shall be designed to allow tank retention in wind and seismic loading without damage to the tank.
- 6. Flexible Tank Fittings:
 - a. Flexible fittings for all tank piping connections shall be supplied by the tank manufacturer.
 - b. Flexible expansion joint with low spring rate for protection of stress sensitive connections. Provide one at each connection to HDPE chemical storage tanks.
 - c. Pressure Rating: 100 psi
 - d. Material: 100% PTFE resin conforming to ASTM D4894.
 - e. Ends: 150# ANSI flanged ends.
 - f. 316 SS bolts.
 - g. EPDM gaskets.
 - h. Provide stainless steel restraint cables to prevent over-extension of joint.
 - i. Performance Specifications:
 - 1) Axial Travel: >0.47".
 - 2) Lateral Deflection: >0.35".
 - 3) Angular Deflection: > 24°
 - j. Manufacturers and Products:
 - 1) Ethylene - Flexijoint
 - 2) Or Equal

2.4 APPURTENANCES

- A. General:
 - 1. Provide the following appurtenances where called for on the Tank Data Sheet for each tank.
 - 2. Uncoated or exposed carbon steel appurtenances, fasteners, or anchorage will not be accepted.
- B. Down Pipes and Fill Pipes:
 - 1. Down pipes and fill pipes shall be PVC or material compatible with chemical stored.
 - 2. Down pipes and fill pipes shall be supported at 6-inch intervals.
- C. U-Vent: Each tank must be vented for the material and flow and withdrawal rates expected. U-vents shall be furnished complete and shall be constructed of PVC or material compatible with the chemical stored.
- D. Level Sensor Flange Mount: Provide flange on top of tank for mounting a level sensor. Coordinate flange size with electrical drawings for sensor mounting detail.
- E. Supports: Provide pipe supports for fill and vent piping.
- F. Tank Identification Plate:
 - 1. Each tank shall be provided with a nameplate indicating the equipment number and title as shown on the tank data sheet.
- G. Secondary Containment Basin:
 - 1. Rectangular Containment Basin:
 - a. Linear medium density polyethylene.

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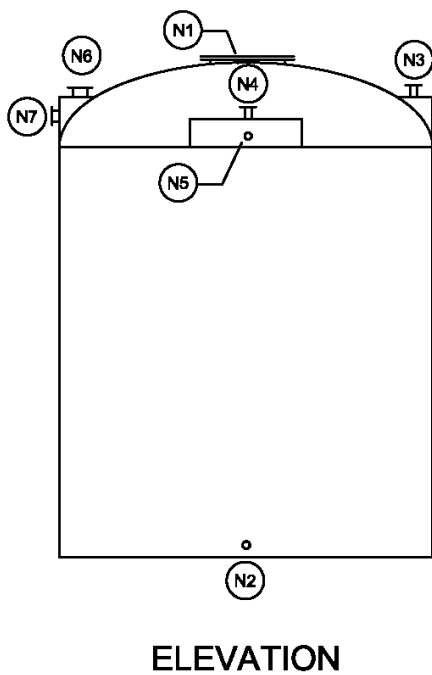
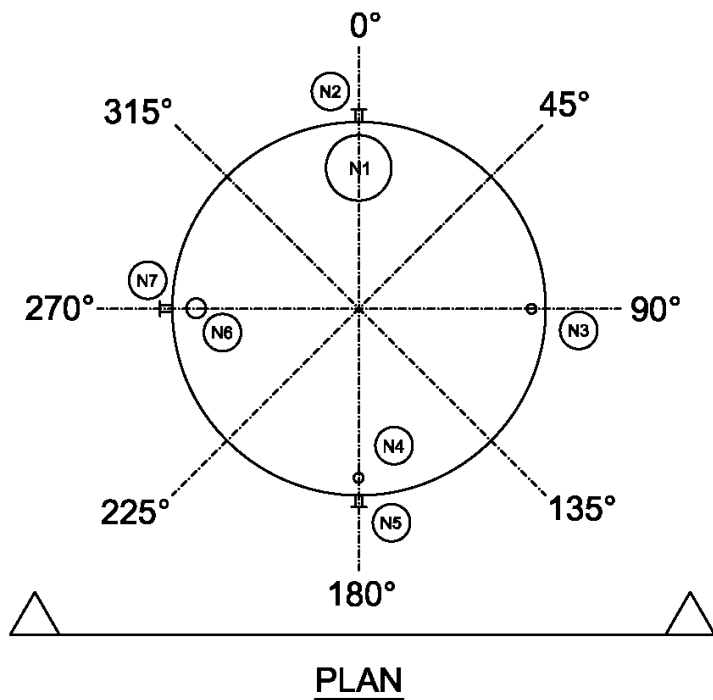
- b. Complies with 40 CFR-264.193.
- c. All wall thicknesses conform to ASTM D-1998.
- d. Provide containment volume of 550 gallons.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install tank in complete conformance with manufacturer's written instructions and Engineer's approved shop drawings
- B. Concrete tank pad shall be level and smooth to the tolerances recommended by the tank manufacturer.

+ + END OF SECTION + +



Item No.	WD23_TANK_54100
Name	Sodium Hypochlorite Storage Tank
Liquid Stored	12.5% Sodium Hypochlorite
Working Capacity	550 Gallons
Tank Inside Diameter	4'-0"
Design Code	ASTM D1998-15
Materials:	
Resin	Cross Linked
Gaskets	Viton
Bolts	Titanium
Roof	Domed
Shell	Vertical Cylinder
Bottom	Flat

Nozzle Schedule

MK	Size / Type	Service
N1	16"	Manway
N2	1" THR	Outlet at lowest possible elevation on tank wall no flush bottom
N3	1/2" THR	Pressure Relief
N4	1" THR	Tank Vent
N5	3/4" THR	Inlet
N6	6" FLG	Level Transmitter
N7	2" THR	Overflow

Accessories

Ladder	
Lifting Lugs	X
Access Manway	X
Insulate	
Containment Basin	X

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SECTION 13251

BLADDER-TYPE HYDROPNEUMATIC TANK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Scope: Provide bladder-type hydropneumatic tank and all appurtenances required to provide a complete fully functional system.
- B. All equipment specified in this Section shall be supplied by a single system supplier or Manufacturer.

1.2 QUALITY ASSURANCE

- A. Quality Control Submittals:
 - 1. Tank Manufacturer's written instructions.
 - 2. Manufacturer's Certificate of Compliance that tank is certified and stamped in accordance with ASME Section VIII, Division 1.
 - 3. Manufacturer's Certificate of Proper Installation.
 - 4. Statements of Qualification: Tank welders shall be ASME certified.
 - 5. The tank Manufacturer shall certify that all wetted tank materials are in compliance with NSF Standard 61.
 - 6. Test Reports:
 - a. Date and time of testing.
 - b. Description of method of testing, including pumping combinations and pressure records.
 - c. Description of any observed leaks or failures and method and date of repair.
 - d. Description of catastrophic failures.
 - e. Signature of the CONTRACTOR and Manufacturer's representative.

1.3 SUBMITTALS

- A. Shop Drawings:
 - 1. Complete dimensional fabrication drawings of hydropneumatic tank and accessories certified correct by system supplier.
 - 2. Complete piping schematic drawings showing all piping and flows directly associated with hydropneumatic tank.
 - 3. Structural design calculations, sealed and signed by a Civil or Structural engineer, licensed in the State of California.
- B. Field Assembly Instructions: Provide instructions for unloading and installing hydropneumatic tank.
- C. Operation and Maintenance Manuals: Submit complete manuals including copies of all approved Shop Drawings, test reports, maintenance data and schedules, description of operation, and spare parts information.
- D. Warranty: Submit 1-year minimum warranty.

PART 2 - PRODUCTS

2.1 PRODUCT AND MANUFACTURER:

- A. Pulsco Corporation
- B. Young Engineering Manufacturing, Inc.
- C. Or approved equal

2.2 DIMENSIONAL AND PHYSICAL DATA

- A. Physical Data for Tank:
 - 1. Total Volume: 2,000 gallons
 - 2. Initial Air Volume (high pressure): 1,200 gallons
 - 3. Working Volume: 215 gallons
 - 4. Configuration: Vertical cylinder with elliptical dished ends
 - 5. Shell Diameter: 6'-0"
 - 6. Design Minimum Pressure: 55 psi
 - 7. Design Maximum Pressure: 180 psi
 - 8. Water Seal at Minimum Pressure: 25% of Total Volume
 - 9. Design Pressure Rating: 200 psi
 - 10. Design Temperature: 15 - 115°F
 - 11. Liquid Service: Potable Water

2.3 MATERIALS:

- A. Heads and Cylinder: SA 516 Grade 70 carbon steel
- B. Nozzles: SA 106 Grade B carbon steel
- C. Flanges: SA 105 carbon steel
- D. Support Saddles: SA 36 carbon steel

2.4 STRUCTURAL DESIGN

- A. The hydropneumatic tank and its major components, including anchor bolts and other supporting and restraining parts, shall be designed by a Civil or Structural engineer, licensed in the State of California, to resist lateral forces in accordance with the International Building Code, latest edition. Forces shall be based on the empty, operating, or flooded weights, whichever is greatest.
- B. Support Saddles:
 - 1. Hydropneumatic tank vendor shall supply steel support saddles as required to support tank.
 - 2. Support saddles shall be integral with tank.
 - 3. Support saddle shall be designed to keep the bottom of the tank minimum 2-feet off of the ground.
 - 4. Hydropneumatic tank vendor shall size stainless steel anchor bolts for installation into concrete slab or equipment pad as shown on the Drawings. Anchor bolts shall be supplied by CONTRACTOR.

5. Hydropneumatic tank vendor shall provide transfer-load values to the ENGINEER for the design of the concrete footings.
- C. Design Requirements:
 1. In accordance with Section 01610, General Product Requirements
- D. Proof of Compliance:
 1. Structural integrity and anchorage shall be certified by an approved calculation that demonstrates the adequacy of the anchorage system for seismic forces. This calculation may be based on principles of structural analysis and engineering mechanics or based on similarity to approved shake-table tests.
 2. The CONTRACTOR shall submit for review and approval test data or calculations certified by a Civil or Structural Engineer registered in the State of California to show compliance with the above requirements.

2.5 FABRICATION

- A. Fabricate tank in accordance with ASME Boiler and Pressure Vessel Code, Section VIII, latest edition.
- B. Plate Thicknesses: Determine in accordance with allowable stresses listed in the Code for material, pressure, and temperature specified.
- C. Heads: As specified in ASME Code, Section VIII, Division 1.
- D. Corrosion Allowance:
 1. For Liquid Service of Potable Water or Recycled Water, no corrosion allowance is required.
- E. Stamp and certify tank in accordance with ASME Code Section VIII, Division 1.

2.6 COATINGS

- A. Exterior of tank shall be painted as follows. Prepare surfaces to be painted per coating manufacturer's requirements.
 1. Primer: 2 coats polyamidolamine epoxy, 4-6 mil thickness
 - a. Tnemec, Series V69, Hi-Build Epoxoline II
 - b. Or Equal
 2. Top Coat: 1 coat Polyurethane designed for exterior weathering, abrasion and corrosion resistance, 3-4 mil thickness
 - a. Tnemec, Series 750 UVX
 - b. Or Equal
- B. Tank interior shall be coated with an ANSI/NSF STD 61 approved bonded epoxy, minimum thickness 8-10 mils. Prepare surfaces to be painted per coating manufacturer's requirements.
 1. Coatings:
 - a. Tnemec, Pota-Pox Plus Series N140
 - b. Or Equal

2.7 COMPONENTS AND APPURTENANCES

- A. Bladder:

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1. Type: Gas-in-Bladder
 2. Material:
 - a. Heavy-duty flexible polyvinyl chloride membrane suitable for potable water service.
 - b. Bladder material shall meet the requirements of ANSI/NSF 61.
- B. Manhole(s): One minimum, 18-inch diameter, designed and fabricated in accordance with ASME Boiler and Pressure Vessel Code, Section VIII, Article D-10.
- C. Nozzles:
1. Nozzles shall be in accordance with ASME Code, Section VIII, Article D-6.
 - a. Sizes 2-1/2 Inches and Larger: Class 150 flanged, ANSI B16.5.
 - b. Sizes 2 Inches and Smaller: Class 3000 threaded, ANSI B16.11 (weldolet)
 2. Nozzles, size and purpose:
 - a. Inlet/Outlet: 12-inch, flanged.
 - b. Drain: 2-inch, threaded.
 - c. Blow-Off Valve: 1/2-inch, threaded.
 - d. Air Fill/Relief: 1/2-inch, threaded.
- D. Inlet/Outlet and Drain piping shall enter the tank from the bottom.
- E. Blow Off Valve with Enclosure:
1. In accordance with Boiler and Pressure Vessel Code, Section VIII, GENERAL REQUIREMENTS, UG-125 and 126.
 2. Size and setting per tank manufacturer.
- F. Integral saddle supports for bolting to concrete foundation.
- G. Mounting brackets for all tank-mounted appurtenances and controls.
- H. Lifting Lugs: Provide suitably attached for equipment assemblies and components weighing over 100 pounds.
- I. Equipment Identification Plates:
1. Provide 16-gauge Type 304 stainless steel identification plate securely mounted on each separate equipment component and control panel in a readily visible location.
 2. Plate shall bear 3/8-inch high block type black enamel filled equipment identification number and letters as indicated in this Specification.
- J. Anchor Bolts: Type 304 stainless steel, sized and furnished by supplier of hydropneumatic control tanks according to design criteria listed in this Specification.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Manufacturer shall provide written installation instructions.

3.2 FIELD QUALITY CONTROL

- A. Field Static Test:

1. Hydrostatically test installed hydropneumatic tank for 4 hours minimum at 1.3 times design pressure, before dynamic testing.
 2. Repair leaks detected during testing.
- B. Functional Test: Inspect and test components for alignment, operation, and connection, and performance.
- C. Manufacturer's Field Services: A Manufacturer's representative for the hydropneumatic tank shall be present at the jobsite for the minimum person-days listed for the services hereinunder, travel time excluded:
1. 1 person-day for installation assistance, inspection, certification of the installation, testing, startup, and training of Owner's operations personnel.

+ + END OF SECTION + +

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SECTION 15010
PIPING SUPPORT SYSTEMS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Details and location of each pipe support type used.

PART 2 - PRODUCTS

2.1 SUPPORT SYSTEMS:

- A. Channel-type support systems
 - 1. 304 Stainless Steel
 - a. Unistrut
 - b. B-Line
 - c. Or Equal.
 - 2. Non-metallic
 - a. Aikenstrut
 - b. CLIC
 - c. Or Equal.
- B. Hanger- and Clevis-type support systems
 - 1. B-line
 - 2. Anvil
 - 3. Or Equal
- C. Stanchion-type support systems
 - 1. B-Line
 - 2. Anvil
 - 3. Or Equal
- D. Adjustable Pipe Saddle Support
 - 1. B-Line, Figure B-3092
 - 2. Or Equal
- E. Wall Bracket (14-inch to 24-inch pipe)
 - 1. B-Line Figure B-3067 Heavy Duty Angle Bracket
 - 2. Or Equal
- F. Wall Bracket (8-inch to 12-inch pipe)
 - 1. B-Line Figure B-3066 Medium Duty Angle Bracket
 - 2. Or Equal
- G. Wall Bracket (4-inch to 6-inch pipe)
 - 1. B-Line Figure B-3068 Light Duty Angle Bracket
 - 2. Or Equal

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PART 3 - EXECUTION

3.1 INSTALLATION

- A. In addition to the pipe supports specifically called for on the drawings, CONTRACTOR shall provide pipe supports as required to fully support all piping systems.
- B. CONTRACTOR shall design, supply and install pipe support system using manufacturer's standard available pipe support hardware.
- C. Pipe supports shall, at a minimum, be installed at the following locations:
 - 1. On both sides of each valve, piece of equipment or other appurtenance, such that allowance is made for removal of the valve, piece of equipment, or other appurtenance while leaving the pipe system fully supported. Support piping connections to equipment by pipe support and not by the equipment.
 - 2. Along straight runs of pipe, the maximum distance between supports shall be as listed below:

Pipe Diameter	Maximum Distance Between Supports	Minimum Hanger Rod Diameter (if Hanger Rods are used)
2" and smaller	6-feet	1/2"
2-1/2" to 6"	8-feet	3/4"
8" to 12"	10-feet	2 @ 3/4"
14" to 18"	10-feet	2 @ 1"
Over 18"	Custom Design	

- 3. Directly supporting valves 8-inch in diameter and larger.
 - 4. At least two supports on each side of flexible couplings or flanged coupling adapters to provide that no load is applied to the flexible coupling.
 - 5. On the pipe within two pipe diameters of each side of elbows and each branch of tees and crosses.
 - 6. Where piping passes through walls, such that no load is transferred to the wall.
- D. Install support systems in accordance with MSS SP 69, Pipe Hangers and Supports-Selection and Application and MSS SP 89, Pipe Hangers and Supports-Fabrication and Installation, unless shown otherwise.
 - 1. Support no pipe from the pipe above it.
 - 2. Do not install pipe supports and hangers in equipment access areas or bridge crane runs.
- E. Bracing and lateral support:
 - 1. Provide lateral sway bracing on 10-foot maximum centers
 - a. Brace hanging pipes against horizontal movement by both longitudinal and lateral sway bracing.
 - 2. Install lateral supports for seismic loads at all changes in direction.
- F. Thermal expansion and thrust restraint
 - 1. Install pipe anchors where required to withstand expansion thrust loads and to direct and control thermal expansion.
- G. Support types:
 - 1. Horizontal Suspended Piping:
 - a. Single Pipes: Adjustable swivel-ring, splint-ring or clevis hangers.

- b. Grouped Pipes: Trapeze hanger systems.
 - c. For insulated piping, furnish galvanized steel protection shields, welding insulation saddles, or precut sections of rigid insulation (with vapor barrier) at all hanger locations.
- 2. Horizontal Piping Supported From Walls:
 - a. Single Pipes: Wall brackets or wall clips attached to wall with anchors. Clips attached to wall-mounted framing also acceptable.
 - b. Stacked Piping:
 - 1) Wall-mounted framing system and clips acceptable for piping smaller than 3-inch minimal diameter.
 - 2) Piping clamps that resist axial movement of pipe through support not acceptable.
 - c. Insulated piping shall have the insulation removed in the vicinity of wall brackets and piping clips to allow only direct pipe wall contact with the support system.
- 3. Horizontal Piping Supported From Floors:
 - a. Stanchion Type:
 - 1) Pedestal type; adjustable with stanchion, saddle, and anchoring flange.
 - 2) Use yoked saddles for piping whose centerline elevation is 18 inches or greater above the floor and for all exterior installations.
 - 3) Provide neoprene waffle isolation pad under anchoring flanges, adjacent to equipment or where otherwise required to provide vibration isolation.
 - b. Floor-Mounted Channel Supports:
 - 1) Use for piping smaller than 3-inch nominal diameter running along floors and in trenches at piping elevations lower than can be accommodated using pedestal pipe supports.
 - 2) Attach channel framing to floors with anchor bolts.
 - 3) Attach pipe to channel with clips or pipe clamps.
 - c. Concrete Cradles:
 - 1) Use for piping larger than 3-inch along floor and in trenches at piping elevations lower than can be accommodated using stanchion type.
- 4. Vertical Pipe:
 - a. Support with wall brackets and base elbow or riser clamps on floor penetrations.
 - b. Insulated piping shall have the insulation removed in the vicinity of wall brackets and riser clamps, to allow only direct wall contact with the support system.
- H. Standard Attachments:
 - 1. To Concrete Ceilings: Concrete inserts.
 - 2. To Steel Beams: I-beam clamp or welded attachments.
 - 3. To Wooden Beams: Lag screws and angle clips to members not less than 2-1/2 inches thick.
 - 4. To Concrete Walls: Concrete inserts or brackets or clip angles with anchor bolts.
 - 5. Existing Walls and Ceilings: Install as specified for new construction, unless shown otherwise.
 - 6. Repair mounting surfaces to original condition after attachments are made.
- I. Isolation:
 - 1. Install elastomeric inserts designed to isolate piping from pipe supports where copper pipe is run in stainless steel supports, or where other dissimilar metals are in contact with pipe supports.
- J. Materials:
 - 1. Channel-type, hanger-type and trapeze-type support systems and pipe racks constructed of channel systems:

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- a. Provide non-metallic support systems in all chemical storage and feed areas or as otherwise noted on the Drawings. Provide type 316 stainless steel fasteners.
- b. Provide type 304 stainless steel support systems and fasteners in all other areas.
- 2. Stanchion-type support systems
 - a. Provide steel and ductile iron stanchion components
 - b. Coat stanchions after assembly per specification Section 09900, Painting.

+ + END OF SECTION + +

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SECTION 15080

PIPING INSULATION

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Manufacturer's data on materials, construction, end connections, ratings, overall lengths, etc.

PART 2 - PRODUCTS

2.1 PIPE INSULATION

- A. **INS-02:** Rigid Fiberglass with PVC Cover
 - 1. Material:
 - a. Insulation: UL rated, preformed, sectional rigid fiberglass
 - b. Vapor Barrier Jacket: Kraft paper with aluminum foil with pressure sensitive adhesive lap
 - c. Cover: Preformed PVC Cover
 - 1) UV resistant
 - 2) Joints designed to shed water
 - 3) Color: White.
 - 4) Provide Identification Labels per the requirements of 10400 – Identification Devices
 - 2. Temperature Rating: 0 degrees to 850 degrees Fahrenheit
 - 3. Conductivity in accordance with ASHRAE 90.1 and minimum of 0.27 BTU-in/hr-ft² degrees F at 75 degrees F per ASTM C177 or ASTM C518.
 - 4. Minimum water vapor transmission of 0.02 perm-inch per ASTM E96
 - 5. Flame Spread Rating: Less than 25 per ASTM E84
 - 6. Fittings and valves:
 - a. Insulate with fabricated sections of insulation
 - b. Wrap with vapor barrier jacket
 - c. Provide preformed PVC fitting cover specifically designed for fitting or valve
 - 7. Manufacturers and Products:
 - a. Owens-Corning Fiberglass; ASJ/SSL-II with PVC Cover
 - b. Johns Manville Corp; Micro-Lok with Zeston 2000 PVC Cover
 - c. Or Equal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Insulate all piping, valves and fittings for the piping systems where insulation is called for in the Pipe Schedule or Drawings.
- B. Install insulation according to manufacturer's instructions
 - 1. Install insulation only after piping system has passed pressure testing.

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2. Requirement for insulation does not negate the requirement for coating of the piping system. Apply piping coating system as called for in the Pipe Schedule. Allow coating system to completely cure prior to installation of pipe insulation.
 3. Do not "gap" insulation at pipe supports. Trim insulation to allow for pipe support while providing continuous insulation of piping in those parts of the pipe not in contact with pipe support.
 4. Install removable/replaceable insulation sections and cover panels over fittings or valves which require maintenance access.
 5. Use accessories, adhesives and tapes per manufacturer's recommendations.
- C. Finishing
1. Overall installation shall result in smooth, straight, neat and clean piping insulation system. No frayed ends, irregular lumps or other unsightly installation result will be acceptable.

+ + END OF SECTION + +

SECTION 15100
PIPE AND FITTINGS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Product data sheets for each piping system.
 - a. Include information on pipe, fittings and joint systems.
 - 2. Complete catalog information, descriptive literature, specifications, and identification of materials of construction.
 - 3. Complete descriptions and data for all coatings and linings.
 - 4. Tests and inspection data for pipe and coatings/linings.
 - 5. Qualifications for welders and/or technicians performing joining processes that requires specialized equipment to perform the work or as specifically identified herein.
- B. Operation and Maintenance Data as specified in Section 01330, SUBMITTAL PROCEDURES.

1.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. In accordance with manufacturer's directions.

PART 2 - PRODUCTS

2.1 PIPING SYSTEM DATA SHEETS

- A. Piping system data sheets (PSDS) have been attached to this Specification and are incorporated herein by reference. Provide piping systems in accordance with piping system data sheets.

2.2 THRUST RESTRAINT

- A. Provide rigid or restrained joints and fittings for all piping systems specified with a test pressure in the Pipe Schedule.
- B. Unless otherwise specified in the Pipe Schedule or shown on the Drawings, thrust blocks shall not be used.

PART 3 - EXECUTION

3.1 PIPE SCHEDULE

- A. A Pipe Schedule has been included on the Drawings and is incorporated herein by reference. Install piping systems in accordance with Pipe Schedule.

- B. For pipe which is shown on the Drawings, but not referenced in the Pipe Schedule, CONTRACTOR to provide pipe material and fittings which are appropriate for the intended service and acceptable to the ENGINEER.

3.2 PREPARATION

- A. Inspect pipe and fittings before installation, clean ends thoroughly, and remove foreign matter and dirt from inside.
- B. Repair any coatings or linings which were damaged during shipping and handling using manufacturer-approved coating and lining repair materials in accordance with manufacturer's instructions.

3.3 INSTALLATION

- A. General:
 - 1. Join pipe and fittings in accordance with manufacturer's instructions, unless otherwise shown or specified.
- B. Joint Assembly:
 - 1. Flanged Joints (FLG):
 - a. Bolt Holes: Straddle vertical centerlines, aligned with connecting equipment flanges or as shown.
 - b. Follow a bolt tightening pattern which produces uniform bearing pressure.
 - c. Do not over-tighten bolts. Follow manufacturer's recommendation for bolt torque.
 - d. Provide gasket at every flanged joint.
 - e. Provide insulating flange kit where indicated on Drawings and required in this Specification.
 - 2. Threaded and Coupled Joints (THR):
 - a. Conform to ANSI B1.20.1.
 - b. Produce sufficient thread length to ensure full engagement when screwed home in fittings.
 - c. Ream pipe ends and clean chips and burrs after threading.
 - d. Make connections with not more than three threads exposed.
 - e. Lubricate male threads only with thread lubricant or tape as specified on Piping Data Sheets.
 - f. PVC Threaded Joints:
 - 1) Provide Schedule 80 threaded nipple where necessary to connect to threaded valve or fitting.
 - 2) Use strap wrench for tightening threaded plastic joints. Do not overtighten fittings.
 - g. HDPE Threaded Joints:
 - 1) Joining HDPE pipe with threaded connections is not allowed unless specifically approved by the ENGINEER
 - h. Provide dielectric union or insulating coupling where indicated on Drawings and required in this Specification.
 - 3. Grooved-End Joints (GRV):
 - a. Type: Rigid, except where joints are used to correct misalignment, to provide flexibility, and where shown otherwise, in which case provide flexible type.
 - b. Grooved end joints are not allowed for plastic pipes unless approved by the ENGINEER.
 - 4. Soldered Joints (SLD):
 - a. Before soldering, remove stems and washers from solder joint valves.

- b. Use only solder specified for particular service.
- c. Cut pipe ends square and remove fins and burrs.
- d. Protect adjacent surfaces from damage during soldering.
 - 1) Protect from high temperatures due to flame
 - 2) Protect from damage due to dripping flux or solder
- e. After thoroughly cleaning pipe and fitting of oil and grease using solvent and emery cloth, apply noncorrosive flux to the male end only.
- f. Solder Joint
- g. Wipe excess solder from exterior of joint before hardened.
- 5. Solvent Welded Joints (SLV):
 - a. Use only solvent cement which is rated for use in the service intended. Check compatibility of solvent cement with service, especially in pipelines which carry chemicals.
 - b. Observe all manufacturer's requirements for environmental conditions for use of solvent cement.
 - c. Cut pipe ends square and remove fins and burrs.
 - d. Apply appropriate primer.
 - e. Apply solvent cement and assemble joint.
 - 1) Hold in place long enough for solvent cement to set-up and hold joint, as assembled, until solvent cement has cured.
 - f. Wipe excess solvent cement from exterior of joint before hardened.
- 6. Proprietary Restrained Mechanical Joints (PRJ):
 - a. PRJ piping shall be furnished with factory-fabricated retainer weldment on spigot end.
 - b. If PRJ piping is field cut, the pipe joint shall be restrained using Restrained Mechanical Joint (RMJ) Glands as specified in Section 15120, Piping Specialties. Field welding of retainer weldment will not be allowed.
- 7. Welded Steel and Stainless Steel Joints (WLD)
 - a. Field welded joints shall be in accordance with AWWA C206
 - b. Welder Qualifications:
 - 1) All welding shall be done by skilled welders, welding operators, and tackers who have had adequate experience in the methods and materials to be used.
 - 2) Welders shall be qualified by the CONTRACTOR under the provisions of ASME BPVC for shop welds and ANSI/AWS D1.1 for field welds.
 - 3) Furnish all material and bear the expense of qualifying welders.
 - c. Backing rings will not be permitted for 30-inch and smaller pipe. Single field-welded butt joints with outside backing rings may be used for pipe larger than 30 inches in diameter.
 - d. Where exterior welds are performed, adequate space shall be provided for welding and inspection of the joints.
 - e. Butt Straps
 - 1) Butt straps shall be used as closure pieces and where shown on the Drawings.
 - 2) Where used or required, shall be as shown on the Contract Drawings or as approved during shop drawing review.
 - 3) When fitting up the ends of pipe to be welded or fitting butt-strap pieces, minor jacking or clamping will be allowed. Cold working the metal and sledges or localized application of heat and working the metal and sledges will not be allowed. If field displacement of joints, where butt strap joints are indicated, does not allow proper fit-up with the tolerances indicated, special closure butt straps or mitered pieces shall be shop fabricated and installed.
 - 4) Butt straps shall be welded on both the inside and outside of the pipe and at each end of the pipe and strap to avoid stress multiplication.

- f. Prior to the backfilling or beginning the welding procedure, any tack welds or joint stops used to position the pipe during laying shall be removed. Any annular space between the faying surfaces of the bell and spigot shall be equally distributed around the circumference of the joint by shimming, jacking, or other suitable means. The weld shall then be made in accordance with ANSI/AWWA C206. Where more than one pass is required, all dirt, slag, and flux shall be removed before the succeeding bead is applied.
 - g. Repair of Welds: All welds that are defective shall be repaired by the CONTRACTOR to meet the requirements of this section at no additional cost to the OWNER. Defects in welds or defective welds shall be removed, and that section of the joint shall then be re-welded. Only sufficient removal of defective material that is necessary to correct the defect is required. After the repair is made, the joint shall be checked by repeating the original test procedure. Welds deficient in size shall be repaired by adding weld metal.
 - 8. Insulating Flanges, Couplings, and Dielectric Unions:
 - a. Applications: Provide insulating flange, coupling or di-electric union for all joints at the following locations:
 - 1) Dissimilar metal piping connections.
 - 2) Cathodically protected piping penetration to buildings.
 - 3) Submerged to unsubmerged metallic piping connections.
 - 4) Where required for electrically insulated connection.
 - b. Installation:
 - 1) Insulating joints connecting immersed piping to non-immersed piping shall be installed above maximum water surface elevation.
 - 2) Align and install insulating joints according to manufacturer's recommendations to avoid damaging insulating materials.
- C. Exposed Piping Installation:
- 1. Piping Runs:
 - a. Parallel to building or column lines and perpendicular to floor, unless shown otherwise.
 - b. Piping upstream and downstream of flow measuring devices shall provide straight lengths as required for accurate flow measurement.
 - 2. Supports: As specified in Section 15010, PIPING SUPPORT SYSTEMS.
 - 3. Group piping wherever practical at common elevations; install to conserve building space and not interfere with use of space and other work.
 - 4. Provide unions or flanges at each piping connection to equipment or instrumentation on equipment side of each block valve to facilitate installation and removal.
 - 5. Install piping so that no load or movement in excess of that stipulated by equipment manufacturer will be imposed upon equipment connection;
 - 6. Install piping to allow for contraction and expansion without stressing pipe, joints, or connected equipment.
 - 7. Piping clearance, unless otherwise shown:
 - a. Over Walkway and Stairs: Minimum of 7 feet 6 inches, measured from walking surface or stair tread to lowest extremity of piping system including flanges, valve bodies or mechanisms, insulation, or hanger/support systems.
 - b. Between Equipment or Equipment Piping and Adjacent Piping: Minimum 3 feet 0 inch, measured from equipment extremity and extremity of piping system including flanges, valve bodies or mechanisms, insulation, or hanger/support systems.
 - c. From Adjacent Work: Minimum 1 inch from nearest extremity of completed piping system including flanges, valve bodies or mechanisms, insulation, or hanger/support systems.

- d. Do not route piping in front of or to interfere with access ways, ladders, stairs, platforms, walkways, openings, doors, or windows.
- e. Headroom in front of openings, doors, and windows shall not be less than the top of the opening.
- f. Do not install piping containing liquids or liquid vapors in transformer vaults or electrical equipment rooms.
- g. Do not route piping over, around, in front of, in back of, or below electrical equipment including controls, panels, switches, terminals, boxes, or other similar electrical work.

D. Buried Pipe Installation:

1. Pipe Placement:

- a. Keep trench dry until pipe laying and joining are completed.
- b. Exercise care when lowering pipe into trench to prevent twisting or damage to pipe.
- c. Prevent foreign material from entering pipe during placement.
 - 1) Close and block open end of last laid pipe section when placement operations are not in progress and at close of day's work.
- d. Lay pipe upgrade with bell ends pointing in direction of laying.
- e. Deflect pipe at joints for pipelines laid on a curve using unsymmetrical closure of spigot into bell. Utilize a maximum of 75 percent of manufacturer's recommended allowable joint deflection.
 - 1) If joint deflection of standard pipe lengths will not accommodate horizontal or vertical curves in alignment, provide:
 - a) Shorter pipe lengths.
 - b) Fittings/bends.
- f. Secure pipe which has been placed from movement or damage while placing the next section of pipe.
- g. Prevent uplift and floating of pipe prior to backfilling.

E. Cleaning:

- 1. Following assembly and testing, and prior to disinfection and final acceptance, flush pipelines with water at 2.5 fps minimum flushing velocity until foreign matter is removed. At a minimum, flush for a period of time which will flush the entire pipeline volume three times.
 - a. If impractical to flush large diameter pipe at 2.5 fps, clean in-place from inside by brushing and sweeping, then flush line at lower velocity. If lower velocity is used, flush the entire pipeline volume five times.
- 2. Provide temporary means of removing flushing water from pipeline during flushing.
- 3. Provide means for removal/screening of debris from the flushing water, disposal of debris and disposal of flushing water.

3.4 TESTING

- A. Pressure test piping in accordance with the Pipe Schedule, and Section 15990, Pressure Testing of Piping Systems.

3.5 SUPPLEMENTS

- A. The following supplements are attached to this Specification section and incorporated herein by reference:
 - 1. Pipe Schedule (see Drawings)
 - 2. 15100 PSDS BSP – Black Steel Pipe

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3. 15100 PSDS CHE – Chemical Tubing and Pipe System
4. 15100 PSDS COP – Copper Pipe
5. 15100 PSDS CPVC – Solvent Welded CPVC Pipe
6. 15100 PSDS DIP – Ductile Iron Pipe
7. 15100 PSDS HDPE1 – High Density Polyethylene Dual Wall Solid Drainage Pipe
8. 15100 PSDS HDPE2 – High Density Polyethylene Dual Wall Perforated Drainage Pipe
9. 15100 PSDS PVC1 – Solvent Welded Polyvinyl Chloride Pipe
10. 15100 PSDS PVC2 – PVC Pressure Pipe
11. 15100 PSDS PVC3 – Polyvinyl Chloride Drain, Waste and Vent Pipe
12. 15100 PSDS PVC4 – PVC Sewer Pipe
13. 15100 PSDS SSTP – Stainless Steel Pipe
14. 15100 PSDS SSTT – Stainless Steel Tubing
15. 15100 PSDS WSP – Welded Steel Pipe
16. 15100 PSDS WSSTP – Welded Stainless Steel Pipe

+ + END OF SECTION + +

15100-6

SECTION 15100 PSDS BSP**PIPING SYSTEM DATA SHEET – BLACK STEEL PIPE**

ITEM	SIZE	DESCRIPTION
Pipe	2 inch & smaller 2-1/2 thru 6 inch	Carbon steel, ASTM A106, Grade B seamless or ASTM A53 Rev A, Grade B seamless or ERW. Schedule 80. Schedule 40.
Joints	3 inch & smaller 4 inch & larger	Threaded or flanged at valves and equipment. Flanged at valves and equipment.
Fittings		Threaded: ASTM A105 Class 3000 Forged Steel, threaded ASME B16.11.
Branch Connections		Tee or reducing tee in conformance with Fittings, above, galvanized 2,000-pound WOG threadolet or welding boss; galvanize after welding.
Flanges		Galvanized forged carbon steel, ASTM A105/A105M, ANSI B16.5 Class 150 or Class 300, threaded, 1/16-inch raised face.
Unions		Threaded malleable iron, ASTM A197 or A47, 300-pound WOG, brass to iron seat, meeting the requirements of ANSI B16.3.
Plugs		Forged carbon steel, ASTM A181/A181M Rev A, Grade II, round head, threaded, galvanized.
Bolting		Flanges: Carbon steel ASTM A307, Grade A hex head bolts and ASTM A563, Grade A hex head nuts.
Gaskets	All Flanges	Flanged, Water and Sewage Service: 1/8-inch thick, red rubber (SBR), hardness 80 (Shore A), rated to 200 degrees F., conforming to ANSI B16.21, AWWA C207, and ASTM D1330, Grades 1 and 2. Blind flanges shall be gasketed covering the entire inside face with the gasket cemented to the blind flange.
Thread Lubricant	2 inch & smaller	Teflon tape or joint compound that is insoluble in water.

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SECTION 15100 PSDS CHE

PIPING SYSTEM DATA SHEET – CHEMICAL TUBING AND CONDUIT

ITEM	DESCRIPTION																										
General	For liquid chemical service, provide color-coded LLDPE tubing, colors as listed in the Pipe Schedule. For gas chemical service, provide HDPE tubing, natural color (semi-opaque white). Install tubing in electrical conduit for ease of installation/replacement as well as non-pressure rated secondary containment. Tubing manufacturer shall confirm chemical compatibility of tubing with chemical system being served.																										
Tubing	Tubing size references on the Drawings or in the Specifications refer to outside diameter, unless noted otherwise. Provide tubing with the following corresponding inside diameter and pressure rating where outside diameter is called for: <table><tr><th rowspan="2">OUTSIDE DIAMETER</th><th rowspan="2">INSIDE DIAMETER</th><th colspan="2">PRESSURE RATING AT 70 DEG. F</th></tr><tr><th>LLDPE</th><th>HDPE</th></tr><tr><td>3/8"</td><td>1/4"</td><td>214 psi</td><td>272 psi</td></tr><tr><td>1/2"</td><td>3/8"</td><td>153 psi</td><td>194 psi</td></tr><tr><td>5/8"</td><td>1/2"</td><td>119 psi</td><td>151 psi</td></tr><tr><td>3/4"</td><td>5/8"</td><td>97 psi</td><td>123 psi</td></tr><tr><td>1"</td><td>3/4"</td><td>154 psi</td><td>195 psi</td></tr></table> HDPE tubing shall be suitable for full vacuum service (14 psi vacuum) LLDPE Characteristics: • Specific Gravity (ASTM D792): <0.920 • Tensile strength (ASTM D638): 2800 psi @ 73 deg. F • Elongation (ASTM D638): 530% • Hardness (ASTM D785): 44D Rockwell Durometer • Heat Distortion (ASTM D648): 120 deg. F @ 66 psi • Color: ▪ 3/8" I.D. and smaller - red, green, blue, white, gray, yellow, orange, purple, or black ▪ Larger than 3/8" I.D. - semi-opaque or black	OUTSIDE DIAMETER	INSIDE DIAMETER	PRESSURE RATING AT 70 DEG. F		LLDPE	HDPE	3/8"	1/4"	214 psi	272 psi	1/2"	3/8"	153 psi	194 psi	5/8"	1/2"	119 psi	151 psi	3/4"	5/8"	97 psi	123 psi	1"	3/4"	154 psi	195 psi
OUTSIDE DIAMETER	INSIDE DIAMETER			PRESSURE RATING AT 70 DEG. F																							
		LLDPE	HDPE																								
3/8"	1/4"	214 psi	272 psi																								
1/2"	3/8"	153 psi	194 psi																								
5/8"	1/2"	119 psi	151 psi																								
3/4"	5/8"	97 psi	123 psi																								
1"	3/4"	154 psi	195 psi																								

15100-1 PSDS CHE

ITEM	DESCRIPTION												
	HDPE Characteristics: • Specific Gravity (ASTM D792): 0.955 • Tensile strength (ASTM D638): 3900 psi @ 73 deg. F • Elongation (ASTM D638): >500% • Hardness (ASTM D785): 65D Rockwell Durometer • Heat Distortion (ASTM D648): 151 deg. F @ 66 psi • Color: Semi-Opaque or Black For all tubing runs, use continuous lengths of tubing with no splices. Tubing Manufacturers: Hudson Extrusions, or equal												
Conduit	Conduit for chemical tubing shall be PVC electrical conduit, as specified in Division 16. Sizes shall be as listed below: <table> <tr> <th>TUBING OUTSIDE DIAMETER</th><th>CONDUIT SIZE</th></tr> <tr> <td>3/8"</td><td>2"</td></tr> <tr> <td>1/2"</td><td>2"</td></tr> <tr> <td>5/8"</td><td>2"</td></tr> <tr> <td>3/4"</td><td>3"</td></tr> <tr> <td>1"</td><td>3"</td></tr> </table>	TUBING OUTSIDE DIAMETER	CONDUIT SIZE	3/8"	2"	1/2"	2"	5/8"	2"	3/4"	3"	1"	3"
TUBING OUTSIDE DIAMETER	CONDUIT SIZE												
3/8"	2"												
1/2"	2"												
5/8"	2"												
3/4"	3"												
1"	3"												
Fittings	Provide all necessary fittings, clamps and adapters for connection of tubing at the chemical metering pump outlet, chemical feed point, and any other connections shown on the Drawings. Provide barbed- or compression-style fittings, specifically designed for use with the tubing being provided, and compatible with the service (both with the fluid being carried in pipe and pressure rating). Fittings shall be located so that they are accessible at all times. No fittings shall be located in the carrier pipe. All connections shall be constructed per tubing manufacturer's recommendations to provide a connection which is equal to or greater than tubing pressure rating. All parts or fittings in contact with the fluid in the tubing shall be compatible with the chemical being carried.												

SECTION 15100 PSDS COP

PIPING SYSTEM DATA SHEET – COPPER PIPE

ITEM	DESCRIPTION
Tubing	Seamless, conforming to ASTM B88 as follows: Potable water (buried)Type K, soft or hard temper Potable water (exposed)Type L, hard drawn Compressed air serviceType L, hard drawn P-Trap priming serviceType L, soft temper
Fittings	Commercially pure wrought copper, socket joint, conforming to ASTM B75, dimensions conforming to ANSI B16.22. Brass fittings: ¾" to 2" Conductive Compression CTS Connection Manufacturers: Jones, Mueller, Ford, or approved equal Copper Tubing, Type K Manufacturers: Cambridge Lee, Mueller Streamline, Aqua Shield, or approved equals
Flanges	Commercially pure wrought copper, socket joint, conforming to ASTM B75, faced and drilled 150-pound ANSI B16.24 standard.
Bolting	ASTM A307, carbon steel, Grade A hex head bolts, and ASTM A563 Grade A hex head nuts.
Gaskets	1/16-inch thick nonasbestos compression type, full face, Cranite, John Manville.
Solder	Joints 2-1/2 Inch and Smaller: Wire solder (95 percent tin), conforming to ASTM B32 Alloy Grade Sn95. Do not use cored solder. Joints Larger Than 2-1/2 Inch: Wire solder, melt range approximately 440 degrees F to 660 degrees F, conforming to ASTM B32 Alloy Grade HB or HN. Do not use cored solder.

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SECTION 15100 PSDS CPVC

PIPING SYSTEM DATA SHEET – SOLVENT WELDED CHLORINATED POLYVINYL CHLORIDE PIPE

ITEM	DESCRIPTION
Pipe	Schedule 80 CPVC: Type IV, Grade I or Class 23447-B conforming to ASTM D1784 and ASTM F441. Manufactured with 2 percent titanium dioxide for ultraviolet protection. Threaded nipples shall be schedule 80.
Fittings	Schedule 80 CPVC as Specified Under Pipe Above: Conforming to the requirements of ASTM F439 Rev A for socket-weld type and ASTM F437 for threaded type. Manufactured with 2 percent titanium dioxide for ultraviolet protection.
Joints	Solvent socket-weld except where connection to valves and equipment may require future disassembly.
Flanges	One piece, molded hub Type CPVC flat face flange in accordance with Fittings above; 125-pound ANSI B16.1 drilling.
Bolting	Flat Face Mating Flange or In Corrosive Areas: ASTM A193/A193M Rev A Type 316 stainless steel Grade B8M hex head bolts and ASTM A194/A194M Grade 8M hex head nuts. Raised Face Mating Flange: Carbon steel ASTM A307 Grade B square head bolts and ASTM A563 Grade A heavy hex head nuts.
Gaskets	Flat-Face Mating Flange: Full faced 1/8-inch thick EPDM rubber. Raised-Face Mating Flange: Flat ring 1/8-inch EPDM rubber, with filler gasket between OD of raised face and flange OD to protect the flange from bolting moment.
Solvent Cement	As recommended by the pipe and fitting manufacturer conforming to ASTM F493 Rev A.
Thread Lubricant	Teflon tape.

15100-1 PSDS CPVC

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15100-2 PSDS CPVC

SECTION 15100 PSDS DIP

PIPING SYSTEM DATA SHEET – DUCTILE IRON PIPE

ITEM	DESCRIPTION
Pipe	Buried Piping: Pressure class as indicated in the pipe schedule. If not indicated: • All pipe 12" diameter and smaller shall be pressure class 350. • All pipe 14" through 20" shall be pressure class 250. • All pipe larger than 20" shall be pressure class 200. Flanged Piping: Special Thickness Class 53 Pressure class shall be per AWWA C150/A21.50 and AWWA C151/A21.51 All buried pipes designed to carry recycled water shall be distinctively wrapped in purple tape. Manufacturers: Tyler Union US Pipe Or approved equal
Lining	Water and Reclaimed Water: Cement-Mortar: AWWA C104/A21.4. Wastewater: Modified Polyamine Ceramic Epoxy as follows: 1. 100% Solids with 20% by volume of ceramic microspheres for abrasion resistance. 2. Minimum lining thickness: 40 mils nominal dry film thickness. 3. All Wastewater lined DIP is subject to holiday inspection prior to installation. 4. All Wastewater lined DIP is subject to CCTV inspection before and after installation. All areas identified where coating is damaged shall be repaired by the CONTRACTOR in accordance with the manufacturer's recommendations, at no cost to OWNER. 5. Manufacturer and Product: a. Perma-Shield PL Series 431, Tnemec Water, Reclaimed Water: Ceramic Epoxy 1. Amine cured epoxy containing ceramic quartz pigment 2. 100% volume solids content 3. NSF-61 approved for potable water 4. Minimum lining thickness: 30 mils nominal dry film thickness 5. Manufacturer and Product:

15100-1 PSDS DIP

ITEM	DESCRIPTION
	a. Induron Protective Coatings, Perma-Clean 100 Ceramic Epoxy Lining b. Or Equal Wastewater, Sludge, Scum, as noted in Pipe Schedule: Glass lining as follows: 1. The glass powder shall be specially formulated to prevent the adherence of grease and crystalline metal salt deposits in sludge, scum, and sewage pipelines, and shall be hard, smooth, vitreous and inorganic. 2. Minimum lining thickness: 10 mils nominal dry film thickness. 3. Glass lining shall be exposed to a maturing temperature of approximately 1400 degrees F. 4. Hardness: 5-6 on the Mohs scale. 5. Density: 2.5 to 3.0 grams per cubic centimeter per ASTM D 792. 6. The following tests must be run on coupons from factory lined Ductile Iron pipe: a. Per the recommended industry standards under ASTM D-5162-01, NACE RP 0188-99, and SSPC Coating Manual, Volume 1, Section XIV, the glass lining shall be tested by "low voltage, wet sponge, non-destructive holiday detection unit", with only isolated voids permitted due to casting anomalies. Test procedure and acceptance criteria shall be per the attachment "MP-9.2, Porcelain Enamel Continuity Testing", and documentation shall be furnished with each shipment of material listing the test results by identifying "mark" or "tag" numbers. b. The glass lining shall be capable of withstanding an instantaneous thermal shock of 350 degrees F. c. The finished lining shall be able to withstand a strain of 0.001 inch/inch (the yield point of the base metal) without damage to the glass. d. The glass lining shall be capable of withstanding an instantaneous thermal shock of 350 degrees F differential without crazing, blistering or spalling. e. The glass lining shall be resistant to corrosion of between PH-3 and PH-10 at 125 degrees F. f. There shall be no visible loss of surface gloss to the lining after immersing a production sample in an 8% sulfuric acid solution at 148 degrees F for a period of 10 minutes. g. When tested according to ASTM C-283, it shall show a weight loss of not more than 3 milligrams per square inch. 6. Manufacturer and Product: a. Ferrock MEH-32

15100-2 PSDS DIP

ITEM	DESCRIPTION
	b. VITCO SG-14 c. Ceramic Coating Company SL-31 d. Or Equal.
Coating	Unless otherwise specified in the Pipe Schedule, piping shall be coated as follows: Buried Piping: • AWWA C151/A21.51: Minimum 1-mil asphaltic coating. • AWWA C105/A21.5: Polyethylene encasement, 4-mil high-density cross laminated or 8-mil linear-low density, color as required by local/state regulations. Exposed / Immersed Piping: • Primer Coating: Where shop primer is applied to protect pipe during shipping, storage and handling, primer shall be compatible with pipe coating requirements of Section 09900, Painting.
Fittings	Lined and coated same as pipe. Push-On (PO): AWWA C110/A21.10 and C111/A21.11, gray or ductile iron, 250 psi minimum working pressure. American Cast Iron Pipe Co., Fastite Joint; U.S. Pipe and Foundry, Tyton Joint. Mechanical (MJ): AWWA C110/A21.10, C111/A21.11, and C153/A21.53 gray or ductile iron, 250 psi minimum working pressure. Follower glands shall be ductile iron. Restrained Mechanical Joint (RMJ): Standard MJ Fittings with RMJ Gland conforming to requirements of Section 15120, PIPING SPECIALTIES. Proprietary Restrained (PRJ): AWWA C111/A21.11 and C153/A21.53, ductile iron, 250 psi minimum working pressure. Clow Corp., Super-Lock Joint; American Cast Iron Pipe Co., Flex-Ring or Lok-Ring Joint; U.S. Pipe, TR Flex. Grooved End (GRV): AWWA C606 and C110/A21.10, ductile iron, 250 psi minimum working pressure. Victaulic. Flange (FLG): AWWA C110/A21.10 ductile iron, faced and drilled, 125-pound flat face. Gray cast iron will not be allowed.
Joints	Push-On (PO): 250 psi minimum working pressure, AWWA C110/A21.10 and C111/A21.11. American Cast Iron Pipe Co., Fastite Joint; U.S. Pipe and Foundry, Tyton Joint. Mechanical (MJ): 250 psi minimum working pressure. Restrained Mechanical Joint (RMJ): Standard MJ Joint with RMJ gland conforming to requirements of Section 15120, PIPING SPECIALTIES. Proprietary Restrained (PRJ): 150 psi minimum working pressure. Clow Corp., Super-Lock; American Cast Iron Pipe Co., Flex-Ring or Lok-Ring; U.S. Pipe, TR Flex. Grooved End (GRV): Rigid type radius cut conforming to AWWA C606, 250 psi minimum working pressure. Victaulic.

15100-3 PSDS DIP

ITEM	DESCRIPTION
	Flange (FLG): 125-pound flat face, ductile iron, threaded conforming to AWWA C115/A21.15. Gray cast iron will not be allowed. Branch connections 3 inches and smaller, shall be made with service saddles as specified in Section 15120, PIPING SPECIALTIES.
Couplings	Grooved End: 250 psi minimum working pressure, malleable iron per ASTM A47 or ductile iron per ASTM A536. Victaulic. Grooved End Adapter Flanges: 250 psi minimum working pressure, malleable iron per ASTM A47 or ductile iron per ASTM A536. Victaulic.
Bolting	T-Bolts and other specialty bolts: Manufacturer's standard. Hex Bolts: ASTM A307, Grade B carbon steel hex head bolts Nuts: ASTM A563, Grade A carbon steel hex head nuts. T-Bolts and other specialty bolts: Type 304 stainless steel Hex Bolts: ASTM A193 B8, Type 304 stainless steel Nuts: ASTM A194 Grade 8, Type 304 stainless steel
Gaskets	Push-On, Mechanical, and Proprietary Restrained Joints: Red Rubber (SBR) conforming to ANSI/AWWA C111/A21.11. Grooved End Joints: Halogenated butyl conforming to ASTM D2000 and AWWA C606. Flanged, Water and Sewage Service: 1/8 inch-thick, red rubber (SBR), hardness 80 (Shore A), rated to 200 degrees F, conforming to ANSI B16.21, AWWA C207, and ASTM D1330, Grades 1 and 2. Full face for 125-pound flat-faced flanges, flat-ring type for 250-pound raised-face flanges. Blind flanges shall be gasketed covering the entire inside face with the gasket cemented to the blind flange. Gasket pressure rating to equal or exceed the system hydrostatic test pressure.
Joint Lubricant	Manufacturer's standard.
Manufacturers	Pacific States Tyler US Pipes Griffin American Or approved equals

15100-4 PSDS DIP

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15100-5 PSDS DIP

SECTION 15100 PSDS HDPE1

PIPING SYSTEM DATA SHEET – HIGH DENSITY POLYETHYLENE DUAL WALL SOLID DRAINAGE PIPE

ITEM	DESCRIPTION
Pipe	High Density Polyethylene Pipe, smooth inside, corrugated outside intended for storm drainage application. Meeting the requirements of ASTM F2648, AASHTO M-252/M-294, Type S. Meets H-20 loading requirements with 1-foot of soil cover. Provide dual wall solid pipe as per the Drawings. ADS N-12 WT IB or equal.
Fittings	Use Bell and Spigot connections meeting the watertight joint performance requirements of ASTM F2306. Elbows shall be radius, not segmented/beveled. Do not use fabricated HDPE fittings. Lab test certified to 10.8 psi in accordance with ASTM D3212. ADS Dual Wall Fittings or equal.
Joints	Water-tight joints, integral bell/spigot ends with an integral reinforcing collar on the bell in accordance with ASTM D3212. Provide gasket on the spigot end. Provide transition couplings and adapters as required to couple with other piping systems. Apply joint lubricant per manufacturer on the gasket and bell during assembly. Lab test certified to 10.8 psi, in accordance with ASTM D3212.
Couplings	HDPE wrap-around sleeve with self-contained tightening straps. Lab test certified to 5 psi, minimum. Same manufacturer as pipe.
Gaskets	Rubber gasket meeting the requirements of ASTM F-477.
Lining	None
Test Pressure	5 psi - conduct pressure testing in accordance with Specification 15990.
Coating System / Color	None

15100-1 PSDS HDPE1

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15100-2 PSDS HDPE1

SECTION 15100 PSDS HDPE2

PIPING SYSTEM DATA SHEET – HIGH DENSITY POLYETHYLENE PERFORATED DUAL WALL DRAINAGE PIPE

ITEM	DESCRIPTION
Pipe	High Density Polyethylene Pipe, smooth inside, corrugated outside intended for storm drainage application. Meeting the requirements of AASHTO M-252/M-294, Type S. Meets H-20 loading requirements with 1-foot of soil cover. Provide "slotted" pipe as per the Drawings. ADS N-12 ST IB or equal.
Fittings	Use PVC thermo-molded sanitary fittings, which are constructed to specifically work with the HDPE pipe system. Lab test certified to 10.8 psi, minimum, meeting the requirements of ASTM D3212. Elbows shall be radius, not segmented/beveled. Do not use fabricated HDPE fittings. ADS Series 35 or equal.
Joints	Soil-tight joints, integral bell/spigot ends with an integral reinforcing collar on the bell. Provide gasket on the spigot end. Lab test certified to 10.8 psi, minimum, meeting the requirements of ASTM D3212. Provide transition couplings and adapters as required to couple with other piping systems.
Couplings	HDPE wrap-around sleeve with self-contained tightening straps. Lab test certified to 5 psi, minimum. Same manufacturer as pipe.
Gaskets	Rubber gasket meeting the requirements of ASTM F-477
Lining	None
Test Pressure	None
Coating System / Color	None

15100-1 PSDS HDPE2

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15100-2 PSDS HDPE2

SECTION 15100 PSDS PVC1

PIPING SYSTEM DATA SHEET – SOLVENT WELDED POLYVINYL CHLORIDE PIPE

ITEM	DESCRIPTION
Pipe	Schedule 80 Polyvinyl Chloride (PVC), unless indicated otherwise. Type I, Grade I or Class 12454-B conforming to ASTM D1784 and ASTM D1785. Pipe shall be manufactured with 1% titanium dioxide for ultraviolet protection. All pipes designed to carry recycled water shall be colored purple or distinctively wrapped in purple tape.
Fittings	Schedule to match pipe above, ASTM D2466 and ASTM D2467 for socket weld type and Schedule 80 ASTM D2464 for threaded type. Fittings shall be manufactured with 1% titanium dioxide for ultraviolet protection.
Joints	Solvent socket weld except where connection to threaded valves and equipment may require future disassembly.
Flanges	One piece, molded hub type PVC flat face flange in accordance with Fittings above, 125-pound ANSI B16.1 drilling
Bolting	Hex Bolts: ASTM A193 B8, Type 304 stainless steel Nuts: ASTM A194 Grade 8, Type 304 stainless steel
Gaskets	Flat-Face Mating Flange: Full-faced 1/8-inch thick EPDM rubber.
Solvent Cement	As recommended by the pipe and fitting manufacturer conforming to ASTM D2564, except solvent weld cement for PVC pipe joints in sodium hypochlorite service shall be free of silica filler and shall be certified by the manufacturer to be suitable for that service. Certification shall be submitted.
Thread Sealant	Teflon Tape.

15100-1 PSDS PVC1

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SECTION 15100 PSDS PVC2**PIPING SYSTEM DATA SHEET – POLYVINYL CHLORIDE PRESSURE PIPE**

ITEM	DESCRIPTION
Pipe	Conform to the requirements of AWWA C900-16 (4-inch to 60-inch) for PVC water transmission pipe, pressure class as shown in pipe schedule. If no pressure class is shown in pipe schedule, provide pressure class adequate to accommodate test pressure shown in pipe schedule. All pipes designed to carry recycled water shall be colored purple.
Fittings	Ductile Iron per 15100 PSDS DIP – Ductile Iron Pipe. Transition fittings necessary for the proper connection shall be the standard of, and provided by, the manufacturer of the fittings.
Joints	Rubber-gasketed bell and spigot or rubber-gasketed couplings. No restrained joint PVC piping shall be allowed. In sections where joint restraint is required, transition piping to Ductile Iron Pipe with restrained joint fittings or as shown on the drawings.
Gaskets	Conforming to the requirements of ASTM F477.
Joint Lubricant	Manufacturer's standard.
Pipe Manufacturers	Certa Lock Diamond Plastics Corporation JM Manufacturing Pacific Western Pipe Vinyl Tech-White Knight Pressure-Flex Pipe PW Eagle North American Pipe Corp Or approved equal
Fittings Manufacturers	Sigma Star Tyler Union US Pipe Or approved equal

15100-1 PSDS PVC2

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SECTION 15100 PSDS PVC3

PIPING SYSTEM DATA SHEET – POLYVINYL CHLORIDE DRAIN, WASTE AND VENT PIPE

ITEM	DESCRIPTION
Pipe	PVC Drain Waste and Vent type, ASTM D1785, Type 2110, Schedule 40.
Fittings	Schedule to match pipe above, ASTM D2665 Drain, Waste and Vent Type
Joints	Solvent socket weld except where connection to threaded valves and equipment may require future disassembly.
Solvent Cement	As recommended by the pipe and fitting manufacturer conforming to ASTM D2564.
Thread Sealant	Teflon Tape.
Special Installation Instructions for DWV Piping	1. Approximate routing as shown on drawings. Provide drain waste and vent piping to produce a complete, code-compliant drain, waste and vent system. 2. Provide and install all required fittings, adapters, etc. to produce a complete system. 3. Set piping above floor slab true and plumb. 4. Set risers in CMU walls where possible, set exposed risers as close to walls as possible. 5. Where vent stacks pass through roof, fit with flashing sleeve secured to roof. 6. Extend vents minimum 1 foot above roof.

15100-1 PSDS PVC3

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SECTION 15100 PSDS PVC4

PIPING SYSTEM DATA SHEET – POLYVINYL CHLORIDE GRAVITY SEWER PIPE

ITEM	DESCRIPTION
Pipe	Conform to the requirements of ASTM D3034 (4 to 15-inch) and ASTM F679 (18 to 24-inch). Provide minimum SDR-26 sewer pipe with a minimum pipe stiffness of 115 PSI. PWEagle, or Equal.
Fittings	Conform to the requirements of ASTM D3034 (4 to 15-inch) and ASTM F679 (18 to 24-inch). GPK, or Equal.
Joints	Rubber-gasketed bell and spigot or rubber-gasketed couplings conforming to ASTM D3212.
Gaskets	Conforming to the requirements of ASTM F477.
Joint Lubricant	Manufacturer's standard.

15100-1 PSDS PVC4

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SECTION 15100 PSDS SSTP**PIPING SYSTEM DATA SHEET – STAINLESS STEEL PIPE**

ITEM	SIZE	DESCRIPTION
Pipe	2 inch & smaller 2-1/2 thru 6 inch	Austenitic stainless steel, ASTM A312, Grade TP 316 seamless, or welded Schedule 80 Schedule 40
Joints	3 inch & smaller 4 inch & larger	Threaded or flanged at valves and equipment. Flanged at valves and equipment.
Couplings		Threaded, Type 316 Stainless Steel, Class 3000: LF2 ASME B16.11, SA182
Flanges		Class 150, F316/316L, ASTM A102, ANSI B16.5 Class 150 or Class 300, threaded, 1/16-inch raised face.
Unions		Threaded Type 316 Stainless Steel, Class 3000: MSS SP83 ,SA182
Plugs		Threaded Type 316 Stainless Steel, Class 3000: Threads conform to ASME B1.20.1 NPT; Materials conform to ASTM A182, Dimension conform to ASME B16.11
Bolting		Hex Bolts: ASTM A320/A320M, Type 316 stainless steel, grade 5 Nuts: ASTM F594, Type 316 stainless steel, grade 5
Gaskets	All Flanges	Flanged, Water and Sewage Service: 1/8-inch thick, red rubber (SBR), hardness 80 (Shore A), rated to 200 degrees F., conforming to ANSI B16.21, AWWA C207, and ASTM D1330, Grades 1 and 2. Blind flanges shall be gasketed covering the entire inside face with the gasket cemented to the blind flange.
Thread Lubricant	2 inch & smaller	Heavy duty anti-seize joint lubricant for stainless steel threads that is insoluble in water.

15100-1 PSDS SSTP

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SECTION 15100 PSDS SSTT

PIPING SYSTEM DATA SHEET – STAINLESS STEEL TUBING

ITEM	DESCRIPTION
Tubing	Tubing shall be manufactured from 316 alloy stainless steel to be a seamless product. Material shall meet the requirements of ASTM A269. Tubing wall thickness shall be selected to result in a minimum pressure rating of 3000 psig, or the test pressure listed in the Pipe Schedule, whichever is greater. Tubing shall not be bent without the use of an approved tube bending tool sized appropriately for tubing being bent.
Finish	Pickle interior and exterior of all stainless steel tubing, fittings, and finished assemblies following fabrication to remove all mill scale, weld inclusions and color; in accordance with ASTM A380. Passivate inside and out in accordance with ASTM A967. Outer surface shall be bead blasted per ASTM A380.
Fittings	Compression Compression fittings shall be Type 316 alloy stainless steel and shall use two ferrules to provide water or air tight seal. Fittings shall be selected to match the tubing diameter. Fittings shall not transmit torque to tubing during installation. Threaded Threaded pipe, gauge or instrument connections shall be made using stainless steel, 150-pound, threaded half-couplings conforming to ASTM A182 or ASTM A276, adapted using compression fittings at the locations specified or shown on the drawings.
Joints	Joints and tees shall be made with union, elbow, or tee fittings only as described above.
Thread Lubricant	Teflon Tape

15100-1 PSDS SSTT

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SECTION 15100 PSDS VCP

PIPING SYSTEM DATA SHEET – VITRIFIED CLAY GRAVITY SEWER PIPE

ITEM	DESCRIPTION
Pipe	All VCP to be in conformance with City of Roseville Design & Construction Standards. VCP shall be considered Extra Strength with no solution or glazing for enhanced air pressure test performance. VCP to conform to the requirements of ASTM C700, C301, C828.
Fittings	Conform to the requirements of ASTM C700 with watertight preformed joints used with VCP.
Joints	Two part polyurethane mixture joint with bell and spigot conforming to ASTM C425. Joints shall have resilient properties.
Gaskets	Conform to the requirements of ASTM C700.
Joint Lubricant	Vegetable based soap lubricant and as per Manufacturer's standard.

15100-1 PSDS VCP

SECTION 15100 PSDS WSP

PIPING SYSTEM DATA SHEET – WELDED STEEL PIPE

ITEM	DESCRIPTION
Pipe	Carbon steel ASTM A283/A283M Rev A Grade C or ASTM A285/A285M Grade C, sheet or coil, fabricated in accordance with AWWA C200, straight or spiral seam, thickness designed for 66 percent of minimum yield stress at hydrostatic test pressure, minimum thickness 1/4-inch, sizes are to be nominal outside diameters conforming to ASME B36.10M.
Linings/Coatings	Lining: Cement-Mortar: AWWA C205 Coating: Per 15100PS – Pipe Schedule and 09900 – Painting Factory Applied Lining and Coating: Fusion Bonded Epoxy per AWWA C-213, 16 mil thickness. 3M Scotchkote 206N, or equal. Field Coating: Per 15100P, Pipe Schedule and 09900 – Painting
Joints	Full penetration butt-welded, flanged, rolled grooved end where shown and/or required.
Fittings	All fittings 6" and smaller shall be forged. Fittings 8" to 24 inches may be forged or fabricated, unless shown otherwise on the Drawings. Fabricated: Carbon steel fabricated from pipe in accordance with AWWA C208; elbows to have a 22.5-degree maximum miter section angle and a radius of 2.5 times the diameter, unless shown otherwise; wyes, tees, crosses, and outlets to be reinforced in accordance with AWWA M-11. Forged: Butt-welding fittings, ASTM A234/A234M, Grade WPB meeting the requirements of ANSI B16.9. Fitting wall thickness to match adjoining pipe. Elbows to be long radius unless shown otherwise.
Flanges	AWWA C207, Class D (150 psi), Class E (250 psi), or Class F (275 psi) hub or ring type. Pressure class to match pipe.
Bolting	Carbon steel ASTM A307, Grade A hex head bolts and ASTM A563, Grade A hex head nuts. Bolts for rolled grooved ends shall be manufacturer's standard.

15100-1 PSDS WSP

ITEM	DESCRIPTION
Gaskets	<u>Potable Water and Sewage Service:</u> 1/8-inch thick, cloth-inserted rubber, corrosive acid and alkali free conforming to ANSI B16.21 and AWWA C207. Provide full-face gaskets for flat-face flanges; flat ring gaskets for raised-face flanges. Gaskets for rolled grooved ends shall be as recommended by manufacturer for sewage service.

15100-2 PSDS WSP

SECTION 15100 PSDS WSSTP**PIPING SYSTEM DATA SHEET – WELDED STAINLESS STEEL PIPE**

ITEM	DESCRIPTION
Pipe	ANSI/AWWA C220, Standard for Stainless Steel Pipe, 1/2-inch diameter and larger, latest revision. Pressure class to accommodate test pressure listed in Pipe Schedule. Type as indicated in the Piping Schedule. Minimum Schedule 10.
Linings/Coatings	None
Joints	Full penetration butt-welded, flanged, rolled grooved end, or threaded where shown and/or required.
Fittings	Fabricated: Type 304 stainless steel fabricated in accordance with AWWA C208; elbows to have a 22.5-degree maximum miter section angle, minimum of three sections; wyes, tees, crosses, and outlets to be reinforced in accordance with AWWA M-11. Forged: Butt-welding fittings, ASTM A403M, type 304 stainless steel. Fitting wall thickness to match adjoining pipe. Threaded: Piping 4" and less, threaded per ANSI B1.20.1, pressure class to accommodate test pressure, stainless grade to match pipe grade (ASTM A351 CF8 for grade 304 pipe and CF8M for grade 316 pipe).
Flanges	AWWA C207, Class D (150 psi), Class E (250 psi), or Class F (275 psi) hub or ring type. Type 304 stainless steel, pressure class to match pipe.
Bolting	Hex Bolts: ASTM A320/A320M, Type 304 stainless steel, grade 5 Nuts: ASTM F594, Type 304 stainless steel, grade 5
Gaskets	1/8-inch thick, cloth-inserted rubber, corrosive acid and alkali free for intended service conforming to ANSI B16.21 and AWWA C207; full-face gaskets for flat-face flanges; flat ring gaskets for raised-face flanges. Gaskets for rolled grooved ends shall be as recommended by manufacturer for intended service.
Thread Lubricant	Nonseizing, industrial grade thread sealing compound that is insoluble in water

15100-1 PSDS WSSTP

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15100-2 PSDS WSSTP

City of Roseville
West Side Tank and Pump Station Project (Phase 2)
17-083

November 2019
Final Design Submittal

SECTION 15120

PIPING SPECIALTIES

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Manufacturer's data on materials, construction, end connections, ratings, overall lengths, etc.

PART 2 - PRODUCTS

2.1 SERVICE SADDLES

- A. Double-Strap Iron:
 - 1. Pressure Rating: Capable of withstanding 150 psi internal pressure without leakage or over stressing.
 - 2. Run Diameter: Compatible with outside diameter of pipe on which saddle is installed.
 - 3. Taps: Iron pipe threads.
 - 4. Materials:
 - a. Body: Malleable or ductile iron, or PVC.
 - b. Straps: Galvanized steel.
 - c. Hex Nuts and Washers: Steel.
 - d. Seal: Rubber.
 - 5. Manufacturers and Products:
 - a. PVC:
 - 1) Jones J-996
 - 2) Mueller H-13490/1/2/3/4
 - 3) Ford S912
 - 4) Or Equal
 - b. DIP:
 - 1) Jones J-996
 - 2) Mueller BR2B0474IP, BR2B0684IP, BR2B0899IP, BR2B1104IP, BR2B1314IP, BR2B1732IP
 - 3) Ford
 - 4) Or Equal

2.2 FLEXIBLE COUPLINGS

- A. Flexible Couplings (FC)
 - 1. Features:
 - a. Description: Sleeve-type flexible couplings
 - b. Pressure and Service: Same as connected piping.
 - c. Sleeve material: Carbon steel for carbon steel and ductile iron piping systems, or stainless steel for stainless steel piping systems.
 - d. Coating and Lining: All cast and carbon steel components shall be epoxy lined and coated, minimum 16 mils thickness. For potable water service, lining shall be NSF-61 certified.
 - e. Gasket: EPDM

- f. Bolts and Nuts: Alloy steel, corrosion-resistant, prime coated. Buried couplings shall have Type 316 stainless steel bolts and nuts.
- 2. Manufacturers and Products:
 - a. Ductile Iron Pipe:
 - 1) Dresser Piping Specialties; Style 153.
 - 2) Smith-Blair, Inc.; Style 411.
 - 3) Or Equal.
- B. Flanged Coupling Adapters (FCA)
 - 1. Features:
 - a. Description: One end of adapter shall be flanged, and the other end shall have a sleeve type flexible coupling.
 - b. Pressure and Service: Same as connected piping.
 - c. Adapter body material: Cast iron or steel.
 - d. Gasket: EPDM
 - e. Bolts and Nuts: Alloy steel, corrosion-resistant, prime coated. Buried couplings shall have Type 316 stainless steel bolts and nuts.
 - 2. Manufacturers and Products:
 - a. Ductile Iron Pipe:
 - 1) Dresser Piping Specialties; Style 227.
 - 2) Smith-Blair, Inc.; Style 127.
 - 3) Or Equal.
- C. Restrained Flanged Coupling Adapters (RFCA)
 - 1. Features:
 - a. Description: One end of adapter shall be flanged, and the other end shall have a sleeve type flexible coupling.
 - b. Pressure and Service: Same as connected piping.
 - c. Adapter body material: Cast iron or steel.
 - d. Gasket: EPDM
 - e. Bolts and Nuts: Alloy steel, corrosion-resistant, prime coated. Buried couplings shall have Type 316 stainless steel bolts and nuts.
 - f. Restraining lug.
 - 2. Manufacturers and Products:
 - a. Ductile Iron Pipe:
 - 1) Flange Adapters: For use with AWWA grooved end pipe and fittings, for mating to ANSI Class 125 flanged components.
 - 2) Victaulic Style 341.
 - 3) Romac Industries; RFCA
 - 4) Or Equal.
- D. Restraint Rods for Flexible Couplings: As shown on the Drawings

2.3 RESTRAINED COUPLINGS

- A. Restrained Mechanical Joint Glands (RMJ)
 - 1. Pressure Rating:
 - a. Minimum Working Pressure Rating: Not less than 150 psi.
 - b. Safety Factor: Not less than two times working pressure and shall be supported by manufacturer's proof testing.
 - 2. RMJ gland shall be designed for use with standard mechanical joint pipe. Pipe restraint products designed for use with push-on joints will not be acceptable.
 - 3. Thrust Restraint:

- a. Provide hardened steel wedges that bear against and engage outer pipe surface, and allow articulation of pipe joint after assembly while wedges remain in their original setting position on pipe surface.
 - b. Products employing set screws that bear directly on pipe will not be acceptable.
 - 4. Manufacturer and Product:
 - a. Ductile Iron Pipe Only
 - 1) EBAA Iron Sales Co.; Megalug.
 - 2) Romac Industries Inc.: RomaGrip
 - 3) Or Equal.
- B. Dismantling Joint
- 1. Pressure Rating
 - a. Minimum Working Pressure Rating: Not less than 150 psi
 - b. Pressure rating to be no less than test pressure for piping system in which the Restrained Dismantling Joint is used.
 - c. Safety Factor: Not less than two times working pressure and shall be supported by manufacturer's proof testing.
 - 2. Thrust Restraint
 - a. Provide steel tie rods, ASTM A 193 GR B7
 - b. Number and arrangement of tie rods to provide dismantling joint assembly which meets pressure rating requirement.
 - 3. Materials of Construction
 - a. Flanged Adapter Body: Steel
 - b. Follower Flange: Ductile Iron
 - c. Gasket: Buna-N, NSF-61 approved
 - d. Flange: Steel, per AWWA C207
 - e. Spigot: Steel
 - f. Studs: Type 304 stainless steel
 - g. Coating: NSF-61 approved epoxy
 - 4. Manufacturer and Product
 - a. Smith-Blair, Model 975 or 972, as required for pressure rating
 - b. Romac Industries, Style DJ400
 - c. Or Equal.

2.4 FLEXIBLE EXPANSION JOINTS

- A. Service: Water.
- B. Features:
 - 1. Flexible expansion joints shall be installed in the locations indicated on the drawings and shall be manufactured of ductile iron conforming to the material requirements of ASTM A536 and ANSI/AWWA C153/A21.53. Foundry certification of material shall be readily available upon request.
 - 2. Each flexible expansion joint shall be pressure tested prior to shipment against its own restraint to a minimum of 250 PSI. A minimum 2:1 safety factor, determined from the published pressure rating, shall apply.
 - 3. Each flexible expansion joint shall consist of an expansion joint designed and cast as an integral part of a ball and socket type flexible joint, having a minimum per ball deflection of: 25°, 4" - 8"; 20°, 10" - 12"; 15°, 14+" and 6-inches minimum expansion. The flexible expansion fitting shall not expand or exert an axial imparting thrust under internal water pressure. The flexible expansion fitting shall not increase or decrease the internal water volume as the unit expands or contracts.

4. All internal surfaces (wetted parts) shall be lined with a minimum of 15 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C213. Sealing gaskets shall be constructed of EPDM. The coating and gaskets shall meet ANSI/NSF-61.
5. Exterior surfaces shall be coated with a minimum of 6 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C116/A21.16.
6. Polyethylene sleeves, meeting ANSI/AWWA C105/A21.5, shall be included for direct buried applications.

C. Manufacturers and Products:

1. FLEX-TEND Force Balanced manufactured by EBAA Iron, Inc. Eastland, TX., U.S.A.
2. Or equal.

2.5 MODULAR MECHANICAL SEAL

- A. Type: Interconnecting synthetic rubber links shaped and sized to continuously fill annular space between pipe and sleeve, blockout, or core-drilled opening in concrete slabs or walls.

B. Features:

1. Links: EPDM
2. Bolts and nuts: Type 316 stainless steel
3. Pressure plates: composite
4. Temperature range: -40 to 250 degrees Fahrenheit
5. Pressure rating: guaranteed by the manufacturer to provide a water-tight seal with a differential hydrostatic head of 40-feet of water

C. Manufacturers and Products:

1. PSI-Thunderline; Link-seal, Type S-316
2. Or equal

2.6 PIPE TO MANHOLE CONNECTORS

- A. Type: Resilient rubber male-to-female wedge-style flexible connector between a circular gravity pipe and a circular opening core-drilled into a precast or cast-in-place concrete structure.

B. Performance Requirements:

1. Able to hold 10 psi head pressure for 10 minutes with no leakage
2. Load Rating: 150 lbs per inch pipe diameter

C. Materials:

1. Body: resilient rubber material conforming to ASTM C923
2. Hardware: 300 Series Stainless Steel conforming to ASTM C923, ASTM A666 and ASTM A240

D. Manufacturer and Products

1. Trelleborg Pipe Seals Milford, Inc., Model Kor-N-Seal I – 106 Series for pipes up to 18" diameter and Kor-N-Seal II – 206 Series for pipes from 20" to 54" in diameter.
2. Or Equal

2.7 CHEMICAL CONNECTION

- A. Type: Lockable Male Cam-lock
 - 1. Materials:
 - a. Adapter and Cap: Glass-reinforced polypropylene
 - b. Gaskets and O-rings: Viton
 - c. Handles, Rings, and Pins: Stainless Steel
 - 2. Temperature Rating: 0 to 150 deg F
 - 3. Pressure Rating:
 - a. 0 deg F: 100 psi
 - b. 70 deg F: 125 psi
 - c. 150 deg F: 70 psi
 - 4. Adapter:
 - a. 2" FNPT x Male quick connect adapter
 - 5. Cap
 - a. 2" Lockable Type
- B. Manufacturers and Products:
 - 1. Banjo
 - a. Adapter: 200A with Viton gasket
 - b. Cap: 200CAP with Viton gasket
 - 2. Or equal

2.8 NON-METALLIC CORPORATION STOP WITH INJECTION QUILL

- A. Type: Complete assembly of corporation stop, injection quill, and safety chain, designed for use on process pipes 4" or larger. Construction shall be fully compatible with service conditions.
- B. Corporation Stop:
 - 1. Process Connection: 3/4" Male NPT.
 - 2. Rated 150 psi at 195 degrees F.
 - 3. ASTM D1784, Type I, Grade 1 chlorinated polyvinyl chloride body, ball, and stem, end entry.
 - 4. Threaded ends.
 - 5. Viton or Teflon seat.
 - 6. Viton O-rings and stem seals.
 - 7. Manufacturers
 - a. Jones
 - b. Mueller
 - c. Ford
 - d. AY McDonalds MFG Co
 - e. or approved equal
- C. Injection Quill:
 - 1. Process Connection: 1/2" female NPT.
 - 2. Dimensions:
 - a. Minimum 1/4" inside diameter.
 - b. Tapered injector tip, oriented to maximize chemical dispersion.
 - c. Select injection quill length such that tip of quill extends into process pipe between one-third and one-half of process pipe diameter. Minimum distance from pipe wall to injector tip shall be 2-inches.
 - 3. Materials:

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- a. Solution Tube Assembly: CPVC.
 - b. Ring, Sleeve and Capture Nut: PVDF.
- 4. Minimum Pressure Rating: 150 psi.
- D. Safety Chain:
 - 1. Designed to prevent injection quill withdrawal before corporation stop is closed.
- E. Manufacturers and Products:
 - 1. Hydro Instruments, CS-075-CPVC.
 - 2. Neptune, CS2-75-PVC.
 - 3. Or Equal

2.9 STRAINERS

- A. CPVC Y-STRAINER, 4" diameter and smaller
 - 1. Materials:
 - a. Body: CPVC
 - b. Hex Cleanout Cap: CPVC
 - c. Screen: CPVC
 - d. O-rings and gaskets: Viton
 - 2. 1/32" perforated screen
 - 3. Minimum Pressure Rating: 150 psi
 - 4. Size and connection as shown on the Drawings
 - 5. Manufacturer:
 - a. Hayward Flow Control Systems
 - b. Or Equal
- B. BRONZE Y-STRAINER, 4" diameter and smaller
 - 1. Material:
 - a. Body: Bronze
 - b. Hex Cleanout Cap: Brass or Bronze
 - c. Screen: 304 stainless steel, 1/32" perforations
 - d. O-rings and gaskets: PTFE or Teflon
 - 2. Minimum Pressure Rating: 300 psi
 - 3. Size and connection as shown on the drawings
 - 4. Manufacturer:
 - a. Apollo 59 series
 - b. Or equal

2.10 WATER METERS:

- A. General: Purchase water meters through environmental utilities department, water division.
- B. Meter Idlers:
 - 1. Manufacturers:
 - a. Ford; Idler #3-ML, #4-ML, 889-0900-NL, Idler #6-NL
 - b. Jones; E-2208
 - c. Spears; 884-017, 885-107
 - 1) No lead
 - d. Or approved equal
- C. Meter Setters

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1. Manufacturers:
 - a. Ford; 40 series
 - b. Jones
 - c. Mueller; B-24118-2N, B-2423-99000N
 - d. AY McDonald; 718 412JC
- D. Meter Spud Couplers
 1. Manufacturers:
 - a. Ford; C38-33-NL, CF31-66-NL, CF31-77-NL
 - b. Jones; E-129, E-130
 - c. AY McDonalds MFG Co; 718412JC
 - d. Mueller; H-10890N, 10-H90-99029N

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General
 1. Follow all manufacturer's directions
- B. Flexible Couplings (FC)
 1. Follow all manufacturer's directions
 2. No more than 1-inch gap between pipe ends
 3. Center flexible coupling in joint
 4. Tighten bolts in an alternating pattern to provide even tension around the coupling
 5. Tighten bolts to specified torque
 6. In buried installations, wrap coupling with plastic fastened to pipe to protect bolts and coupling from backfill material
- C. Flanged Coupling Adapters (FCA)
 1. Follow all manufacturer's directions
 2. No more than 1-inch gap between pipe plain end and flange face
 3. Tighten flange bolts prior to tightening coupling bolts
 4. Tighten bolts in an alternating pattern to provide even tension around the coupling
 5. Tighten bolts to specified torque
 6. In buried installations, wrap coupling with plastic fastened to pipe to protect bolts and coupling from backfill material
- D. Restrained Mechanical Joint Glands (RMJ)
 1. Follow all manufacturer's directions
 2. Tighten mechanical joint gland bolts before tightening restraint lugs
 3. Tighten restraint lugs until torque head breaks off
 4. In buried installations, wrap joint with plastic fastened to pipe to protect bolts and coupling from backfill material
- E. Pressure Gages
 1. Follow all manufacturer's directions
 2. Install diaphragm seals where process liquid would be detrimental to gage life (wastewater, chemical service, etc.)
 3. Check gage accuracy
- F. Victaulic Couplings

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1. Install in accordance with manufacturer's latest recommendations. Follow the instructions listed in the latest Victaulic I-300 assembly manual.
2. Pipe ends shall be clean and free from indentations and projections in the area from pipe end to groove.
3. The gasket style and elastomeric material (grade) shall be verified as suitable for the intended service as specified.
4. Provide on site training for contractor's field personnel in the proper use of grooving tools, application of groove, and product installation.
5. Gaskets used on potable water systems shall be UL classified in accordance with ANSI/NSF-61.
6. Victaulic's factory trained representative shall periodically visit the job site and review installation. Contractor shall remove and replace any improperly installed products.

+ + END OF SECTION + +

SECTION 15200

VALVES AND OPERATORS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Product data sheets for make and model.
 - 2. Complete catalog information, descriptive literature, specifications, and identification of materials of construction.
 - 3. Certificate of Compliance for: Butterfly valves; full compliance with AWWA C504.
- B. Tests and inspection data.
- C. Operation and Maintenance Data as specified in Section 01330, SUBMITTAL PROCEDURES.

1.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. In accordance with manufacturer's directions.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All valves shall be the same size as the pipe in which they are installed, unless specifically noted otherwise on the Drawings.
- B. All valves shall include all appurtenant parts (operators, chainwheels, handwheels, valve stems, floor stands, gear boxes, operating nut, etc.) for a complete operating valve.
 - 1. Valve shall be, as much as practical, fully factory assembled.
- C. All valves shall open by turning counter-clockwise. Maximum force required for operation shall be 40 lbs.
- D. Where Lead-Free Bronze or Brass is specified, materials shall be in compliance with California Health & Safety Code Section 116875. Not more than a weighted average of 0.25 percent of the wetted surface of the valve shall be lead. Valve shall be provided with a "hang tag" or other marking that easily identifies the valve as Lead-Free.
- E. Coatings and Linings:
 - 1. Provide factory-applied coatings as described herein.
 - 2. Where liquid epoxy coatings are specified, coatings shall conform to AWWA C550.
 - 3. Field coat the exterior of all valve bodies with the same coating as is required for the adjacent pipe in Section 09900, PAINTING and Section 15100, PIPE AND FITTINGS, unless otherwise specified.
- F. Nuts, Bolts and Washers
 - 1. Hex Bolts: ASTM A320/A320M, Type 304 stainless steel, Grade B8, Class 2

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2. Nuts: ASTM F594, Type 304 stainless steel, Grade B8, Class 2
3. Washers: Type 304 stainless steel

2.2 BALL VALVES

A. **BAV-01LF:** Lead-Free Ball Valve, 3 inches and smaller:

1. Service: Potable Water
2. Features:
 - a. Two-piece, end-entry type
 - b. Lead-Free Brass & Bronze Materials in compliance with California Health & Safety Code Section 116875. Not more than a weighted average of 0.25 percent of the wetted surface of the valve shall be lead. Valve shall be provided with a "hang tag" or other marking that easily identifies the valve as Lead-Free.
 - c. Lead-Free Bronze (Alloy C89836, C89833 or C69300) body
 - d. Chrome-plated lead-free brass (Alloy C27450 or C69300) ball
 - e. RTFE or PTFE seats and packing
 - f. Zinc-coated steel hand lever operator with vinyl grip
 - g. Rated 600-psig WOG, 150-psig SWP.
3. Manufacturer and Products:
 - a. Threaded:
 - 1) Apollo 70LF100 Series
 - 2) Milwaukee; UPBA100
 - 3) Nibco T-685-80-LF
 - 4) Or Equal
 - b. Soldered:
 - 1) Apollo 70LF200 Series
 - 2) Milwaukee; UPBA150
 - 3) Nibco S-685-80-LF
 - 4) Or Equal

B. **BAV-03:** Stainless Steel Ball Valve, 3 Inches and Smaller

1. Service: Water, air.
2. Features:
 - a. Threaded ends
 - b. Rated minimum 800 psig WOG (Water-Oil-Gas)
 - c. Stainless steel body
 - d. Polished stainless steel ball
 - e. Teflon seat
 - f. Stainless steel lever-type handle
3. Manufacturers and Products:
 - a. Apollo, Type 76
 - b. Watts Type S-FBV-1
 - c. Or Equal

C. **BAV-06:** CPVC Ball Valve 4 Inches and Smaller:

1. Service: Water, Chemical Duty.
2. Features:
 - a. Rated 150 psi at 73 degrees F
 - b. ASTM D1784, Type I, Grade 1 chlorinated polyvinyl chloride body, ball, and stem, end entry
 - c. Double union design
 - d. Flanged-end if noted in Valve Schedule, otherwise solvent-weld socket ends
 - e. Viton or Teflon seat

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- f. Viton O-rings and stem seals
 - g. Vented ball
 - 3. Manufacturers and Products:
 - a. Nibco; Chemtrol Tru-Bloc.
 - b. ASAHI/America; Type 21/21A.
 - 4. Or Equal.
- D. **CRP-01:** Ball Corporation Valve 3/4 Inch to 2 Inch:
 - 1. Features:
 - a. Rated 300 psi at 73 degrees F
 - b. Brass alloys C89520 or C89833 with a maximum lead content of 0.25% by weight. Brass alloys shall meet AWWA C800, paragraph 4.1.2.
 - c. Full round-port ball valve, no reduced port permitted
 - d. Ends as required
 - e. Double O-ring stem seals
 - f. Key operator
 - 2. Manufacturers and Products:
 - a. Mueller Company; 300N Series Ball Corporation Valves
 - b. Ford Meter Box Company; FB-NL Series Ballcorp Ball Corporation Valves
 - c. Or Equal.

2.3 BUTTERFLY VALVES

- A. **BFV-10:** Butterfly Valve 4 Inches to 72 Inches:
 - 1. Service: Water.
 - 2. Features:
 - a. Flanged end, short body type.
 - b. AWWA C504, Class 150B.
 - c. Features:
 - 1) Body:
 - a) Cast iron
 - 2) Disc:
 - a) Cast or ductile iron disc
 - b) On valves 24-inch and larger, provide non-hollow discs
 - 3) Shaft:
 - a) Type 304 stainless steel shaft,
 - b) Self-adjusting V-type or O-ring shaft seals.
 - 4) Seat:
 - a) Valves 3- to 20- inch:
 - 1. Buna N or NBR rubber seat bonded or molded in body only.
 - 2. Elastomer seats which are bonded or vulcanized to the body shall have adhesive integrity of bond between seat and body assured by testing, with minimum 75-pound pull in accordance with ASTM D429, Method B.
 - b) Valves 24-inch and larger:
 - 1. Buna N or NBR rubber seat retained within a dovetail groove in the valve body and mechanically locked in place by use of an epoxy filler.
 - 2. Valve to be adjustable from either side
 - 3. Valves using seat fasteners or retaining rings are not allowed
 - c) Provide stainless steel seating surface.
 - 5) Coatings and Linings:
 - a) Liquid epoxy, 12 mil minimum, for valve interior and exterior.
 - b) For potable water applications, epoxy lining shall be NSF 61 approved.

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- c) Epoxy to be holiday free
- d. Valve shall be suitable for throttling operations and infrequent operation after periods of inactivity.
- e. Valve shall be bubble-tight with rated pressure applied from either side.
- f. Smooth flow stream on valve body interior
 - 1) No travel stops for disc on interior of body.
 - 2) Isolate metal-to-metal thrust bearing surfaces from flowstream.
- 3. Manufacturers and Products:
 - a. Henry Pratt Company
 - 1) 3" to 12": Model 2FII
 - 2) 16" to 72": Groundhog
 - b. Mueller
 - 1) 16" to 72": Linesal III
 - c. Or Equal.

2.4 CHECK VALVES

- A. **CKV-06:** CPVC Ball Check Valve 4" and smaller
 - 1. Service: Water, Chemical Duty.
 - 2. Features:
 - a. Materials:
 - 1) CPVC body and ball, conforming to ASTM D1784 Cell Classification 23567-A.
 - 2) FPM (FKM) uni-seats and seal
 - b. Connections: True union or flanged as shown on the Drawings
 - c. 150 psi minimum pressure rating
 - d. 5 psi minimum shutoff
 - 3. Manufacturers and Products:
 - a. Asahi/America Inc.
 - b. Nibco, Chemtrol True Union Ball Check (3" and smaller)
 - c. Or Equal
- B. **CKV-10:** Swing Check Valve (2" to 24")
 - 1. Service: Water.
 - 2. Style: Swing Check, outside lever and spring, flanged-end connections
 - 3. General: Valves shall comply with AWWA C508.
 - 4. Body: Valve body and cover shall be fabricated with cast iron conforming to ASTM A 126 with flanged ends conforming to ANSI B16.1.
 - 5. Disc: The valve disc shall be fabricated of cast iron or ductile iron and rubber faced.
 - 6. Seat and Rings: The valve seat and rings shall be fabricated of bronze conforming to ASTM B62 or B148 or of Buna-N.
 - 7. Disc Bolt: A307 Steel
 - 8. Hinge: Ductile Iron
 - 9. Hinge Pin: The hinge pin shall be fabricated of stainless steel.
 - 10. Provide check valve with limit switch.
 - 11. Coatings and Linings:
 - a. Liquid epoxy, 12 mil minimum, for valve interior and exterior.
 - b. For potable water applications, epoxy lining shall be NSF 61 approved.
 - 12. Manufacturer:
 - a. M&H; Style 259-02, Lever and Spring
 - b. Milliken; Figure 8001, Lever and Spring
 - c. Or equal.
- C. **CKV-30:** Globe-Style Silent Check Valve

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1. Service: Water
2. Working Pressure: 150 psi
3. Features:
 - a. The operation of the valve shall not be affected by the position in the pipeline.
 - b. The valve disk shall be concave to the flow in the pipeline and guided by center shaft.
 - c. The check valve shall have an open area equal to or greater than the pipe diameter.
 - d. Valves 10" and smaller shall be capable of mounting directly to a butterfly valve.
 - e. Check valve shall be spring-loaded, normally-closed by means of a heavy-duty center-guided, stainless steel spring. Flow from the pumps shall cause the valve to open and upon pump shut down, the torsion spring will shut the valve before reverse flow starts and at a point of zero velocity of non-slam closure.
 - f. Ends: ANSI B16.1 Class 125 flanged
4. Materials:
 - a. Body: cast or ductile iron.
 - b. Seat and disk/plug: lead-free bronze or Type 316 Stainless Steel.
 - c. Seating shall be resilient and watertight. The sealing element shall be Buna-N.
 - d. Torsion spring: stainless steel.
 - e. All component parts shall be field replaceable.
5. Manufacturer:
 - a. Apco Series 600
 - b. Valmatic Type 1800.1
 - c. Golden Anderson Model 280
 - d. Or Equal

2.5 GATE VALVES

A. **GAV-01LF:** Lead Free Gate Valve, 3 Inches and Smaller

1. Service: Potable Water
2. Features:
 - a. Lead-Free Brass & Bronze Materials in compliance with California Health & Safety Code Section 116875. Not more than a weighted average of 0.25 percent of the wetted surface of the valve shall be lead. Valve shall be provided with a "hang tag" or other marking that easily identifies the valve as Lead-Free.
 - b. Screwed bonnet
 - c. Single solid wedge gate
 - d. Non-rising stem
 - e. Rated 200-pound WOG.
3. Manufacturers and Products:
 - a. 2" – 2 ½" Threaded:
 - 1) Nibco-113 bronze, threaded end.
 - 2) Or Equal
 - b. Soldered:
 - 1) Stockham; LFB-104, soldered end.
 - 2) Crane; LF1320, soldered end.
 - 3) Or Equal

B. **GAV-10:** Resilient-Seated Gate Valve, 2 Inches to 24 Inches:

1. Service: Water.
2. Features:
 - a. Conforms to AWWA C509 (2") or AWWA C515 (3" to 24")
 - b. Iron body

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- c. Resilient seat, bronze mounted
- d. Full port
- e. Valve Ends:
 - 1) Mechanical joint ends for buried service, unless shown otherwise on drawings or valve schedule
 - 2) Flanged ends for exposed service
- f. Non-rising stem
- g. Actuator for Buried Service:
 - 1) Stem extension, as required, to bring operating nut to within 12" of ground surface.
 - 2) 2-inch operating nut
- h. Actuator for Exposed Service:
 - 1) Handwheel
- i. Design working water pressure: 250 psig
- j. Coatings and Linings:
 - 1) Liquid epoxy, 12 mil minimum, for valve interior and exterior.
 - 2) For potable water applications, epoxy lining shall be NSF 61 approved.
- 3. Manufacturers and Products:
 - a. Mueller 2360 RS
 - b. M&H Valve; 4067R W
 - c. Clow: AFC
 - d. Or Equal.

2.6 PLUG VALVES

- A. **PLV-10:** Eccentric Plug Valve, 3 Inches to 20 Inches:
 - 1. Service: Water, sewage.
 - 2. Features:
 - a. Non-lubricated type.
 - b. Drip-tight shutoff with pressure from either direction.
 - c. Features:
 - 1) Body: Cast iron Type ASTM A126 Class B.
 - 2) Plug:
 - a) Cast iron or 316 stainless steel.
 - b) Round or rectangular port of no less than 80 percent of connecting pipe area.
 - c) Coated with Buna-N, Chloroprene, or Hycar.
 - 3) Seats: Type 316 stainless steel or nickel.
 - 4) Stem:
 - a) Bearing: Self-lubricating stainless steel or reinforced Teflon.
 - b) Seal:
 - 1. Multiple V-rings, U-cups, or O-rings of nitrile rubber.
 - 2. Externally adjustable and re-packable without removing the bonnet or actuator from the valve under pressure.
 - c) Provide upper and lower grit seals on stem.
 - 5) Ends:
 - a) Exposed service: Flanged per ANSI B16.1 or grooved, as shown on Drawings or indicated on Valve Schedule.
 - b) Buried service: Mechanical joint per ANSI A21.11.
 - 6) Actuators:
 - a) Exposed:
 - 1. Valves 3 Inches through 6 Inches: Wrench lever manual actuator.

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- 2. Valves 8 Inches through 20 Inches: Totally enclosed, geared, manual actuator with handwheel
 - b) Buried: 2-inch nut per Valve Schedule.
- 7) Coatings and Linings:
 - a) Liquid epoxy, 12 mil minimum, for valve interior and exterior.
 - b) For potable water applications, epoxy lining shall be NSF 61 approved.
- d. Pressure Rating:
 - 1) Valves 3 Inches through 12 Inches: 175 psi.
 - 2) Valves 14 Inches through 20 Inches: 150 psi.
- 3. Manufacturers and Products:
 - a. DeZurik; Style PEC.
 - b. Pratt; Ballcentric.
 - c. Milliken; Millcentric.
 - d. Or Equal.

2.7 HOSE VALVES

- A. **HSV-01:** ¾" Angle-Pattern Hose Valve, non frost-proof
 - 1. Service: Water.
 - 2. Features:
 - a. ¾-inch NPT female inlet,
 - b. ¾-inch male hose thread outlet,
 - c. Heavy rough brass body rated 125 psi,
 - d. Removable handle,
 - e. Atmospheric vacuum breaker conforming to ASSE Standard 1011 and IAPMO code
 - 3. Manufacturers and Products:
 - a. Acorn; 8131
 - b. Or Equal.
- B. **HSV-03:** Non-Freeze Post Hydrant, ¾" through 2"
 - 1. Features:
 - a. Bronze Non-Freeze Post Hydrant with valve and drain hole below grade and stem extension to 30-inch high post so that hose connection is 30" above grade
 - b. Provide NPT threaded drain hole where drawings show a piped drain.
 - c. Cast Iron Casing Guard
 - d. T-handle key
 - e. Threaded ends, Female NPT inlet and male hose connection outlet
 - f. Atmospheric vacuum breaker conforming to ASSE Standard 1011 and IAPMO code on ¾" size
 - 2. Manufacturers and Products
 - a. Jay R Smith, Figures 5910, 5911, 5912, 5913, 5914
 - b. Zurn, Figures Z1385, Z1390
 - c. Or Equal
 - 3. Manufacturers and Products:
 - a. Jay R Smith, Figure 5509QT
 - b. Zurn, Figure Z1330-C
 - c. Or Equal.

2.8 FIRE HYDRANTS

- A. **HYD-20:** WET-BARREL FIRE HYDRANT
 - 1. Service: Water.
 - 2. Features:

- a. Hydrant shall be manufactured in accordance with AWWA Standard C-503
- b. Hydrant head shall be made of gray cast iron, meeting ASTM A126 Class B specifications. It shall be capable of withstanding a hydrostatic test pressure of 4 (four) times the working water pressure without stressing the material beyond its yield point per Section 4.6.3.2 of AWWA C503.
- c. Valved Ports:
 - 1) Wet-barrel fire hydrants shall feature independently-valved ports. The working parts shall be engineered to function as a unit and to give trouble-free service over 200 pounds working pressure and tested to 400 pounds hydrostatic pressure.
 - 2) Fire hydrants shall be provided with two outlet ports: one 2-1/2" diameter and one 4-1/2" diameter.
- d. All hydrants shall be permanently marked to identify the model number of the hydrant, the manufacturer and the year in which the hydrant was manufactured.
- e. Hose and pumper nozzle threads shall be in conformance with the standard for fire hose connections, NFPA 1963, unless otherwise specified.
- f. Protector caps shall be grey cast iron unless otherwise specified by the purchaser. They shall be securely chained to the hydrant barrel and furnished an inner gasket.
- g. Standard nut size of valve/stem and protector caps shall be of pentagonal shape and furnished with a nut of 1 1/8" measured from point to flat of the pentagon.
- h. Coatings and Linings:
 - 1) Liquid epoxy lining, 12 mil minimum, for fire hydrant interior.
 - 2) For potable water applications, epoxy lining shall be NSF 61 approved.
 - 3) Exterior of hydrants shall receive a primer coat and be furnished with a traffic yellow enamel finish coat for potable water, or a purple enamel finish coat for recycled water.
- 3. Manufacturers and Products
 - a. Jones, Model 4040
 - b. Clow Valve Company, Model 850
 - c. Or equal
- 4. Hydrant Bury:
 - a. South Bay Foundry, MJ
 - b. Clow, MJ
 - c. Or approved equals
- 5. Hydrant Bury Extensions:
 - a. South Bay Foundry, MJ
 - b. Clow; Model CW-EXT-BO
 - c. Tyler
 - d. Or approved equal

2.9 CONTROL VALVES

- A. **PRV-01LF:** Lead-Free Pressure Regulator, 1/2" to 1"
 - 1. Service: Potable Water
 - 2. Type: Type: Adjustable spring-loaded, self-contained pressure regulator
 - 3. Materials:
 - a. Body: Lead-Free Brass & Bronze Materials in compliance with California Health & Safety Code Section 116875. Not more than a weighted average of 0.25 percent of the wetted surface of the valve shall be lead. Valve shall be provided with a "hang tag" or other marking that easily identifies the valve as Lead-Free.
 - b. Trim, Valve Seat and Spring: Stainless Steel
 - c. Diaphragm: Reinforced Buna-N

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4. Pressures:
 - a. Maximum Inlet Pressure: 300 psig
 - b. Outlet Pressure Range: 15 to 70 psig.
 5. Manufacturer/Model:
 - a. Watts Model LF223
 - b. Or Equal.
- B. **ALT-01:** Electronic Control Valve (Altitude Valve with Pressure Relief):
1. Service: Water.
 2. Design Conditions:
 - 1) Valve Size: 16-inch.
 - 2) Flow: 4,000 - 11,000 gpm
 - 3) Inlet Pressure: 50 – 90 psi
 - 4) Outlet Pressure: 0 – 20 psi
 - 5) Initial Pressure Relief Setting: 100 psi (field adjustable)
 3. Warranty:
 - a. The Control Valve manufacturer shall warrant the valve to be free of defects in material and workmanship for a period of three years from date of shipment provided the valve is installed and used in accordance with all applicable instructions. Electrical components shall have a one-year warranty.
 4. Function:
 - a. The Electronic Control Valve shall be capable of controlling downstream pressure, rate of flow, upstream pressure sustaining, tank level control (altitude and modulating), valve position, blending, pressure management or select combinations of any of these applications. Solenoid pilot controls equipped onto the electronic control valve are actuated by electrical signals received from the PLC and/or a local VC-22D electronic valve controller (see Electrical Drawings). The solenoid pilots either add or relieve line pressure from the cover chamber of the control valve, causing it to open or close, ensuring the process variable signal follows the set-point command signal. This enables remote control over the electronic control valve operations. The process variable signal would come from a flow meter, pressure sensor or other rapid fluctuating process. The electric solenoid pilot controls will also be combined with hydraulic Relief Override and electronic fail-safe valve closure upon loss of power. Upon receiving the remote setpoint command from the PLC or a local command from the electronic valve controller, the electronic valve shall modulate and maintain the desired setpoint value. When the feedback signal deviates from the setpoint, the appropriate opening or closing solenoid on the valve will pulse. As the feedback signal approaches the setpoint, this on/off pulse time will gradually decrease to smoothly modulate the valve to setpoint. When the feedback signal is within a programmable dead band, the opening and closing solenoids will lock the cover and the electronic valve will maintain position.
 5. Materials:
 - a. Body and Cover: Ductile Iron-ASTM A536.
 - b. Main Valve Trim: Stainless Steel.
 - c. Seat: Stainless Steel.
 - d. Stem, Nut and Spring: Stainless Steel.
 - e. Seal Disc: Buna-N.
 - f. Diaphragm: Nylon Reinforced Buna-N.
 - g. Internal Trim Parts: Stainless Steel, Bronze and Brass.
 - h. Pressure Rating: Class 150 (250 psi max).
 - i. Temperature Range: Water to 180-deg F.
 - j. Any other wetted metallic parts: Stainless Steel, Bronze and Brass.

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- k. Coating and Lining:
 - 1) Fusion Bonded Epoxy (interior and exterior) per AWWA C116-03.
 - 2) For potable water applications, epoxy lining shall be NSF 61 approved.
- 6. Accessories:
 - a. Position Indicator.
 - b. Analog valve position status transmitter, 4-20 mA to indicate 0-100% of open position to PLC.
 - c. Anti-Cavitation Trim Package.
 - d. Externally mounted wye strainer with flush valve on supply line.
 - e. Nameplates:
 - 1) Each Control Valve and associated pilot(s) shall be provided with an identifying nameplate.
 - 2) Nameplates, depending on type and size of control valve, shall be mounted in the most practical position possible, typically on the inlet side of the valve body.
 - 3) Nameplates shall be brass and a minimum of 3/32" thick, 3/4" high and 2-3/4" long, unless otherwise approved by Engineer.
 - 4) Pertinent control valve data shall be etched or stamped into the nameplate. Data shall include control valve Catalog number, function, size, material, pressure rating, end-connection details, type of pilot controls used and control adjustment range.
- 7. Manufacture:
 - 1) Main Valve:
 - a) The main valve shall be hydraulically operated, single diaphragm actuated, globe or angle pattern as shown on the Drawings. The valve shall consist of three major components; the body with seat installed, the cover with bearing installed and the diaphragm assembly. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating the operating pressure from line pressure. Packing glands, stuffing boxes and/or rolling diaphragm technology will not be permitted and there shall be no pistons operating the main valve or pilot controls. No fabrication or welding shall be used in the manufacturing process. Y-pattern valves shall not be permitted. Main valve shall be certified by NSF/ANSI Standard 61 as a safe drinking water system component.
 - 2) End Connections:
 - a) End Connections for control valve shall be flanged per ASME/ANSI B16.42, Class 150.
 - 3) Main Valve Body:
 - a) No separate chamber(s) below the diaphragm shall be allowed between the main valve cover and body. No fabrication or welding shall be used in the manufacturing process.
 - b) The valve shall contain a resilient, synthetic rubber disc with a rectangular cross-section contained on three- and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. No O-ring type discs (circular, square, or quad type) shall be permitted as the seating surface. The disc guide shall be of the contoured type to permit smooth transition of flow and shall hold the discs firmly in place. The disc retainer shall be of a sturdy one-piece design capable of withstanding opening and closing shocks. It must have straight edge sides and a radius at the top edge to prevent excessive diaphragm wear as the diaphragm flexes across this surface. No hours-glass shaped disc retainers shall be permitted, and no V-type or slotted-type disc guides shall be used.

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- c) The diaphragm assembly containing a non-magnetic stainless-steel stem; of sufficient diameter to withstand high hydraulic pressures and shall be fully guided at both ends by a bearing in the main valve cover and an integral bearing in the valve seat. The valve seat shall be a solid, one-piece design and shall have a minimum five-degree taper on the seating surface for a positive, drip-tight shut off. No center guides shall be permitted. The stem shall be drilled and tapped in the cover end to receive and affix such accessories as may be deemed necessary. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating the operating pressure from the line pressure. No bolts or cap screws shall be permitted for use in the construction of the diaphragm assembly.
 - d) The flexible, non-wicking, FDA approved diaphragm shall consist of nylon fabric bonded with synthetic rubber compatible with the operating fluid. The diaphragm's center hole for the main valve stem must be sealed by the vulcanized process or a rubber grommet sealing the center stem hole from the operating pressure. The diaphragm must withstand a Mullins Burst Test of a minimum of 600 X per layer of nylon fabric and shall be cyclic tested 100,000 times to insure longevity. The diaphragm shall not be used as the seating surface. The diaphragm shall be fully supported in the valve body and cover by machined surfaces which support no less than one-half of the total surface area of the diaphragm in either the fully opened or fully closed position. Bellofram type rolling diaphragms shall not be permitted.
 - e) The main valve seat and stem bearing in the valve cover shall be removable. The cover bearing and seat in the 6" and smaller size valve shall be threaded into the cover and body. The valve seat in the 8" and larger size valves shall be retained by flat head machine screws for ease of maintenance. The lower bearing of the valve stem shall be contained concentrically within the seat and shall be exposed to the flow on all sides to avoid deposits. To insure proper alignment of the valve stem, the valve body and cover shall be machined with a locating lip. No "pinned" covers to the valve body shall be permitted. Cover bearing, disc retainer and seat shall be made of the same material. All necessary repairs and/or modifications other than replacement of the main valve body shall be possible without removing the valve from the pipeline. The valve shall be designed such that both the cover assembly and internal diaphragm assembly can be disassembled and lifted vertically straight up from the top of a narrow opening/vault. Y-pattern valves shall not be permitted. The seat shall be of the solid one piece design. Two piece seats or seat inserts shall not be permitted. Packing glands and/or stuffing boxes shall not be permitted.
- 4) Pilot Control System:
- a) The pilot control shall be through two direct acting two-way solenoid pilot valves controlled by an external power source. The pilot control system shall include strainers and solenoid manual by-pass valves. The pilot control system shall utilize Stainless Steel control tubing and fittings. The solenoid pilot valves either add or relieve line pressure from the cover chamber of the main valve, causing it to open or close as directed by the electronic controller. Solenoids shall have NEMA IV enclosures.
 - b) Materials for Solenoid Pilot Controls:
 - 1. Body: Stainless Steel.
 - 2. Pilot Trim: Stainless Steel.

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3. Seals and Disc: NBR.
 4. Core and Plugnut: 430F Stainless Steel.
 5. Core Springs: 302 Stainless Steel.
 6. Shading Coil: Copper.
 7. Disc-Holder: CA.
 8. Core Guide: CA.
 9. Connections: FNPT.
 10. Pressure Rating: 400 psi max.
 11. Temperature Range:
AC: Water to 125 deg-F max.
DC: Water to 104 deg-F max.
 12. Power Supply: 120 VAC, 60 Hz.
 13. Enclosure: NEMA Type1
 14. Control Tubing: Stainless Steel.
 15. Control Fittings: Stainless Steel.
8. Factory Assembly:
 - a. Each control valve shall be factory assembled.
 - b. For all control valves, the factory assembly shall include the complete main valve, pilot valve(s), and all associated accessories and control equipment.
 - c. During factory assembly the control valve manufacturer shall make all necessary adjustments and correct any defects.
 9. Factory Testing:
 - a. Each control valve shall be factory tested.
 - b. Tests shall conform to approved test procedures.
 - c. The standard factory tests shall include a valve body and cover leakage test, seat leakage test and a stroke test. Control valves and pilot valves, in the partially open position, with both ends closed off with blind flanges (valves) and pipe plugs (pilots), shall be subject to an air test. The applied air pressure shall be 90 psi minimum. All air pressure tests shall be applied for a minimum of 15 minutes. No visible leakage is permitted through the valve seat, the pressure boundary walls of the valve body, valve cover, pilot body, pilot cover or the body-cover joint.
 - d. Control valve manufacturer shall, upon request, offer additional testing, such as high-pressure hydrostatic testing, positive material inspection testing, ferrite testing, liquid penetration inspection testing, magnetic particle examination testing and radiographic examination testing.
 10. Field Testing:
 - a. A direct factory representative shall be made available by the equipment supplier for start-up service, inspection and necessary adjustments.
 11. Manufacturers and Products:
 - a. Cla-Val Company Model 131-17 Electronic Interface Control Valve, Equipped to close on Power Failure and Pressure Relief Override as manufactured by Cla-Val Co., Newport Beach, CA 92659-0325
 - b. Or Equal.

2.10 AIR RELIEF AND VACUUM VALVES

- A. **AVV-01:** Air/Vacuum Valve, 1/2" to 3"
 1. Service: Water.
 2. Features:
 - a. Automatically exhausts large amounts of air during pipeline filling and allows large quantities of air to enter pipeline during pipeline draining to break vacuum.

- b. Once air has been exhausted, uses water pressure to close valve. In CLOSED position, seat against resilient seat to prevent water leakage.
 - c. Rated 200 psi working pressure.
 - d. Provide vent hose or piping and route discharge line to nearest drain/structure.
 - e. Cast iron, ductile iron, or semi-steel body and cover with stainless steel float and trim.
 - f. Model determined by size indicated in Valve Schedule or on Drawings.
 - 3. Manufacturers and Products:
 - a. APCO Valve and Primer Corp.; 140 Series.
 - b. Val-Matic Valve; 104S/38 Series.
 - c. Or equal.
- B. AVV-02: Air/Vacuum Valve for Vertical Turbine Pumps**
- 1. Service: Water.
 - 2. Features:
 - a. Automatically exhausts large amounts of air when pump starts and allows large quantities of air to re-enter the pump column when pump stops to break vacuum.
 - b. Once air has been exhausted, uses water pressure to close valve. In CLOSED position, seat against resilient seat to prevent water leakage.
 - c. Discharge orifice shall be fitted with a double-acting throttling device to automatically regulate and restrict air venting and to establish pressure loading on rising suction column of water to minimize air surging. On pump stop, throttling device shall automatically open to allow full line unrestricted air re-entry to prevent vacuum from forming in the pump column.
 - d. Rated 200 psi working pressure
 - e. Cast iron, ductile iron, or semi-steel body and cover with stainless steel float and trim.
 - f. Includes butterfly isolation valve, surge check valve, air release valve with ball isolation valve, and mushroom vent.
 - g. Model determined by size as indicated in Valve Schedule or on Drawings.
 - 3. Manufacturers and Products:
 - a. APCO Valve and Primer Corp.; Series 1204 with 200A series air release valve.
 - b. Val-Matic Valve; 100ST Series.
 - 4. Or equal.
- C. CARV-01: Combination Air Release and Vacuum Valve, Water Service up to 150 psi:**
- 1. Service: Water.
 - 2. Features:
 - a. Combines the operating features of both an air vacuum valve and air release valve, allowing to vent or re-enter system freely in either direction.
 - b. Once air has been exhausted, uses water pressure to close valve. In CLOSED position, seat against resilient seat to prevent water leakage.
 - c. Single-body type
 - d. Rated 150 psi working pressure, orifice size by manufacturer (minimum orifice size 3/32-inch).
 - e. Cast iron, ductile iron, or semi-steel body, cover with stainless steel float and trim.
 - f. 2-inch inlet, 2-inch outlet.
 - g. Provide No. 16 Mesh 316SS screen on inlets and outlets.
 - h. Provide vent hose or piping and route discharge line to nearest drain/structure.
 - i. Coatings and Linings:
 - 1) Liquid epoxy, 12 mil minimum, for valve interior and exterior.
 - 2) For potable water applications, epoxy lining shall be NSF 61 approved.

3. Manufacturers:
 - a. APCO Valve and Primer Corp., Model 145C
 - b. Val-Matic Valve; Model VM-202C.2
 - c. Or equal.

2.11 BACKFLOW PREVENTERS

- A. **BFP-01:** Reduced-Pressure Principle Backflow Prevention Assembly:
 1. Service: Water.
 2. Materials:
 - a. Body: lead-free bronze materials or epoxy-coated cast/ductile iron.
 - b. Test cocks: lead-free bronze
 - c. Ball valves: lead-free bronze
 - d. Valve Seats: stainless steel or Noryl
 3. Features:
 - a. Two check valves with an independent relief valve between the valves,
 - b. Two resilient-seated isolation gate valves or ball valves
 - c. Test cocks, in accordance with AWWA C511
 - d. Rated 175 psi maximum working pressure,
 - e. Meets requirements of USC Foundation For Cross-Connection Control and Hydraulic Research.
 - f. Ends: as required for installation as shown on Drawings
 - g. Coatings and Linings (steel and cast iron):
 - 1) Liquid epoxy, 12 mil minimum, for valve interior and exterior.
 - 2) For potable water applications, epoxy lining shall be NSF 61 approved.
 4. Backflow assembly color: Forest Green
 5. Manufacturers and Products:
 - a. Watts; Model 099, 909, 709 DCDA, 909 RPDA
 - b. Wilkins; Model 975, 375ASt, 375 ASTR, 350ASTDA
 - c. Ames; Model 300 DCDA stainless, 4000RP stainless or epoxy, 4000B, 5000 RPDA epoxy
 - d. Conbraco/Appollo: Model 40-200 series
 6. Backflow Assembly Support Stands
 - a. Placer Waterworks Series PW/PS
 - b. Or approved equal
 7. Backflow Assembly Support Stands Saddle
 - a. Placer Waterworks series PW/SDL
 - b. Or approved equal
 8. Blocking for Boxes:
 - a. Slump Block
 - b. Or approved equal

2.12 OPERATORS

- A. General:
 1. Operator force not to exceed 40 pounds under any operating condition, including initial breakaway. Gear reduction operator when force exceeds 40 pounds.
 2. Operator self-locking type or equipped with self-locking device.
 3. Provide position indicator on all valves.
 4. Worm and gear operators one-piece design worm-gears of gear bronze material. Worm hardened alloy steel with thread ground and polished. Traveling nut type operators threaded steel reach rods with internally threaded bronze or ductile iron nut.

5. Valve handles, wheels, etc. to be designed to accommodate a padlock.
- B. Manual Operator:
 1. Galvanized and painted handwheels.
 2. Lever operators allowed on quarter-turn valves 8 inches and smaller.
 3. Cranks on gear type operators.
 4. For all valves above 5'-0" above adjacent working surface (finished floor or finished grade), provide chain wheel operator with tiebacks
 5. For all exposed valves below adjacent working surface (finished floor or walkway), provide extension stem, floor stands, and other accessories to permit operation from 2'-6" above adjacent working surface.
 6. For all buried valves 3" and larger, provide stem extension, valve bonnet, valve box and 2" AWWA operating nut such that operating nut is within 12" of adjacent finished grade.
 - a. For small-diameter buried valves, provide cross-shaped handle for operating with forked key.
 7. Valve Extension Manufacturer:
 - a. Placer Waterworks Extension
 - b. Or approved equal

2.13 ACCESSORIES

- A. T-Handled Operating Wrench:
 1. One each galvanized operating wrench, 4 feet long.
 2. Manufacturers and Products:
 - a. Mueller; No. A-24610.
 - b. Clow No.; F-2520.
 - c. Or Equal.
- B. Cast Iron Valve Box: Designed for traffic loads, sliding type, with minimum of 6-inch ID shaft.
 1. Box: Cast iron with minimum depth of 9 inches.
 2. Lid: Cast iron, minimum depth 3 inches, marked WATER.
 3. Extensions: Cast iron.
 4. Manufacturer:
 - a. Christy (H-20)
 - b. Or approved Equal

PART 3 - EXECUTION

3.1 VALVE SCHEDULE

- A. A Valve Schedule has been attached to this Specification and is incorporated herein by reference. Provide valves in accordance with Valve Schedule.
- B. For valves that are not referenced in Valve Schedule, provide the valve type and size called for on the Drawings.

3.2 PREPARATION

- A. Cleaning:
 1. Clean all mating faces of valve (threads, flange faces, etc.) prior to assembly.

2. Remove all debris from valve body prior to assembly.
 3. Take extra care to clean mating faces of existing pipe and fittings which may have corrosion, dirt, debris and mineral build-up which should be removed for a proper fit.
- B. Apply joint compound, lubricant, etc. as recommended by valve manufacturer for proper installation prior to installation.
- C. Install valves in accordance with the following schedule and as noted on the Drawings:

3.3 INSTALLATION

- A. Install valves per manufacturer's recommendations.
- B. Install valves so handles operate from fully open to fully closed without encountering obstructions.
- C. Install valves in location and orientation for easy access for routine operation and maintenance. Access should be such that an operator can operate the valve by reaching a handle, chain, etc. at a height between 2'-6" and 5'-0" above adjacent work surface (for buried valves, this is accomplished with a t-handle wrench and the operating nut being within 12" of finished grade).
- D. Install plug valves with the seat side as indicated on the drawings. If manufacturer's recommendations differ from indicated seat direction on the drawings, or if no seat side is indicated, install plug valves with seat side as recommended by the manufacturer after obtaining approval from the ENGINEER.

3.4 TESTS AND INSPECTION

- A. Valve may be either tested while testing pipelines, or as a separate step.
- B. Test that valves open and close smoothly under operating pressure conditions. Test that two-way valves open and close smoothly under operating pressure conditions from both directions.
- C. Inspect air release and vacuum valves as pipe is being filled to verify venting and seating is fully functional.
- D. Count and record number of turns to open and close valve; account for any discrepancies with manufacturer's data.
- E. Set, verify, and record set pressures for all relief and regulating valves.
- F. Automatic valves to be tested in conjunction with control system testing. Set all opening and closing speeds, limit switches, as required or recommended by the ENGINEER.

3.5 SUPPLEMENTS

- A. The following supplements are attached to this Specification section and incorporated herein by reference:
1. 15200 VS – Valve Schedule

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SECTION 15200 VS

VALVE SCHEDULE

1.1 DESCRIPTION

- A. General:
 - 1. This schedule is provided for the convenience of the CONTRACTOR. Some valves may be shown on the drawings, but not listed here.
 - 2. Valve specifications are given in Section 15200, Valves and Operators.
- B. Valve Tag Number:
 - 1. Tag numbers are as noted in the Drawings.
- C. Valve Type:
 - 1. Valve types are as described in 15200, Valves and Operators
- D. Valve Ends:
 - 1. FLG – Flanged
 - 2. GRV – Grooved End
 - 3. LUG – Lugged
 - 4. MJ – Mechanical Joint
 - a. Where the surrounding piping system is installed with restrained joints, MJ valves shall be installed using RMJ (restrained mechanical joint) glands per 15120, Piping Specialties.
 - 5. SLV – Solvent Welded Socket
 - 6. SLD – Soldered Socket
 - 7. THR – Threaded
 - 8. W – Wafer
- E. Installation Codes
 - 1. Ex – Exposed
 - 2. Un – Underground
- F. Valve Actuators, as described in 15200, Valves and Operators
 - 1. HW – Handwheel
 - 2. L – Lever
 - 3. N – 2" Nut
 - 4. T – T Handle Key
 - 5. N/A – Not Applicable

1.2 VALVE SCHEDULE

VALVE TAG NUMBER	VALVE TYPE	ENDS	DIAMETER	INSTALLATION	ACTUATOR
GENERAL/YARD PIPING					
WD00_VALV_54001	GAV-10	MJ	6"	Un	N
BOOSTER PUMP STATION					
General Piping					
WD24_VALV_54001	BFV-10	FLG	30"	Ex	HW
WD24_VALV_54002	CARV-02	THD	2"	Ex	N/A
WD24_VALV_54003	BFV-10	FLG	16"	Ex	HW
WD24_VALV_54004	ALT-01	FLG	16"	Ex	N
WD24_VALV_54005	BFV-10	FLG	16"	Ex	HW
WD24_VALV_54006	BFP-01	THD	2"	Ex	N
Pump No. 1					
WD24_VALV_54101	BFV-10	FLG	24"	Ex	N
WD24_VALV_54102	AVV-01	THD	1"	Ex	N/A
WD24_VALV_54103	AVV-02	FLG	4"	Ex	N/A
WD24_VALV_54104	CKV-10	FLG	16"	Ex	N/A
WD24_VALV_54105	BFV-10	FLG	16"	Ex	HW
Pump No. 2					
WD24_VALV_54201	BFV-10	FLG	24"	Ex	N
WD24_VALV_54202	AVV-01	THD	1"	Ex	N/A
WD24_VALV_54203	AVV-02	FLG	4"	Ex	N/A
WD24_VALV_54204	CKV-10	FLG	16"	Ex	N/A
WD24_VALV_54205	BFV-10	FLG	16"	Ex	HW
Pump No. 3					
WD24_VALV_54301	BFV-10	FLG	24"	Ex	N
WD24_VALV_54302	AVV-01	THD	1"	Ex	N/A
WD24_VALV_54303	AVV-02	FLG	4"	Ex	N/A
WD24_VALV_54304	CKV-10	FLG	16"	Ex	N/A
WD24_VALV_54305	BFV-10	FLG	16"	Ex	HW
Pump No. 4					
WD24_VALV_54401	BFV-10	FLG	24"	Ex	N
WD24_VALV_54402	AVV-01	THD	1"	Ex	N/A
WD24_VALV_54403	AVV-02	FLG	4"	Ex	N/A
WD24_VALV_54404	CKV-10	FLG	16"	Ex	N/A
WD24_VALV_54405	BFV-10	FLG	16"	Ex	HW
Future Pump No. 5					
WD24_VALV_54501	BFV-10	FLG	24"	Ex	N
HYDROPNEUMATIC TANK					
WD25_VALV_54001	BFV-10	FLG	12"	Ex	HW
WD25_VALV_54002	BAV-01	THD	2"	Ex	L
WD25_VALV_54003	HSV-03	THD	1 ½"	Ex	T

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VALVE TAG NUMBER	VALVE TYPE	ENDS	DIAMETER	INSTALLATION	ACTUATOR
TANK VALVE VAULT					
WD44_VALV_54001	HSV-03	THD	1 ½"	Ex	T
WD44_VALV_54101	BFV-10	FLG	24"	Ex	N
WD44_VALV_54102	CKV-30	FLG	24"	Ex	N/A
WD44_VALV_54103	BFV-10	FLG	24"	Ex	N
WD44_VALV_54104	BFV-10	FLG	30"	Ex	N
WD44_VALV_54201	BFV-10	FLG	24"	Ex	N
WD44_VALV_54202	CKV-30	FLG	24"	Ex	N/A
WD44_VALV_54203	BFV-10	FLG	24"	Ex	N
WD44_VALV_54204	BFV-10	FLG	30"	Ex	N
WD44_VALV_54205	BFV-10	FLG	24"	Ex	N
WD44_VALV_54206	BFV-10	FLG	30"	Ex	N
WATER STORAGE TANKS					
WD45_VALV_54101	GAV-10	FLG	8"	Un	N
WD45_VALV_54102	PLV-10	FLG	6"	Ex	HW
WD45_VALV_54201	GAV-10	FLG	8"	Un	N
WD45_VALV_54202	PLV-10	FLG	6"	Ex	HW

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SECTION 15400

PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop Drawings:
 - 1. Catalog information and rough-in dimensions for plumbing fixtures, products, and specialties.

PART 2 - PRODUCTS

2.1 PLUMBING FIXTURES

- A. Tankless Water Heater (**IWH-02**)
 - 1. Type: Instant water heater designed specifically to provide tepid water to emergency shower and eyewash systems.
 - 2. Construction:
 - a. Enclosed in powder-coated, cold rolled steel NEMA 4 rated cabinet.
 - b. Manufactured from NSF-61 listed materials.
 - c. Parabolic heat design tankless water heater.
 - 3. Electrical Requirements:
 - a. 480 volt, 3 phase, 60 hz
 - b. 126 kW
 - 4. 1 ¼" inlet and outlet connections.
 - 5. Rated to 150 psi.
 - 6. ANSI/UL 499 listed.
 - 7. Standard temperature setting: 90-degrees Fahrenheit
 - 8. Maximum Flow Rate: 40 gpm.
 - 9. Manufacturer and Product:
 - a. Haws Model 9326
 - b. Or Equal
 - c.
- B. Emergency Eyewash and Shower (**EWSS**)
 - 1. Deluge Shower:
 - a. ABS plastic shower head.
 - b. Instant action, stay open, self-draining ball valve.
 - c. Pull-rod.
 - d. Steel stanchion.
 - e. Floor flange.
 - f. Interconnecting piping.
 - 2. Eyewash:
 - a. Aerated eye wash with stainless steel receptor.
 - b. Stay open, self-draining ball valve.
 - c. Push handle control.
 - d. Foot treadle control if available.
 - e. Plastic anti-surge eyewash heads.
 - f. Supply line strainer.

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3. Accessories:
 - a. Scald Protection Bleed Valve: Set to open when internal water temperature rises above 95 degrees F and close when internal temperature drops below 87 degrees F.
 - b. Freeze Protection Bleed Valve: Set to open when the internal water temperature drops below 35 degrees F and close when the internal water temperature rises above 42 degrees F.
 - c. Corrosion-resistant coating.
4. Manufacturers and Products:
 - a. Haws; Model 8300 with SP157B and SP158B
 - b. Speakman
 - c. Or Equal.

2.2 DRAINAGE PRODUCTS

- A. Floor Drain with Funnel (**FD-02**)
 1. Features:
 - a. Cast Iron body and grate
 - b. Funnel top, 4 inch diameter and 4-1/4 inch tall, attached to grate with concealed screws
 - c. Trap primer connection
 - d. Threaded outlet designed for use with PVC drain waste and vent pipe
 2. Manufacturers:
 - a. Jay R. Smith Manufacturing Co.; Model 3510T
 - b. Or equal.
- B. Trench Drain (**TD-01**)
 1. Design Load Class C, Heavy Duty.
 2. Width and length as shown on the Drawings.
 3. Features:
 - a. Drain channel shall be constructed of high-density polyethylene composite, polyvinyl chloride, precast polymer concrete, fiberglass reinforced plastic, or equal material.
 - b. Pre-sloped: 0.6% minimum.
 - c. Bottom outlet, designed for use with PVC drain waste and vent pipe.
 - d. Flat grated trench cover.
 - 1) Material shall be cast or ductile iron, galvanized steel, stainless steel, resin composite, pultruded fiberglass, or other suitable material.
 - 2) Ferrous metals shall have corrosion resistant coating.
 - e. Closed-end construction
 - f. Lap joints to connect the sectional units
 4. Manufacturer and Product:
 - a. Jay R. Smith Manufacturing Co.
 - b. Or Equal

PART 3 - EXECUTION

3.1 DETAILING

- A. Contract Drawings and specifications do not detail all requirements for installation of plumbing fixtures. CONTRACTOR shall provide all required materials to provide a

complete installation of all plumbing fixtures which is fully functional and compliant with all applicable codes and regulations.

3.2 PLUMBING FIXTURE INSTALLATION

- A. General:
 - 1. Install all plumbing fixtures plumb, level and per the manufacturer's instructions.
- B. Plumbing Fixtures, Mounting Heights:
 - 1. Standard rough-in catalogued heights, unless shown otherwise on Drawings.
 - 2. Caulk fixtures in contact with finished walls with waterproof, white, non-hardening sealant which will not crack, shrink, or change color with age.
- C. Fixture Trim: Install fixture trim where applicable on fixtures.
- D. Water Heater:
 - 1. Install water heater and all appurtenances in accordance with the local plumbing code.
 - 2. Route the drains from the relief valve, drip pan, and hot water tank drain to the nearest floor drain. Provide an air gap.
- E. Drains and Cleanouts:
 - 1. Install top flush with finished floor elevation.
 - 2. Install PVC p-traps at each floor drain.
 - 3. Provide cleanouts where shown and where required by code.

+ + END OF SECTION + +

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SECTION 15500

HEATING, VENTILATION AND AIR CONDITIONING EQUIPMENT

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Complete specifications, descriptive drawings, catalog cuts, and descriptive literature that include make, model, dimensions, weight of equipment, horsepower, and electrical schematics for products and control system components specified.
- B. Complete performance data that indicates full compliance with the Specifications.
- C. Recommended procedures for protection and handling of equipment and materials prior to installation.
- D. Manufacturer's standard finish color selection for cabinet finishes.
- E. Operation and maintenance manuals.
 - 1. List of recommended spare parts for equipment and materials specified.
 - 2. Manufacturer's Certificate of Conformance for the heat pumps.

1.2 QUALITY CONTROL

- A. Furnish 2-year warranty for all equipment.
- B. Furnish special warranty of 5 years for refrigeration section compressor(s).

PART 2 - PRODUCTS

2.1 HVAC EQUIPMENT

- A. See equipment schedule shown on the Drawings for evaporative cooler, air conditioning system, and exhaust fan.

2.2 FIXED LOUVERS

- A. The following described fixed louvers. Owner may prefer louvers with gravity or automatic dampers to close when not in use to minimize dust intrusion when HVAC systems not in use. Coordinate final louver design with Design-Assist Team.
- B. Furnish storm class fixed blade louvers where shown and with the dimensions and shapes shown on Drawings. Louvers shall be designed for intake and exhaust while providing maximum resistance to water penetration due to wind-driven rain.
- C. Fixed Louver Construction:
 - 1. Louver shall be constructed from extruded aluminum, alloy 6063-T5.
 - 2. Louver shall be 7 inches thick.
 - 3. Frame and blades shall be 0.081" thick.
 - 4. Louver shall be shaped and dimensioned as shown on the Drawings.

5. Install aluminum louver screen on interior side of the louver.
 6. Finish: Kynar 500 fluorocarbon coating, dark brown color, or equal.
- D. Fixed Louver Design:
1. Free Area: Minimum 45% net free area. Provide AMCA test data to show a 4'x 4' unit with a minimum of 7.3-square feet free area.
 2. Pressure Loss: AMCA certified rating of no greater than 0.30-inch WC at 750 fpm.
 3. Provide louver supports designed to carry 30 psf wind load.
 4. Louvers to be designed for air flow in either direction.
 5. Louvers to provide protection from water penetration due to wind-driven rain. Provide test results, per AMCA standard 500L, which show that the louver being provided has the following performance characteristics:
 - a. 99% effectiveness at preventing water penetration of 3 inches per hour of wind driven rain at a wind speed of 29.1 miles per hour directed to the face of the louver
- E. Manufacturers and Products:
1. Construction Specialties; Model RS-7315.
 2. Airolite; Model SCH7.
 3. Or equal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install equipment and systems in accordance with manufacturers' instructions.
- B. Evaporative Coolers:
1. Pipe drain pan connection as recommended by manufacturer.
 2. Locate units to provide access spaces required for filter changing; motor, drive, and bearing servicing; and fan shaft removal.
 3. Lubricate nonsealed bearings prior to startup.
 4. Seismic Restraints:
 - a. Use lateral and vertical motion limiters described in the latest edition of SMACNA "Guidelines For Seismic Restraints of Mechanical Systems."
 - b. Restraint Snubbers: Rubber-faced, securely anchored to the structure, and installed with sufficient clearance so that unit isolators are not restricted for proper free isolation, but do limit movement in all directions.
 - c. Restrain as described in the latest edition of ASHRAE "HVAC Applications," chapter on Seismic Restrain Design.

+ + END OF SECTION + +

SECTION 15501

DUCTWORK AND ACCESSORIES

PART 1 - GENERAL

1.1 SERVICE CONDITIONS

- A. All ductwork shall be aluminum.

1.2 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
1. Engage a single firm, with undivided responsibility for performance and other requirements and components of the ductwork.
 2. Engage a firm which can show successful experience in the fabrication and erection of ductwork systems of scope and type similar to the required Work.
- B. Installer Qualifications:
1. Engage a single installer regularly engaged in ductwork installation and with experience in the installation of the types of materials required; and who agrees to employ only tradesmen with specific skill and experience in this type of Work. Submit name and qualifications to ENGINEER
 2. Engage a single installer for the entire ductwork system with undivided responsibility for performance and other requirements.
- C. Requirements of Regulatory Agencies:
1. Building Codes: Comply with the:
 - a. Uniform Building Code, as supplemented by the authorities having jurisdiction.
 - b. Uniform Mechanical Code, as supplemented by the authorities having jurisdiction.
 2. Permits: CONTRACTOR shall obtain and pay for all required permits, fees and inspections by authorities having jurisdiction.
- D. Reference Standards: Comply with applicable provisions and recommendations of the latest editions of the following, except as otherwise shown or specified. Specific provisions of this Contract shall supersede the Standards in case of conflict:
1. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE).
 2. Sheet Metal and Air Conditioning Contractors National Association (SMACNA).
 - a. HVAC Duct Construction Standards.
 - b. Round Industrial Duct Construction Standards.
 - c. Rectangular Industrial Duct Construction Standards.
 - d. Fire Damper Guide for Air Handling Systems.
 3. American Conference of Governmental Industrial Hygienists
 4. ASTM A 774, As-Welded Wrought Austenitic Stainless-Steel Fittings for General Corrosive Service at Low and Moderate Temperatures.
 5. ASTM A 778, Welded, Unannealed Austenitic Stainless-Steel Tubular Products.
 6. NFPA 91, Blowers and Exhaust Systems for Dust, Stock and Vapor Removal or Conveying.

1.3 SHOP DRAWINGS

- A. Shop Drawings: Submit for approval the following:

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1. 1/4-inch scale duct layouts.
 2. Dimensions.
 3. Details of construction.
 4. Details of installation.
 5. Manufacturer's literature, illustrations, specifications and engineering data.
 6. Ceiling diffusers and registers. Provide schedule of air outlets indicating location and quantity.
 7. Fire Dampers:
 - a. Closing mechanisms.
 - b. Fusible link operating temperature.
 - c. Installation details.
 - d. Access Doors (UL Listed).
 8. Access doors.
 9. Flexible connections.
 10. Duct sealants.
 11. Deviations from Contract Documents.
- B. Test Reports: Submit the following test reports for approval.
1. UL Label, Fire Dampers.
 2. Damper leakage tests from an AMCA approved testing laboratory.

1.4 OPERATION AND MAINTENANCE MANUALS:

- A. Submit complete manuals including copies of all approved Shop Drawings, test reports, maintenance data and schedules, description of operation and spare parts information.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Store equipment and materials so as to keep free from moisture, damage, and deterioration.
- B. Manufacturer shall protect all flange faces and the more fragile appurtenances of the sub-assemblies, with padding between pieces in order to prevent one piece from impacting with another, and by crating or other means for shipment.
- C. Duct sub-assemblies shall be unloaded with care and stored in a location where they will be free from damage. Impact of a tool or other heavy object may result in a fracture of the inner lining and affect the service life of the duct or equipment.
- D. Large sub-assemblies shall be supported during unloading to prevent excessive deflection and overstressing.
- E. Ductwork shall be protected, by padding or bracing, from banding or ropes used in shipment. No chains are to be used to secure any ductwork during transportation.

1.6 GENERAL REQUIREMENTS

- A. The Drawings show general arrangement and extent of Work to be done, but the exact location and arrangement of all parts shall be determined as the Work progresses, to conform in the best possible manner with its surroundings. The exact location of all parts of the Work must be governed by the general building plans and the actual building conditions. Piping, equipment, ducts, etc. found to interfere with the construction of the building, plumbing apparatus and piping, electrical wiring or other obstructions, etc. shall

be located to clear such obstructions. Connections shown to the various units are intended as an indication only. The actual connections shall be made and to best suit each particular case, provide for expansion, circulation and minimize the amount of space required.

- B. Drawings do not show all offsets, fittings, accessories and details which may be required. CONTRACTOR shall field survey all conditions which may affect the installation of the Work, and shall arrange the Work accordingly. Provide all required items to complete the systems to the extent required by the Contract Documents.
- C. If ductwork can be run to better advantage, CONTRACTOR, before proceeding with the Work, shall prepare and submit complete drawings showing all details of the proposed rearrangement for written approval.

PART 2 - PRODUCTS

2.1 METALLIC RECTANGULAR DUCTWORK

- A. Type:
 - 1. Aluminum (Alloy 3003 - H-14).
 - a. All accessories and hardware shall be aluminum, unless otherwise noted.
 - b. All fasteners shall be Type 304L stainless steel, unless otherwise noted.
- B. Construction: Conform to the latest edition of SMACNA (Sheet Metal and Air Conditioning CONTRACTOR's National Association, Inc.) Standards.
 - 1. All sheet metal construction shall conform to a minimum pressure classification of 2-inches of water gauge (positive and negative pressure), unless otherwise shown or specified, and shall be in accordance with the construction details and installation details in the latest edition of the SMACNA HVAC Duct Construction Standards. This standard is hereinafter referred to as HVAC DS.
 - a. All ductwork served by ADM-LEF-1 and ADM-AHU-2 shall conform to a minimum pressure classification of negative and positive 4-inches of water gauge.
 - 2. Duct construction alternatives (duct gage in relation to reinforcement spacing) selected by the CONTRACTOR from HVAC DS tables shall be identified by duct system and shall be submitted in schedule form to the ENGINEER prior to beginning installation of ductwork. CONTRACTOR shall construct ductwork to meet the requirements of the HVAC DS tables in conjunction with the minimum thickness schedule below.
 - 3. Longitudinal seams shall be Pittsburgh type with permanently elasticmatic sealant applied continuously within the seam.
 - 4. Aluminum ductwork minimum thicknesses:

Duct Dimension (maximum side):	Thickness:
Under 12 inches	0.040 in. (No. 18 B&S Gage)
Between 12 and 30	0.050 in. (No. 16 B&S Gage)
Between 31 and 54	0.064 in. (No. 14 B&S Gage)
Between 55 and 84	0.071 in. (No. 13 B&S Gage)
Above 84	0.090 in. (No. 11 B&S Gage)
 - 5. Ductwork shall be connected by a mechanical joining system manufactured by Ductmate Industries, Inc., or equal except where otherwise noted. Manufacturers' installation instructions will be followed, except where otherwise noted.

- a. Rectangular Ductwork: SMACNA T-24 flange type connectors formed from the duct edge will NOT be allowed. All connectors shall meet or exceed the functional criteria outlined in SMACNA.
 - 1) Aluminum Ductwork Connectors:
 - a) Angle: .04-inch thick Type 3003H14 aluminum.
 - b) Corner: .10-inch thick Type 5052H34 aluminum.
 - c) Cleat: .07-inch thick PVC.
 - d) Gasket: Butyl.
 - 6. Stiffener angles shall be constructed of the same material as the duct or transverse connector.
 - 7. Turning Vanes, Splitter Dampers, Transitions, Offsets, Branch Take-offs and Elbows::
 - a. Reference: SMACNA.
 - b. Construction: Same material as ductwork.
 - c. Vanes: Double thickness.
 - d. Branch Take-offs: 45 degrees, NO straight taps unless specifically shown.
 - e. Elbows shall be the radius type with R'1.5, unless specifically shown otherwise.
 - f. Where space limitations prevent the use of a radius elbow provide a square throat elbow with turning vanes.
- C. Seal Class B.
- D. Leakage:
- 1. Not to exceed 5 percent.
- E. Flexible duct or duct constructed of fiberglass duct board shall not be permitted on the job, except where specifically shown on the Drawings.

2.2 METALLIC ROUND DUCTWORK

- A. Type:
 - 1. Aluminum (Alloy 3003 - H-14).
 - a. All accessories and hardware shall be aluminum, unless otherwise noted.
 - b. All fasteners shall be Type 304L stainless steel, unless otherwise noted.
- B. General: Conform to the latest edition of SMACNA (Sheet Metal and Air Conditioning Contractor's National Association, Inc.) Standards.
 - 1. All sheet metal construction shall conform to a minimum pressure classification of 2-inches of water gauge (positive and negative pressure), unless otherwise shown or specified, and shall be in accordance with the construction details and installation details in the latest edition of the SMACNA HVAC Duct Construction Standards. This standard is hereinafter referred to as HVAC DS.
 - a. All ductwork served by ADM-LEF-1 and ADM-AHU-2 shall conform to a minimum pressure classification of positive and negative 4-inches of water gauge.
 - 2. Duct construction alternatives (duct gage in relation to reinforcement spacing) selected by CONTRACTOR from HVAC DS tables shall be identified by duct system and shall be submitted in schedule form to the ENGINEER prior to beginning installation of ductwork. CONTRACTOR shall construct ductwork to meet the requirements of the HVAC DS tables in conjunction with the mini-mum thickness schedule below.
 - 3. Ductwork shall be manufactured by United McGill Corporation series UNI-SEAL or equal.
 - 4. Ductwork fittings shall be manufactured by United McGill Corporation series LOLOSS or equal.

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5. Round, single wall, spiral lock seam ductwork.
6. Aluminum Ductwork Minimum Thicknesses:

<u>Duct Diameter:</u>	<u>Minimum Thickness:</u>
Under 26 inches:	0.040 inches
27 thru 36 inches:	0.050 inches
37 thru 50 inches:	0.063 inches
7. Ductwork shall be provided in continuous unjoined lengths where ever possible, except when interrupted by fittings and dampers.
8. Fittings: Elbows shall be die-stamped with a bend radius of 1.5 times the elbow diameter. Converging flow fittings shall be constructed with a radiused entrance to all branch taps and with no excess material projecting from the body into the branch tap entrance. Conform to the following requirements:
 - a. All branch entrances shall be by means of factory fabricated fittings or factory fabricated duct tap assemblies.
9. Connections: Ductwork and fittings shall be connected using flanged joints in accordance with the manufacturers installation procedures and duct sealant recommendations.

C. Seal Class: B

D. Leakage: Not to exceed 5 percent.

2.3 METALLIC DUCT ACCESSORIES

A. Hangers:

1. All ductwork shall be supported from trapeze type hangers. Hanger rods shall be minimum 3/8-inch for all ducts with half perimeter up to 72-inches, and 1/2- inch diameter for all ducts with half perimeter larger than 72-inches. A pair of rods shall be provided at each duct support point. Maximum hanger spacing shall be 8 feet for ducts with half perimeter up to 72-inches and 6 feet for ducts with half perimeter larger than 72-inches.
2. Provide structural steel supports as required to mount hangers from building.
3. All hangers, rods, supports, bolts, nuts, washers, inserts, supports, and appurtenances located in corrosive areas shall be Type 316 stainless steel and those located in non-corrosive areas shall be galvanized steel.
4. Hanger Construction and installation shall conform to SMACNA Standards, except as specified. No sheet metal duct hangers or straps will be allowed.

B. Duct Liner:

1. 2-inch thick, 3-pound density. Minimum .70 NRC, minimum 0.24K at mean temperature of 75 degrees F. NFPA-90A approved black coating on one side.
2. U. L. Ratings:
 - a. Flame Spread Max: 25.
 - b. Fuel Contribution: 50.
 - c. Smoke Developed: 50.
3. Product and Manufacturer: Provide one of the following:
 - a. Mansville Microlite.
 - b. PPG Textrafine.
 - c. Or equal.

C. Supply Registers:

1. Rectangular aluminum construction.
2. Individually adjustable horizontal face and vertical rear louver fins.

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3. Gang-operated opposed-blade horizontal volume control damper.
4. Continuous sponge rubber gasket at face flange.
5. 1-inch flat aluminum frame.
6. Prime coat finish.
7. Manufacturers and Products:
 - a. Krueger; Model 5880H-OB.
 - b. Carnes; Type RNDH.
 - c. Or equal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All ductwork shall conform accurately to the dimensions shown, the ducts shall be straight and smooth inside with joints neatly finished. Ductwork shall be installed so as to preclude the possibility of vibration under all operating conditions.
- B. Tape and seal all joints in accordance with SMACNA Standards.
- C. Fire/Smoke dampers shall be provided and installed where indicated on the Drawings and where required by U.L. and authorities having jurisdiction and shall be approved by local building codes and in accordance with the requirements of the NFPA.
- D. Install all ductwork and accessories to provide a system free from buckling, warping, breathing or vibration.
- E. All ducts at expansion joints and flexible connections shall be suitably supported at each end within 12-inches of joint.
- F. Coordinate all air outlets for compatibility with ceiling system.
- G. Install ductliner in roof mounted supply, return and outside air ductwork stick clip duct liner to inside walls of ductwork.

3.2 ADJUSTMENT

- A. Set volume control devices for approximate positions in preparation for final testing and balancing.
- B. Start fan system and check for excessive leaks and vibration and correct.

3.3 CLEANING

- A. Remove all loose materials and obstructions from interior of ducts.
- B. Remove debris and waste materials resulting from installation.

+ + END OF SECTION + +

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SECTION 15600

TESTING, ADJUSTING AND BALANCING OF HVAC SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. Provide all labor, materials, equipment and incidentals as shown on the Drawings, specified and required to perform the testing, adjusting and balancing of HVAC systems.

1.2 QUALITY ASSURANCE

A. Balancer's Qualifications:

1. Submit biographical data on employee proposed to directly supervise the testing, adjusting and balancing Work.
2. Submit proof of certification by NEBB (National Environmental Balancing Bureau), AABC (Associated Air Balance Council), or SMACNA (Sheet Metal and Air Conditioning Contractors' National Association), proof of registration in the State of Arizona and a record of at least five years experience in the testing and balancing contracting industry, engaged in heating, ventilating and air conditioning (HVAC) Work.

1.3 SUBMITTALS

A. Data Forms:

1. Submit data forms on each item of testing equipment required. Include name of device, manufacturer's name, model number, latest date of calibration, and correction factors.
2. All field data pertaining to each item of equipment being tested must be tabulated and submitted on the standard forms of NEBB, AABC, or SMACNA.
3. Testing agency shall sign and date each form in the space provided and proof of certification shall accompany the final report.

B. Report Forms:

1. Submit example copies of report forms for ENGINEER'S approval.
2. Forms shall be 8-1/2 by 11-inch paper for loose-leaf binding, with blanks for listing of the required test ratings and for certification of report.
3. Reports shall be on the organizations approved forms imprinted with the company's name.
4. Certified report outlining procedure used to balance the system and the types of measuring devices used.

C. Test results shall be submitted on approved forms in a typed format.

D. Submit certified copies of required test reports to the ENGINEER for approval.

1.4 JOB CONDITIONS

- A. Heating, ventilating and air conditioning equipment shall be completely installed and in continuous operation as required to accomplish the testing, adjusting and balancing Work specified.
- B. Testing, adjusting and balancing shall be performed when outside conditions approximate design conditions indicated for heating and cooling functions.

1.5 OPERATING INSTRUCTIONS

- A. Reports shall be certified by CONTRACTOR verifying that the methods used and the results achieved are as specified.

1.6 CORRECTIVE ADJUSTMENTS

- A. Should corrective measures caused by faulty installation require retesting, adjusting and balancing, such Work shall be performed by CONTRACTOR, at no additional cost to the OWNER.
- B. Inspections:
 - 1. Fan Belt Deflection: No less than 1/4-inch or more than a 1/2-inch.
 - 2. Finned Coils: Fins shall be combed out with a fin comb for appropriate fin spacing. Helical fins shall be straightened with blunt bladed instrument.

PART 2 - PRODUCTS

2.1 BALANCING INSTRUMENTATION

- A. Provide all necessary instrumentation, tools, ladders, etc. to complete all air balancing, tests and adjustments.
- B. Instrumentation shall be in accordance with NEBB, AABC, or SMACNA requirements and shall be calibrated to the accuracy standards stipulated by these organizations.
- C. Flow-measuring hoods (manufactured, not fabricated) shall be acceptable for measurement of ceiling diffuser performance only.
- D. Assume full responsibility for safe keeping of all instrumentation during the course of the Work.

PART 3 - EXECUTION

3.1 GENERAL

- A. Testing, adjusting, and balancing of air systems shall be performed in compliance with the standard procedure manual published by the testing, adjusting, and balancing organization affiliated with CONTRACTOR. Submit one copy of the standard procedure manual to the ENGINEER for record purposes only.

- B. Sole responsibility for the protection and safeguarding of the Work and providing every protection against accidents, injury, and damage to persons and property belongs to CONTRACTOR.
- C. Keep dust, dirt, and debris to an absolute minimum and reinstall all removed ceiling components to their original positions at the end of each day.
- D. Full responsibility for removal and reinstallation of ceiling system and replacement of any component damaged belongs to CONTRACTOR.
- E. Install additional access panels, at no additional cost to the OWNER, as required to gain access to equipment concealed above ceilings, behind walls, or any other concealed space.
- F. Air systems shall be tested, adjusted, and balanced with clean filters.
- G. Provide final air balancing report to Maricopa Building Official prior to notifying Maricopa County for final inspection of mechanical work. (IMC, Section 107)

3.2 INSPECTION

- A. Pre-Startup Inspection:
 - 1. Verify proper equipment mounting and setting.
 - 2. Verify that control, interlock and power wiring is complete.
 - 3. Verify alignment of motors and drives.
 - 4. Verify proper piping connections and accessories.
 - 5. Verify that lubrication is completed.
- B. First Run Observations:
 - 1. Verify direction of rotation.
 - 2. Verify setting of safety controls.
 - 3. Monitor heat build up in bearings.
 - 4. Check motor loads against manufacturer's nameplate data.
- C. Equipment Check:
 - 1. Verify proper overload heater sizes.
 - 2. Verify function of safety and operating controls.
 - 3. Verify proper operation of equipment.
 - 4. Report on inspection, observation and checking procedures.

3.3 AIR SYSTEMS

- A. Preliminary:
 - 1. Identify and list size, type and manufacturer of all equipment to be tested, including air terminals.
- B. Central Systems:
 - 1. Test rpm for all equipment, including adjustment to each fan and air handling unit, and air conditioning unit to design requirements within the limits of mechanical equipment provided.
 - 2. Adjust or change drive sheaves as required to adjust actual cfm to scheduled cfm.

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3. Test and record motor voltages and running amperes, including motor manufacturer's nameplate data, and starter heater ratings for each unit as listed above.
 4. Make Pitot tube traverse of main supply, exhaust and return ducts, determine cfm at all fans and units and adjust fans and units to within five percent of design requirements.
 5. Test and record system suction and discharge static pressure.
 6. Test and adjust system for design outside air, cfm.
 7. Test and adjust system for design recirculated air, cfm.
 8. Test and record heating apparatus outdoor entering air temperatures, dry bulb.
 9. Test and record heating apparatus return air temperatures, dry bulb.
 10. Test and record heating apparatus mixed air temperatures, dry bulb.
 11. Test and record heating apparatus leaving air temperatures, dry bulb.
 12. Test and record cooling apparatus outdoor entering air temperatures, dry bulb and wet bulb.
 13. Test and record cooling apparatus return air temperatures, dry bulb and wet bulb.
 14. Test and record cooling apparatus mixed air temperatures, dry bulb and wet bulb.
 15. Test and record cooling apparatus leaving air temperatures, dry bulb and wet bulb.
 16. Record all fan and air handling unit speeds.
 17. Record air quantity delivered by each fan and air handling unit.
- C. Distribution:
1. Adjust volume dampers, control dampers, splitter dampers, air extractors, etc. to proper design cfm in main ducts, branch ducts, and zones.
- D. Air Terminals:
1. Identify each air terminal as to location and determine required flow reading.
 2. Test and adjust each air terminal to within tolerance of design requirements as listed below:
 - a. Diffusers and Supply Registers: 0 percent to +10 percent.
 - b. Return Registers: 0 percent to -10 percent.
 - c. Exhaust Registers: 0 percent to -10 percent.
 3. Test procedure on air terminals shall include recording comparison of required cfm and observed cfm, adjustment of terminal, and recording of final cfm.
 4. Adjust flow patterns from air terminal units to minimize drafts to extent design and equipment permits.
- E. Verification:
1. Prepare summation of readings of observed cfm for each system, compared with required cfm, and verify that duct losses are within specified allowable range.
 2. Verify design cfm at fans as described above.
 3. If the air systems are not properly balanced, rebalance and recheck all data in the presence of ENGINEER and as approved by the ENGINEER.

3.4 AUTOMATIC CONTROL SYSTEM

- A. In cooperation with the control manufacturer's representative, set and adjust automatically operated devices to achieve required sequence of operations.
- B. Verify all controls for proper calibration and operation and list those controls requiring adjustment by control system installer.

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3.5 MANUFACTURER'S SERVICES

- A. A factory trained representative shall be provided for installation supervision, start-up and test services and operation and maintenance personnel training services. The representative shall make a minimum of 2 visits, minimum 4 hours on-site for each visit, to the site. The first visit shall be for assistance in the installation of equipment. The second visit shall be for checking the completed installation and start-up of the system and instruction of Operations and Maintenance Personnel. Manufacturer's representative shall test operate the system in the presence of the ENGINEER and verify that the equipment and controls conform to requirements. Representative shall revisit the job site as often as necessary until all trouble is corrected and the installation is entirely satisfactory.
- B. All costs, including travel, lodging, meals and incidentals, shall be considered as included in CONTRACTOR'S bid price.

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SECTION 15990

TESTING OF PRESSURE PIPING SYSTEMS

PART 1 - SUBMITTALS

1.1 TESTING PLAN

- A. Testing Plan: Submit prior to testing and include at least the information that follows.
 - a. Testing dates.
 - b. Piping systems and section(s) to be tested.
 - c. Test type.
 - d. Method of isolation.
 - e. Calculation of maximum allowable leakage for piping section(s) to be tested.
2. Certifications of Calibration: Testing equipment.
3. Certified Test Report.

1.2 REFERENCE

- A. Reference Section 15100 PS for test pressure.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 NOTIFICATION

- A. Notify ENGINEER in writing 5 days in advance of testing. Perform testing in presence of ENGINEER.

3.2 PRESSURE TESTING

- A. General:
 1. Complete installation of piping system, including all thrust restraint, prior to pressure testing.
 - a. If thrust blocking is specified, wait 5 days minimum after concrete thrust blocking is installed to perform pressure tests. If high-early strength cement is used for thrust blocking, wait may be reduced to 2 days.
 2. Prior to test, remove and replace with pipe spools or suitably isolate appurtenant instruments or devices that could be damaged by pressure testing.
 3. New Piping Connected to Existing Piping: Isolate new piping with grooved-end pipe caps, spectacle blinds, blind flanges, or as acceptable to ENGINEER.
 4. Piping to be Pressure Tested and Test Pressure: as indicated on Piping Schedule.
- B. Testing with Water (non-HDPE2 pipe):
 1. Fluid: Clean, potable water.
 2. Pipeline Protection:
 - a. Maximum Filling Velocity: 0.25 foot per second, applied over full area of pipe.
 - b. Vent piping during filling. Open vents at high points of piping system or loosen flanges, using at least four bolts, or use equipment vents to purge air pockets.

3. Exposed Piping:
 - a. Perform testing on insulated piping prior to application of insulation
 - b. Maintain hydrostatic test pressure continuously for 60 minutes, minimum, and for such additional time as necessary to conduct examinations for leakage.
 - c. Examine joints and connections for leakage.
 - 1) Correct visible leakage and retest as specified.
 - 2) Empty pipe of water prior to final cleaning or disinfection.
4. Buried Piping:
 - a. Test after backfilling has been completed.
 - b. Expel air from piping system during filling.
 - c. Apply and maintain specified test pressure with hydraulic force pump. Valve off piping system when test pressure is reached.
 - d. Maintain hydrostatic test pressure continuously for 2 hours minimum, reopening isolation valve only as necessary to restore test pressure.
 - e. Determine actual leakage by measuring quantity of water necessary to maintain specified test pressure for duration of test.
 - f. Maximum Allowable Leakage:

$$L = \frac{SD(P)^{1/2}}{133,200}$$

where:

- L = Allowable leakage, in gallons per hour.
 S = Length of pipe tested, in feet.
 D = Nominal diameter of pipe, in inches.
 P = Test pressure during leakage test, in pounds per square inch.

- g. Correct leakage greater than allowable, and retest as specified.

C. Testing with Water (15100 PSDS HDPE2) per ASTM F2164:

1. Fluid: Clean, potable water.
2. Pipeline Protection:
 - a. Maximum Filling Velocity: 0.25 foot per second, applied over full area of pipe.
 - b. Vent piping during filling. Open vents at high points of piping system or loosen flanges, using at least four bolts, or use equipment vents to purge air pockets.
3. Allow the test section and test liquid to equalize to a common temperature.
4. Pressurizing (initial expansion phase):
 - a. Once test section is completely filled and void of all air pockets, gradually increase pressure in the test section to the specified test pressure.
 - b. Test section shall not exceed 1.5 x design pressure at systems lowest point.
 - c. Should test pressure not be obtainable, examine pipe for leaks, air pockets or other faults prior to continuing test.
 - d. Once test section has achieved stable test pressure, add make-up water as necessary to maintain test pressure for four (4) hours.
5. Test Phase
 - a. Reduce test pressure by 10 psi and monitor pressure for one (1) hour. Do not increase pressure or add make-up water.
 - b. If no visual leakage is observed and pressure during the test phase remains steady (within 5% of the test phase pressure) for the one (1) hour test period, a passing test is achieved.
6. Retesting
 - a. If retesting is necessary, depressurize the test section by releasing test liquid at a controlled rate. Sudden depressurization can cause water hammer.

- b. Do not attempt to correct faults or make repairs while test section is pressurized.
- c. Allow the test section to relax for a period of eight (8) hours before restarting the pressurization step of testing.

3.3 PIPE PRESSURE TESTING LOG

- A. All pressure tests shall be witnessed by ENGINEER. CONTRACTOR shall keep a pipe pressure testing log to document the pressure testing and ENGINEER's approval of such.
 - 1. Specific details of the contents and format pipe pressure testing log shall be determined by the CONTRACTOR and approved by the ENGINEER.
 - 2. At a minimum, pipe pressure testing log shall record, on a daily basis for any day when pipe pressure testing is performed:
 - a. Test Report Documentation:
 - 1) Test date.
 - 2) Description and identification of piping tested.
 - 3) Test fluid.
 - 4) Test pressure.
 - 5) Remarks, including:
 - a) Leaks (type, location).
 - b) Repair/replacement performed to remedy excessive leakage.
 - 3. Pipe pressure testing log shall be kept on-site. Pipe pressure testing log shall be signed on a daily basis, for any day when pipe pressure testing log work is performed, by the supervisor of the CONTRACTOR's field crew and by the ENGINEER.
 - 4. Any piping system which was pressure tested, but which was not recorded in the pipe pressure testing log shall be re-tested at the ENGINEER's discretion.

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SECTION 15995

DISINFECTION OF POTABLE WATER SYSTEMS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Informational Submittals:
 - 1. Plan describing and illustrating conformance to appropriate AWWA standards and this Specification.
 - 2. Procedure and plan for cleaning system.
 - 3. Procedures and plans for disinfection and testing.
 - 4. Proposed locations within system where Samples will be taken.
 - 5. Type of disinfecting solution and method of preparation.
 - 6. Certification that employees working with concentrated chlorine solutions or gas have received appropriate safety training.
 - 7. Method of disposal for highly chlorinated disinfecting water.
 - 8. Independent Testing Agency: Certification that testing agency is qualified to perform bacteriological testing in accordance with AWWA standards, agency requirements, and this Specification.
 - 9. Certified Bacteriological Test Results:
 - a. Facility tested is free from coliform bacteria contamination.
 - b. Forward results directly to ENGINEER.

1.2 QUALIFICATIONS

- A. Independent Testing Agency: Certified in the State of California with 10 years' experience in field of water sampling and testing. Agency shall use calibrated testing instruments and equipment, and documented standard procedures for performing specified testing.

PART 2 - PRODUCTS

2.1 WATER FOR DISINFECTION

- A. Clean, uncontaminated, and potable.
- B. CONTRACTOR shall make arrangements for water supply and convey water in disinfected pipelines or containers.

2.2 CONTRACTOR'S EQUIPMENT

- A. Furnish chemicals and equipment, such as pumps and hoses, to accomplish disinfection.
- B. Water used to fill pipeline may be supplied using a temporary connection to existing distribution system. Provide protection against cross-connections as required by AWWA C651.

PART 3 - EXECUTION

3.1 GENERAL

- A. Conform to AWWA C651 for pipes and pipelines, C652 for tanks and reservoirs, C653 for water treatment plants and filters, and C654 for wells, except as modified in these Specifications.
- B. Disinfect the following items installed or modified under this Project, intended to hold, transport, or otherwise contact potable water:
 - 1. Pumps.
 - 2. Tanks.
 - 3. Pipelines: Disinfect new pipelines that connect to existing pipelines up to point of connection.
- C. Disinfect surfaces of materials that will contact finished water, both during and following construction, using one of the methods described in AWWA C652 and C653. Disinfect prior to contact with finished water. Take care to avoid recontamination following disinfection.
- D. Prior to application of disinfectants, clean pump, tank, filters, and pipelines of loose and suspended material.
- E. Allow freshwater and disinfectant solution to flow into pipe or vessel at a measured rate so chlorine-water solution is at specified strength. Do not place concentrated liquid commercial disinfectant in pipeline or other facilities to be disinfected before it is filled with water.

3.2 PIPING

- A. Cleaning:
 - 1. Before disinfecting, clean all foreign matter from pipe in accordance with AWWA C651.
- B. If the continuous feed method or the slug method of disinfection, as described in AWWA C651 are used, flush pipelines with potable water until clear of suspended solids and color. Provide hoses, temporary pipes, ditches, and other conduits as needed to dispose of flushing water without damage to adjacent properties.
- C. Flush service connections and hydrants. Flush distribution lines prior to flushing hydrants and service connections. Operate valves during flushing process at least twice during each flush.
- D. Flush pipe through flushing branches and remove branches after flushing is completed.
- E. Disinfecting Procedure: In accordance with AWWA C651, unless herein modified.

3.3 PUMPS

- A. Disinfecting Solutions: Minimum free chlorine concentration of 100 ppm.
- B. Application:

1. Inject disinfecting solution into pump and associated piping and circulate for a minimum 3-hour period of time. At end of 3-hour period, solution shall have a strength of at least 50 ppm free chlorine.
2. Operate valves and pump appurtenances during disinfection to ensure that disinfecting solution is dispersed into all parts of pump and lines.
3. If disinfecting solution contained in pump has a residual free chlorine concentration less than 50 ppm after the 3-hour retention period, reclean pump, reapply disinfecting solution, and retest until a satisfactory test result is obtained.
4. After chlorination, flush water from pump until water through the unit is chemically and bacteriologically equal to permanent source of supply.

3.4 TANKS

- A. Potable Water Storage Tanks: Disinfection procedures are described in section 03314.
- B. Cleaning:
 1. Clean interior surfaces using water under pressure before sterilizing. Isolate tanks from system to prevent contaminating materials from entering the distribution system. Cleaning shall:
 - a. Remove all deposits of foreign nature.
 - b. Remove all biological growths.
 - c. Clean the slopes, walls, top, and bottom.
 - d. Avoid damage to the structure.
 - e. Avoid pollution or oil deposits by workers and equipment.
 2. Dispose of water used in cleaning in accordance with applicable regulations before adding disinfecting solution to tank.
- C. Disinfecting Procedure: In accordance with AWWA C652, unless herein modified. Parts of structures, such as ceilings or overflows that cannot be immersed, shall be spray or brush disinfected.

3.5 DISPOSAL OF HEAVILY CHLORINATED WATER

- A. Do not allow flow into a waterway without neutralizing disinfectant residual.
- B. See the appendix of AWWA C651, C652, C653, and C654 for acceptable neutralization methods.

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SECTION 16010
ELECTRICAL GENERAL

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. The following list of components and areas of work is a summary of the work required in the drawings and specifications. The list is not comprehensive of the total work required nor is it in any specific order. It is merely being provided as an aid to the bidder. Work not listed herein, but described in the plans or specifications, is also part of the overall scope of work.
1. Outdoor Utility Metering with Main Disconnect, Generator Breaker, and Transition Sections to accommodate rear entry Automatic Transfer Switch in NEMA 3R weatherwrap.
 2. Indoor Automatic Transfer Switch with Transition Section and Power Distribution Sections. Custom ATS rear entry compartment.
 3. VFD Motor Control Panels.
 4. Soft Starter Motor Control Panels.
 5. Generator with sound attenuating enclosure, load bank and remote fuel tank.
 6. SCADA View Node
 7. Site access control and security
 8. PLC Control panel(s).
 9. PLC and SCADA.
 - a. Configuration and programming of the PLC is by Application Programmer – a person or entity further defined in this section.
 - b. Configuration and programming of the SCADA System is by Owner.
 10. Communications system. Contractor to coordinate, configure, test, and place communications system(s) into operation.
 11. Instrumentation
 - a. Mounting supports or other accessories as detailed and as recommended by the instrument manufacturer for the application.

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- b. Contractor shall calibrate, configure and test all instrumentation and document results.
- 12. Coordination and timely installation of critical path equipment and services such that construction may be facilitated. The Electrical Contractor and System Integrator should not assume that submittals, manufacturing, installation, start-up will be based on their own schedule. The Electrical Contractor and System Integrator scope of work is part of a much larger project and will need to be coordinated. Expect that additional cost in time and labor will be required beyond normal optimistic projections.
- 13. Conduit – support systems, wire, and grounding system, for equipment interconnection, and operation.
- 14. All necessary process piping, shut off, sample and calibration valves, drains, pressure reducers and calibration equipment for connection of instrumentation.
- 15. Trenching, backfilling, compaction and resurfacing for all new underground conduit routes, concrete pads, and pull boxes.
- 16. Coordination and equipment for connection of power utility and telephone services per utility drawings and standards.
- 17. Site electrical devices, lights and receptacles.
- 18. Seismic Anchorage Design Calculations and conforming installation.
- 19. System startup, calibration, testing and documentation.
 - a. The Application Programmer (defined in Electrical Specifications [Electrical General].), Owner and/or Construction Manager will be actively engaged in Operational Testing and Commissioning. These efforts shall be combined efforts of the Application-Programmer/Construction-Manager/Engineer, Contractor and Owner.
 - b. The Contractor shall facilitate test as outlined herein such that hardware, software and application programming are tested completely and all applicable test documentation is completed.
 - c. The Contractor shall assume that a minimum of 80 hours will be required to assist in this task.
 - d. Sufficient time shall be allocated in the construction schedule for troubleshooting, testing, startup, and verification of application programming in front of associated construction milestones. For instance, if a pump station is required to be operational prior to a date certain, then the schedule shall allocate time for these activities. The time necessary depends on the system to be started and shall be coordinated with the Owner Representative or Application Programmer during

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construction scheduling early in the project.

- B. Electro-mechanical equipment to be installed in this project may be specified in other divisions but will interface to equipment provided under Electrical Specifications. Obtain submittals for those devices, review, coordinate and provide all interfacing equipment, software, communications, I/O, and testing to integrate the equipment to the extent possible and as intended.
- C. Install electrical and control portion of electro-mechanical equipment specified in other sections. Reference those specifications, pertinent details, and follow all manufacturer instructions to erect, install and commission equipment. Furnish all electrical equipment, interconnecting wire, and make connections to place equipment in operation.
- D. All electrical equipment and materials, and methods - including installation, calibration, and testing - shall conform to the applicable codes and standards listed in this and other Sections. All electrical materials and work shall conform to published standards of the National Electric Code (NEC) current issue, Institute of Electrical and Electronic Engineers (IEEE), and Underwriters Laboratories Inc (UL).

1.02 RELATED SPECIFICATIONS

- A. The following specification sections are part of the [Electrical Specifications].

Section	Description
16110	Conduit and Boxes
16120	Low Voltage Wire and Data Cable
16210	Engine Generator
16250	Automatic Transfer Switch
16430	Low Voltage Switchboard
16450	Grounding
16470	Panelboard and Power Transformer
16481	Variable Frequency Drive
16482	Solid State Soft Starter
16600	Factory and Field Testing
16905	Control Panels
16910	PLC Hardware
16931	Security System
16932	Access Control System
16933	Video Monitoring System
16940	Instrumentation

- B. Owner, Engineer, Construction Manager, Application Programmer, and City are used within Electrical Specifications and are interchangeable. They are all representatives of the Owner, in this case, the City of Roseville.

1.03 QUALIFICATIONS AND REQUIRED WORK SCOPE

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A. Electrical Contractor

1. Management and installation of the entire electrical and control system) required for this project shall be by an Electrical Contractor meeting qualifications as defined herein.
 - a. Contractor shall be capable of looking at electrical equipment submittals, prior to installation, comparing hookup requirements to the drawings, and noting any deficiencies.
2. Electrical Contractor shall select, furnish, and install all commodity electrical materials (conduit, wire, supports, fittings, ductbanks, etc) that are generally not "custom" or uniquely manufactured for this project. Custom electrical panels, controls, and instrumentation shall be furnished by Systems Integrator.
3. Shall be competent in and familiar with management and subcontracting of specialty electrical and instrumentation supply and engineering work as requires of a Systems Integrator as described herein.
4. Electrical Contractor must be competent in performance, supervision and coordination of work required and performed by equipment suppliers and Systems Integrator (Subcontractors).
5. The Electrical Contractor (EC) shall meet the following minimum qualifications:
 - a. Has a current C10 Electrical Contractor's License issued by the State of California Department of Consumer Affairs.
 - b. EC shall be regularly engaged in similar industrial power and controls electrical contracting for the Water and Wastewater Industry.
 - c. EC shall have successfully performed work of similar or greater complexity (as measured in contract value on industrial power and controls projects) on at least three (3) previous projects.
 - d. EC shall carry all insurances as defined and required by the special provisions and as required by law.
 - e. EC shall be competent in methods and materials execution and selection associated in the type of electrical and instrumentation work specified in this Division.
 - 1) EC shall be familiar with and understand codes and requirements from NFPA70, NFPA110, and all other governing national or local codes as required for work scope as described in the drawings and specifications.
 - 2) EC shall know and understand common terms and abbreviations used in this Industry. Not all terms and abbreviations will be defined in the drawings and specifications.

B. System Integrator

1. Systems Integrator shall be a supplier to the Electrical Contractor and

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must be competent in performance, supervision and coordination of work required in this contract.

2. This includes, but is not limited to, all work necessary to select, furnish, construct, supervise installation, configure, calibrate, test, and place into operation all transmitters, instruments, programmable controllers, control panels, motor controls, alarm equipment, communications, monitoring equipment, and accessories.
3. The System Integrator shall have on staff a Project Engineer with three years prior experience on similar sized projects. This Project Engineer shall coordinate the technical aspects of this project and prepare the submittals and drawings. The Project Engineer shall attend all coordination meetings when specifically requested by the Engineer.
4. The System Integrator (SI) shall meet the following minimum qualifications:
 - a. SI shall be regularly engaged providing electrical and control systems for the Municipal Water and Wastewater Industry.
 - b. SI shall have an Electrical Engineer on staff registered in the State of California as a Professional Engineer.
 - c. SI shall be capable of labeling all electrical panels as manufactured or customized by the System Integrator with appropriate UL label prior to factory testing or shipment to project site.
 - d. SI shall have successfully completed work of similar or greater complexity and on similar facilities on at least ten previous projects under the present company name.
 - e. SI shall be actively engaged in the following disciplines for the last 5 consecutive years.
 - 1) Design and manufacturing of custom Control Panels, Motor Controls Centers, and associated devices and equipment as specified in this division.
 - 2) Programming and commissioning of SCADA, PLC and Operator Interface hardware.
 - 3) Instrumentation - selection, purchase, calibration, start-up and commissioning.
 - 4) Testing, calibration, start-up, and commissioning of control systems as applied to the Water and Wastewater industry.
 - f. SI shall employ personnel on this project who have successfully completed ISA or equal training courses on general purpose instrumentation.
 - g. SI shall have a permanent, fully staffed and equipped service facility within 200 miles of the project site for a minimum of 1 year prior to bid date with personnel and equipment required to maintain, repair and calibrate the instrumentation system.

C. Application Programmer

1. The Applications Programmer will be a part of the construction management team. The Applications Programmer will be a

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subconsultant of the Owner.

2. The Application Programmer work is limited to programming and configuration, and associated startup and testing services of the PLC and SCADA system. All other work is by Contractor.

1.04 CONTRACT DOCUMENTS

- A. The resolution of conflicting information within the contract electrical documents shall put precedence on electrical drawings over that of electrical specifications.
- B. The Drawings and specifications are intended to be descriptive of the type of electrical system to be provided with sufficient detail to construct. Minor omission of detail shall not relieve a qualified contractor from the obligation to provide a complete operational system if it can be determined that the particular detail is usual and customary for similar systems.
- C. The following specifications may incorporate specific equipment or materials that do not have equal equipment listed. These items are standards because of their familiarity, serviceability, and/or spare parts inventory. However, equal alternate equipment or materials (noted in the submittal cover letter) will be considered for use on this project if submitted. The Engineer may reject said equipment for the purpose of adherence to standards.
- D. Contract drawings are diagrammatic and indicate general arrangement of systems and equipment, except when specifically dimensioned or detailed. Exact locations and layouts of electrical products shall be defined during submittal, assembly, or field fit during construction. Field measurements take precedence over dimensioned drawings. Drawing intent is to show initial size, capacity, approximate location, orientation, and general relationship of equipment in area shown but not exact detail or arrangement. The requirements or descriptions in the drawings shall take precedence in the event of conflict.
- E. The Contractor shall examine the architectural, mechanical, structural, and electrical and instrumentation submittals and equipment furnished under other specifications divisions in order to determine conduit routing, stub-up locations, and final terminations for all conduits and cables. Conduits shall be stubbed up as near as possible to equipment electrical terminals. The exact locations and routing of cables and conduits shall be governed by structural conditions, physical interferences, and the physical location of wire terminations on equipment. If the Contractor installs equipment conflicting with the architectural, mechanical, structural, instrumentation or electrical equipment provided under this and other specifications sections, the Contractor shall replace without additional cost.
- F. All equipment shall be installed and located so that it can be readily accessed for operation and maintenance. If accessibility appears to be compromised, the location of equipment or stub ups shall be modified to the extent possible.
- G. Where conduits are shown on the Drawings, or stated to be furnished but not explicitly shown, as part of the scope of work; the Contractor shall provide all

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fittings, boxes, wiring, etc. as required for completion of the raceway system in compliance with the NEC and the applicable specifications in this Section.

- H. No changes from the Drawings or specifications shall be made without written approval of the Engineer. Should there be a need to deviate from the Contract documents, submit written details and reasons for all changes to the Engineer for review.
- I. The Contractor shall maintain a neatly and accurately marked full size set of Contract Drawings recording the as built locations and layout of all electrical and instrumentation equipment, routing of raceways, junction and pull boxes, and other diagram or drawing changes. Drawings shall be kept current weekly, with all "change orders", submittal modifications, and construction changes shown. Drawings shall be subject to the inspection by the Engineer at all times, progress payments or portions thereof may be withheld if drawings are not accurate or current.
- J. When documents are changed, they shall be marked with erasable colored pencils using the following coloring scheme:

Additions - red
Deletions - green
Comments - blue
Dimensions - black
- K. Prior to acceptance of the work, the Contractor shall deliver to the Engineer one set of record full size drawings neatly marked accurately showing the information required above.

1.05 UTILITY COORDINATION AND FEES

- A. All fees and charges of the Power Utility, Roseville Electric Utility, for design and final connection will be paid by others.
- B. Coordinate all work with the Utility for the work shown on Contract Drawings.
 - 1. Unless already completed, apply for electric service within 10 working days from Notice to Proceed.
 - 2. Coordinate and meet with the Utility's Representative at the project site(s) within 30 days after award of contract.
 - 3. Discuss specific installation and comply with Utility requirements. Contact Engineer in the event that Utility requirements far exceed allowances in the plans and specifications. Provide an itemized list of deviations and potential costs or credits.
 - 4. Coordinate and obtain required inspections prior to backfill. Make corrections to installation as required.
 - 5. Coordinate connection and date of service with Utility. Utility back-charges due to mis-coordination or installation problems will be Contractor responsibility to pay and correct.

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- C. Furnish and install electric service in accordance with the serving Utility's requirements.
 - 1. The contract plans show the preliminary design for the Utility installation. Slight changes required by the Utility do not constitute extra work unless cost impacts in material and labor exceed \$5000. In that event, the agreed excess amount will be allowed as a contract change.
 - 2. The Contractor shall provide and install service entrance equipment, all material, conduits, wiring, pull ropes, pole risers, transformer pads, bollards, etc. as shown on Utility design drawings and standards for new power service. Utility standards are available upon request from the Utility or for download from the Utility's website.
- D. Following award of Contract, schedule all service installations and connections with utilities. Construction or start-up delays as a consequence to lack of documented effort by the Contractor which delay the project completion due to lack of Utility services will not be considered valid and Contract liquidated damages may be assessed.

1.06 PROJECT COORDINATION

- A. Prior to submittal, the Electrical Contractor shall coordinate with equipment suppliers to verify sizes, mounting, connections, storage, and delivery of equipment. If there are any issues whereby the solution will be in conflict with plans and specifications, or that are undefined and need direction, they shall be brought to the attention of the Engineer or Construction Manager via the RFI process.

1.07 SUPERVISION

- A. The Contractor shall schedule all activities, manage all technical aspects of the project, coordinate submittals and drawings, and attend all project meetings associated with this Section. The Contractor shall coordinate and confirm that the project schedule is being adhered to and all work is being completed within the scheduled time frames.
- B. The Contractor shall supervise all work in this Section, including the electrical system general construction work, from the beginning to completion and final acceptance.
- C. The Contractor shall coordinate, obtain, prepare, and/or complete the documentation required within this division. All documentation shall be complete and delivered prior to final acceptance.

1.08 INSPECTIONS

- A. General
 - 1. Contract work or materials shall be subject to inspection at any time by the Engineer. If equipment, material, or installation method does not conform to the Contract documents, or does not have a favorably

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reviewed submittal status and has been determined to be unsatisfactory by the Engineer, then the Contractor shall remove said material from the premises; and if said material has been installed, the entire expense of removing and replacing same, including any cutting and patching that may be necessary, shall be borne by the Contractor.

2. The Engineer may inspect and test the fabricated equipment at the factory before shipment to job site. See Electrical Specifications [Factory and Field Testing] for requirements.
3. Work shall not be closed in or covered over before inspection and approval by the Engineer. All costs associated with uncovering and making repairs where non-inspected work has been performed shall be borne by the Contractor.
4. The Contractor shall cooperate with the Engineer and provide assistance at all times for the inspection of the electrical system under this Contract. The Contractor shall remove covers, provide access, operate equipment, and perform other reasonable work which, in the opinion of the Engineer, will be necessary to determine the quality of the work.

B. Milestones requiring inspection and signoff.

1. Underground conduit and grounding system complete. Do not cover any portion of conduit prior to inspection. Conduits must be labeled with temporary tags per Electrical Specifications [Conduit and Boxes] and [Grounding].
2. Factory testing. Coordinate test date with Engineer 2 weeks prior to test scheduled date.
3. Installation of electrical equipment. Equipment is anchored in place, conduit connections are complete, no wire is yet pulled into conduit. Permanent conduit tags must be in place per Electrical Specifications [Conduit and Boxes] and [Grounding].
4. Wire termination complete. Do not energize equipment. All wire tags must be installed and wires terminated per Electrical Specifications [Low Voltage Wire and Data Cable]. Pre-energization testing to commence after inspection.
5. Testing per Electrical Specifications [Factory and Field Testing]. All testing per Electrical Specifications [Factory and Field Testing] shall be witnessed unless specifically declined by the Engineer. Schedule tests with Engineer 2 weeks prior to test date.
6. Start-up per Electrical Specifications [Factory and Field Testing]. Schedule tests with Engineer 2 weeks prior to test date.
7. Punch list – final inspection. Schedule final walkthrough with Engineer one week prior to intended project completion date. All items on punchlist must be complete prior to scheduling walk-through.

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1.09 JOB CONDITIONS

A. Construction Power and Telephone Service

1. The Contractor shall coordinate, furnish and install, temporary utility services required during construction of the project, such as temporary electrical power and telephone service. Temporary services shall be installed in accordance with the applicable codes and regulations of the serving utilities.
2. Upon completion of the project, remove temporary services. All equipment and material shall be the property of the Contractor.

B. Equipment Storage

1. The Contractor shall provide adequate protection for all equipment and materials during shipment, storage and construction.
2. Equipment and materials shall be completely and sufficiently sealed and covered and set on a pallet above grade so that they are protected from weather, wind, dust, water, or construction operations.
3. Equipment shall not be stored outdoors. Where equipment is stored or installed in an area with susceptibility to moisture, such as unheated buildings, untested piping, etc., provide an acceptable means to prevent moisture damage, such as plastic cover and a uniformly distributed heat source to prevent condensation.

- C. The project site is located where outside temperatures vary between 10 deg F. to 110 deg F. Humidity in this area will range from 10% to 100%.

1.10 AREA CLASSIFICATIONS

- A. Area classifications are shown on the site electrical plans. The area enclosed by walls or the entire drawing area shall be classified as shown unless otherwise described in notes.
- B. All electrical equipment, enclosures, conduit, and supports shall be formally rated for or, at minimum, meet the intent of the rating as interpreted by Engineer.
- C. If no area classification rating is shown on the drawings, classification shall default to a NEMA 12 rating for indoors, and NEMA 4 rating for outdoors (non corrosive) and NEMA 4X for corrosive areas both indoors and outdoors.

1.11 SUBMITTAL REQUIREMENTS

A. General

1. Requirements described herein are specific to electrical submittals and are secondary to those described in other general specifications sections. Any additional requirements described here that are beyond those described in those sections shall be provided as described.

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Conflicts shall be resolved by giving priority to general specifications.

2. The Contractor shall ensure that the System Integrator and/or equipment suppliers provide the submittal documentation required in this section. Submittals shall be neat, orderly, complete (without unneeded parsing), and indexed.
 - a. Like equipment shall be submitted complete in a single submittal. For instance, all general electrical materials shall be in a single submittal. All instrumentation, all control panels, or all MCCs and so on shall be submitted complete where possible.
 - b. Submittals that are broken down without sufficient cause will be rejected for future inclusion into a combined submittal.
 - c. Do not separate submittals by area.
 - d. Do not separate submittals by specification division unless agreed to in advance.
 - e. Submittals for work scope covered in this contract are expected to be as follows. This list is intended to be a guideline and not to be specific of all submittals required. Project circumstances or leadtimes or availability will each impact the order and division of submittals.
 - 1) General electrical materials – conduit, wire, labels, etc.
 - 2) Lighting
 - 3) Power Distribution and Motor Controls
 - 4) PLC and Control Panels
 - 5) Engine Generator
 - 6) Seismic Calculations
 - 7) Instrumentation
 - 8) Security System
 - 9) Video Surveillance system
 - 10) Factory and Field Testing forms and procedures
 - 11) Interconnection Diagrams
 - 12) Installation details or procedures
 - 13) O&M Manuals
3. The Contractor shall coordinate submittals with the work so that project will not be delayed. This coordination shall include scheduling the different categories of submittals, so that one will not be delayed for lack of coordination with another. Time extensions will not be allowed due to failure to properly schedule submittals.
4. No material or equipment shall be delivered to the job site until the submittal for such items has been reviewed by the Engineer and marked "no exceptions noted" or "make corrections noted".
5. The equipment specifications have been prepared on the basis of the equipment first named in the Specifications. The Contractor shall note that the second named equipment, if given, is considered acceptable and equal equipment, but in some cases additional design, options, or modifications may be required to meet Specifications or functional

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installation.

6. Exceptions to the Specifications or Drawings or equipment or procedures submitted as "equal" to specified equipment shall be clearly identified in a letter at the front of the submittal. Submittal data for "equal" equipment or procedures shall contain sufficient details so a proper evaluation may be made by the Engineer. The Contractor is responsible for verifying proper application/operation of substituted equipment.
 7. The opinion of the Engineer will be the final determination whether a substitution request meets the design intent.
 8. Deviations from the Contract documents shall **not** be incorporated into the work without prior written approval of the Engineer. A "Change Order" directive from the Engineer is required prior to incorporating any deviation from the Contract documents that has costs associated. The cost differential associated with this change order must be negotiated with the Engineer to amend the Contract to reflect the costs or savings.
- B. Electrical Equipment -- Submittal data shall be grouped by equipment type. Each submittal shall be as complete as possible covering the entire project and scope of supply. Drawings or equipment submitted individually that are not on the critical path will not be accepted for individual review. The electrical submittals shall include (as a minimum):
1. Table of Contents
 2. Comment Letter: The Project Engineer of the System Integrator shall note all deviations from Contract Documents and the reason(s) for the deviation. They may use this forum to inform the Engineer or installing Contractor of important information related to the project. RFIs must be submitted separately. Re-submittals shall include written responses to every comment provided by the engineer during the previous review.
 3. Bill of Materials: The Contractor and System Integrator each shall provide Bill of Material for electrical components formatted as shown below. Generic names or part numbers as defined by a distributor or Integrator are not acceptable. Only the originating manufacturer's name and part number shall be listed. Provide separate bill of materials for each panel, MCC, instrument list, etc.

Bill of Material

Item #	Qty	Tag#	Description	Manufacturer	Part #

4. Shop Drawings:
 - a. Equipment elevations with enclosure details drawn to scale or dimensioned with relative scale.

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- b. Electrical One-line, Elementary, and wiring diagrams
 - c. PLC I/O wiring diagrams
 - d. Interconnection diagrams
5. Catalog Data shall include the following: (features and options shall be highlighted, circled, or "arrowed.")
- a. Instrumentation data summary sheets (by Contractor)
 - b. Manufacturer's technical information brochure
 - c. Physical size and mounting details and illustrations
 - d. Calibration Range
 - e. Input/output signals
 - f. Electric power, air, and/or water supply requirements.
 - g. Options selected and available (Cross out items not included)
 - h. Materials of construction of components
- C. Shop Drawings - Shop drawings shall be furnished for each electrical panel even if one was not shown explicitly on the Drawings. Shop drawings shall be numbered in sequence. Blank drawings or drawings that contain no specific project data will not be accepted for review.

All drawings shall be generated with a computer utilizing AutoCAD or similar drafting program. Drawings shall be no smaller than 11" x 17". The lettering shall be legible and no smaller than 0.75 inch in height.

Drawings shall be custom prepared for this project and shall have borders and a title block identifying the project, manufacturer, system or location, drawing number, drawing title, AutoCAD file name, project engineer, date, revisions, and type of drawing. Diagrams shall carry a uniform and coordinated set of wire colors, wire numbers, and terminal block numbers. The shop drawings shall include the following as a minimum:

- 1. Electrical one-line diagrams detailing all devices associated with the power distribution system. The following applicable information or data shall be shown on the one- or three- line diagram: location, size and amperage rating of bus; size and amperage rating of wire or cable; breaker ratings, number of poles, and frame sizes; power fail and other protective devices; fuse size and type.
- 2. Detailed analog and digital I/O diagrams showing the wiring requirements for each instrument or device connection. Reference the Drawings for an example of each I/O card drawing requirements. If one is not included in the Drawings, then one may be obtained from the Engineer upon request.
- 3. Elementary (wiring) diagrams shall be provided for all relay logic, programmable logic controls, motor controls, power supplies, and other wiring. All elementary (wiring) diagrams shall be drawn in JIC EMP/EGP format and standards showing ladder rung numbers and coil and contact cross referencing numbers.
- 4. Equipment exterior and interior scaled drawings of front, side, elevation, deadfront, front panel devices, and backpan components. Show fabrication methods and details; including material of

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construction, paint color, door latch and lock, and ventilation system. Show shipping split locations and offloading information. Submit base plan showing allowed conduit entrance areas and bolt hole locations.

5. Drawings shall show UL required information as needed to UL label the equipment in accordance with UL procedures for label applied.
 6. Submit full size drawing of all nameplates and tags, as specified herein, to be used on project. Submittal to include the following:
 - a. Dimensions of nameplate.
 - b. Exact lettering and font for each nameplate.
 - c. Color of nameplate.
 - d. Color of lettering.
 - e. Materials of construction.
 - f. Method and materials for attachment.
 - g. Drawing showing location of nameplates on each, panel and enclosure.
- D. Interconnection Diagrams - Interconnection diagrams shall be furnished for each electrical and instrumentation system, even if one was not shown explicitly on the Drawings. Reference the Drawings for an example of interconnection drawing requirements. If one is not included in the Drawings, then one may be obtained from the Engineer upon request. Each interconnection diagram shall include the following as a minimum:
1. The diagrams shall show connection point descriptions and field routing only. This includes, but is not limited to, terminal blocks, field wiring with numbers, junction boxes, conduit material with sizes, and conduit numbers.
 2. Each conduit in the Conduit and Wire Schedule shall be shown on at least one interconnection diagram. Multiple conduits may be shown on a single interconnect and a conduit may appear on multiple interconnects.
 3. Interconnect diagrams shall be based on connected equipment, ie. Interconnection diagram for Pump 1. All components connected to the MCC cubicle for Pump 1 shall be shown on a single interconnect.
 4. All terminations points on the diagram shall be shown with the actual equipment identification terminal number or letter.
 5. Interconnections between equipment shall be shown terminal to terminal with conduit lines in between. Wires within the same conduit shall be bundled and shown as a single line and labeled with the conduit name and wire fill. If not all wires within a conduit are used on a particular interconnection diagram, then the fill shall be noted as XX of XXX wires.
 6. Conduit shall be shown as routed through junction boxes and pull boxes. Wire fill leading into a pull box shall be equal to the combined outgoing conduit wire fill.

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7. Each wire and color code shall be shown connected to a terminal block. Spare wires may be shown as a list of wire numbers located near the end point of the wire.
8. Schematic symbols shall be used for field devices showing electrical contacts. Circuit polarities shall be shown where applicable.
9. The diagrams shall show all other Contract and shop drawing numbers, for reference, that are associated with each device that is interconnected. Attached with each interconnect, a copy of all the support documents used in preparing interconnects. This includes current issues of panel schematics, connection diagrams, terminal block diagrams, submittals, contract drawings, vendor drawings and all other data used to develop the interconnection diagram as noted in the "Reference Documents" corner of interconnect drawings.
10. Provide a notes section on each interconnect drawing. In the note section list any variances from the Contract conduit schedule necessary for completing the interconnections. Change orders regarding wire fill, conduit schedule and errors in plans regarding conduits and wires may not be processed until interconnect drawings have been received for such work.
11. The interconnection drawings shall be As-Built by the Contractor after start-up and prior to project completion. All deletions and additions of equipment, wire and cables shall be clearly shown. Interconnects shall include list of all applicable field instructions and change orders.
12. The diagrams shall be utilized by the electrician during all phases installation and connection of all conductors to ensure coordination of equipment interconnect.
13. Field wiring shall not start before the interconnection drawing have been submitted by the Contractor and approved by the Engineer.
14. The Contractor shall not pull in any wires into conduits that do not have approved interconnects. If the Contractor pulls and/or terminates wire without approved interconnect drawings, the Contractor will not be reimbursed for labor for re-pulling/replacing wires even if there was an error in wire fill or sizing in the "Wire and Conduit Schedule". If the Contractor pulls and/or terminates wire without approved associated interconnect drawings, then all progress payments for that particular area of work will be withheld until approved interconnect drawings are in use.

E. Seismic Anchor Design Calculations

1. All switchgear, motor controls centers, transformers, cabinets, raceways, supports, and electrical materials shall be so installed as to remain in a secure and captive position when subjected to a horizontal force in accordance with the current, applicable, and more stringent of California Building Code (CBC) or International Building Code (IBC) requirements. Method of securing shall constrain equipment against

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both vertical and horizontal forces and overturning forces.

2. Calculations as prepared by a structural engineer registered in the State of California shall be submitted in accordance with code requirements for earthquakes forces on all specified equipment. Calculations shall include wind loading forces for equipment installed outdoors.

1.12 OPERATING AND MAINTENANCE INFORMATION

A. Operations and Maintenance Manuals

1. Provide Operation and Maintenance manuals per specifications as described in "Submittal Requirements" in this section with the following additional requirements:
 - a. A comprehensive index.
 - b. A complete "Record" set of favorably reviewed electrical submittals as provided under subsection "Submittal Requirements" illustrating all components, piping, and electrical connections.
 - c. A complete list of the equipment supplied, including serial numbers, ranges, catalog cuts, and pertinent data.
 - d. Full specifications on each item.
 - e. Detailed service, maintenance and operation instructions for each item supplied. Schematic diagrams of all electronic devices shall be included. A complete parts list with stock numbers shall be provided for the components that make up the assembly. All of these shall be originals, no copies.
 - f. Special maintenance requirements particular to this system shall be clearly defined, along with special calibration and test procedures.
2. Submit electronic readable PDF file format (CD disk copies (2) or email with attachments or download links) of the proposed O&M manuals for review by the Engineer. Submittals shall be delivered timely to the Engineer to allow for review period, corrections, and re-submissions as necessary.
 - a. General Contractor supervision must not be circumvented by sending submittals direct to Engineer.
 - b. O&M Submittals shall be published 1st electronically and 2nd on hard copy paper stock.
 - c. Electronic Submittals shall be transmitted with the hard copy submittals and be viewable using a PDF reader.
 - d. Electronic submittals shall be assembled in accordance with the specifications for hard copy submittals with table of contents, bookmarks, tabs, subtabs, etc. utilizing the electronic

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bookmarks feature available in the PDF assembler.

- e. Electronic (PDF) submittals must follow all applicable requirements for hard copy submittals including indexing, item selection indication, bookmarks, etc.
- 3. Provide four (4) hard copy O&M manuals per specifications as described in SUBMITTALS REQUIREMENTS in this section.
 - a. Deliver approved hard-copy O&M manuals to the project site and Owner prior to pre-operational testing or equipment start-up.
- B. At the end of the project hard copy and soft copy electronic PDF files, shall be updated to "as-built" conditions.
- C. Provide two (2) sets of compact disk (CD) containing all shop drawings, application programs, configurations, calculations, documents or other computer electronic files prepared for this project in native file format and updated to reflect as-built conditions.

PART 2: PRODUCTS

2.01 QUALITY

- A. All equipment and materials shall be new, in current production, and the products of reputable suppliers having adequate experience in the manufacture of these particular items. For uniformity, only one manufacturer will be accepted for each type of product.
- B. Products specified that have become obsolete (out of current manufacturing, or have been superseded by another product) shall be cross-referenced to a replacement product(s) and provided in lieu of the specified product(s) for no additional cost. Under no conditions, shall products be submitted or furnished that are known (on manufacturer's list of obsolescence) and expected to be removed from current production within 12 months after project submittal. Products found to have been furnished this way will be removed and replaced at Contractor's expense.
- C. All equipment shall be designed for the service intended and shall be of rugged construction, of ample strength for all stresses which may occur during fabrication, transportation, erection, and continuous or intermittent operation. All equipment shall be adequately braced and anchored and shall be installed in a neat and workmanlike manner. Appearance and safety, as well as utility, shall be given consideration in the design of details. All components and devices installed shall be standard items of industrial grade, unless otherwise noted, and shall be of sturdy and durable construction suitable for long, trouble free service. Light duty, fragile and competitive grade devices of questionable durability shall not be used.
- D. The Contractor should expect that there will be occasional freezing conditions at the project site in outdoor locations. Instrument valves, tubing, instrumentation, and other components, etc. which are outdoors and

susceptible to damage if frozen, must be provided with internal or external protection. Freeze protection can consist of internal or external active heaters with thermostats and/or passive insulation systems. Active systems can be powered from a nearby receptacle or via the conduit intended for the device.

- E. Products that are specified and include a manufacturer, trade name or catalog number are intended to establish a standard of quality, performance, warranty and service. Products that are specified "or equal," do not prohibit the use of equal products of other manufacturers provided they are submitted, identified and promoted as equal, and favorably reviewed by the Engineer prior to procurement and installation.
- F. Products submitted as "equal" to the named products will be reviewed for conformance with the specifications and in comparison with the first named product. If the equal product meets specifications, but does not have a feature or performance characteristic that is available with the first named product, and that feature or performance is required for this project, then the submitted equal product may be rejected on those grounds.
- G. In the event that some claims of the manufacturer of submitted "equal" product are called into question by the Engineer, the Contractor, may be required to prove those claims either prior to installation or during startup of product. If the product does not meet the claims made or specifications, the product may be rejected by the Engineer and a replacement product must be submitted by the Contractor in its place. All cost for the rejected product, installation, testing, and removal will be the responsibility of the Contractor.
- H. Underwriters Laboratories (UL) listing is required for all substituted equipment when such a listing is available for the first named equipment. Extra parts, labor, panel space, power supplies, GFIC devices shall be provided as necessary for incorporation of specified non-UL components.
- I. When required herein or requested by the Engineer, the Contractor shall submit equipment or material samples for test or evaluation. The samples shall be furnished with information as to their source and prepared in such quantities and sizes as may be required for proper examination and tests, with all freight and charges prepaid. All samples shall be submitted before shipment of the equipment or material to the job site and in ample time to permit the making of proper tests, analyses, examinations, rejections, and resubmissions before incorporated into the work.

2.02 NAMEPLATES & TAGS

- A. Equipment exterior nameplates - Nameplate material shall be rigid laminated black plastic with beveled edges and white lettering; except for caution, warning, and danger nameplates the color shall be red with white lettering. The size of the nameplate shall be as shown on the drawings. No letters are allowed smaller than 3/16". All nameplates located outdoors shall be UV resistant. Securely fasten nameplates in place using two stainless steel screws type, 316L, if the nameplate is not an integral part of the device. Epoxy cement or glued on nameplates will not be acceptable. Engrave the nameplates with the inscriptions as approved by the Engineer in the

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submittal.

1. For each major piece of electrical equipment provide a manufacturer's nameplate showing the Contract specified name and number designation, and pertinent ratings such as voltage, # of phases, ratings, etc.
 2. For each device with a specific identity (pushbutton, indicator, instrument, etc.) mounted on the exterior or deadfront of a piece of equipment provide a nameplate with the inscription as shown on the Drawings and described herein.
 3. Where no inscription is indicated on the Drawings or described herein, furnish nameplates with an appropriate inscription providing the name and number of device.
 4. Install Safety Signs in accordance with the latest OSHA requirements.
 - a. Entrances to electrical rooms and stations: Danger Sign requirements, ELECTRICAL ROOM, HIGH VOLTAGE (define voltage, example 480 VAC) KEEP OUT, AUTHORIZED PERSONNEL ONLY.
 - b. Equipment enclosures, cable tray and wireway where 120 VAC or higher and 50 V DC and higher exist: Danger Sign requirements, HIGH VOLTAGE (define voltage, example 480 VAC) AUTHORIZED PERSONNEL ONLY.
 - c. Equipment such as motor control centers, control panels, etc., where more than one source may be present in an enclosure or cubicle: Danger Sign requirements, VOLTAGE (define voltage, example 120 VAC control voltage or 480 VAC power) FROM MULTIPLE SOURCES IN THIS ENCLOSURE.
 - d. Equipment such as switchboards, switchgear, panelboards and motor control centers: Warning Sign requirements, WARNING, SERVICE ENTRANCE DISCONNECT FOR 1 OF ____ (define quantity) SERVICES TO THIS BUILDING. OTHER SERVICE ENTRANCE DISCONNECTS ARE LOCATED AT (define locations).
 5. Caution, warning and danger nameplates shall be red with white lettering
- B. Equipment Interior Nameplates - Nameplate material shall be clear plastic with black machine printed lettering as produced by a KROY or similar machine; except caution, warning, and danger nameplates shall have red lettering. The size of the nameplate tape shall be no smaller than 1/2" in height with 3/8" lettering unless otherwise approved by the Engineer. Securely fasten nameplates in place on a clean surface using the adhesion of the tape. For each device with a specific identity (relay, module, power supply, fuse, terminal block, etc.) mounted in the interior of a piece of equipment provide a nameplate with the inscription as shown on the Drawings and described herein. Where no inscription is indicated on the

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Drawings or described herein, furnish nameplates with an appropriate inscription providing the name and number of device used on the submittal drawings. Stamp the nameplates with the inscriptions as approved by the Engineer in the submittal.

- C. Equipment Tags - When there is no space or it is impractical to attach an engraved plastic nameplate with screws, as is the case with most field devices and instruments, the Contractor shall attach a tag to the equipment with the same inscriptions as specified above in paragraph A. The tag shall be made from stainless steel material and the size of the nameplate shall be no smaller than 3/8"h x 2"w with 3/16" machine printed or engraved lettering unless otherwise approved by the Engineer. The tag shall be attached to the equipment with stainless steel wire of the type normally used for this purpose.

2.03 FASTENERS

- A. Fasteners for securing equipment to walls, floors, or ceilings, shall be stainless steel. The minimum size fastener shall be 3/8 inch diameter.

2.04 COMPONENTS

A. Switches and Pushbuttons

1. Switches (HS) and pushbuttons (HC) for general purpose applications shall be water and oil tight as defined by NEMA 4X, corrosion resistant as defined by NEMA ICS 6-110.58, U.L. listed, standard 30 mm diameter, with plastic holding nut.
2. Switches and pushbuttons shall have contacts rated NEMA A600 or 10 amperes continuous and 600 VAC. Provide NO and NC contacts as required.
3. Engraved black legend plates shall be provided to define each switch and pushbutton function.
4. Selector switch handles and pushbutton caps shall be black unless otherwise noted on drawing. Emergency Stop caps shall be red.
5. Selector switches for hand-off-auto (HOA) applications shall have the hand position to the left, off in center, and auto in the right position.
6. Pushbuttons and selector switches in hazardous locations shall have hermetically sealed contacts or explosion proof enclosures.
7. Lockout stop pushbuttons shall include padlocking attachment. Pushbutton type shall be coordinated with padlock attachment type.
8. Switches and pushbuttons shall be Allen-Bradley 800H, or equal.

B. Indicating Lights

1. Indicating Lights for general purpose applications shall be NEMA 4X,

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corrosion resistant as defined by NEMA ICS 6-110.58, U.L. listed, 30 mm diameter, with plastic lens, plastic holding nut, and miniature bayonet lamp base.

2. Lamp shall be full voltage 120 VAC with 28 chip (min) High Intensity LED.
3. Indicating lights shall have contacts rated NEMA A600 or 10 amperes continuous and 600 VAC. Provide NO and NC contacts as required.
4. Engraved black legend plates shall be provided to define each lights function.
5. Indicating light type and color of lens shall as follows or as otherwise shown on the Drawings:
 - a. Open/On Red
 - b. Closed/Off Green
 - c. Alarm Amber or Blue
 - d. Power On White
6. Indicating lights designated "PTT" on wiring diagram or shown with push-to-test wiring shall be provided with a push-to-test switch and wiring.
7. Indication lights shall be Allen-Bradley 800H, or equal.

C. Relays and Timers

1. General: Relays and timers shall be provided with N.O. or N.C. contacts as shown on the Drawings. All spare contacts shown shall be provided. Contacts shall be rated 10 amps minimum at 120 VAC, 60 Hz unless otherwise shown on the Drawings. Coil voltage shall be 120 VAC unless otherwise described or shown on the Drawings. Relays and timers shall be designed for continuous duty. All relays shall be U.L. listed. All relays and sockets shall be the product of a single manufacturer. The following is a summary of abbreviations associated with relays and timers:

CR	- Control relay
TR	- Timing relay
TDOE	- Time delay on energization
TDOD	- Time delay on de-energization
PR	- Power Relay

2. Sockets for plug-in relays and timers shall be standard industrial type din rail mount with barrier type pressure plate screw terminals. Sockets shall be rated 300 VAC, 10 amps minimum.
 - a. Blade 8 or 11 pin for coil voltage above 90 volts AC or DC.
 - b. Octal 8 or 11 pin for coil voltage below 90 volts AC or DC.

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3. Control relays (CR) shall be plug-in type with neon indicating lights and clear see-through sealed housing to exclude dust. Provide IDEC Type RR, or equal. Two form-C contacts (minimum) shall be provided on each relay.
4. Time delay relays on energization (TR-TDOE) shall be solid state plug-in relays with adjustable timer ranges from 1 second to 10 hours selectable unless other ranges are shown. Provide LED timer energized indicator lamp. Time delay relays shall be IDEC RTE, or equal.
5. Time Delay Relays (TR-TDOD)
 - a. Time delay relays on de-energization (TR-TDOD) (continuous power control input) shall be solid state plug-in relays with a timer adjustable range from 1 second to 10 hours selectable unless other ranges are shown. Provide LED timer energized indicator lamp. Time delay relays shall be IDEC RTE, or equal.
 - b. Time delay relays on de-energization (TR-TDOD) (true off) shall be solid state plug-in relays with a timer adjustable range from 1 second to 10 minutes unless other ranges are shown. True off time delay relays shall be IDEC GT3F-2, or equal.
6. Power relays (PR) shall be plug-in type and clear see-through sealed housing to exclude dust. Provide Magnecraft Type 389FXCXC-120A, or equal. 3PDT contacts rated 20A or 1 HP at 240 VAC (minimum) shall be provided on each relay. Furnish compatible blade type relay socket model 70-788EL11-1 or equal.

D. Amperage Transducer:

1. Amperage transducer shall produce 4-20mADC output directly proportional to measured current (utilizing integral CT) of the power feed. Transducer range shall be selected for the load to be measured with expected load current between 50% and 75% of available measurement range. Transducer shall measure true RMS current and have an accuracy of 5% and repeatability of 1/2% of full scale (minimum). Operating temperature range shall be -20 deg C to 50 deg C. Transducer shall have separate zero and span adjustments. Insulation between output and case shall be rated at 1000VAC. Amperage transducer shall be as manufactured by Neilsen-Kuljian (NK technologies) ATR series or equal.

2.05 MOLDED CASE CIRCUIT BREAKERS

A. GENERAL

1. Circuit breakers and motor circuit protectors shall be manufactured by Eaton Cutler-Hammer, Square D, G.E., Siemens, or equal.
2. Circuit breakers shall be the bolt-on type.

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3. Multiple-pole circuit breakers shall be designed so that an overload on one pole automatically causes all poles to open. The use of tandem or dual circuit breakers in a normal single-pole space to provide the number of poles or spaces specified are not acceptable.
4. Molded case circuit breakers shall be operated by a single toggle-type handle and shall have a quick-make, quick-break switching mechanism. An automatic trip of the breaker shall be clearly indicated by the handle position. Contacts shall be non-welding silver alloy and have flash reduction arc chutes. A push-to-trip button on the front of the circuit breaker shall provide a local manual means to exercise the trip mechanism.
5. Minimum interrupting capacity:
 - a. 480 volt circuit breaker shall have a minimum interrupting capacity of 42,000 amperes.
 - b. 120 or 208 or 240 volt breaker shall have a minimum interrupting capacity of 22,000 amperes
6. Circuit breakers shall be UL listed for series application.
7. Where indicated circuit breakers shall be current limiting.
8. Where indicated on drawings, provide UL listed circuit breakers for continuous duty at 100% of their ampere rating in the intended enclosure.
9. Furnish add-on features such as auxilliary position status contacts, trip indication contacts, shunt trip coils, etc, as shown in the drawings.

B. TRIP UNIT – Molded Case Circuit Breakers

1. Circuit Breakers less than 400 volt shall have thermal-magnetic (TM) trip units and inverse time-current characteristics. All other circuit breakers shall have trip units as defined herein.
2. The trip unit shall be Eaton type Digitrip 310+ or equal.
3. Each molded case circuit breaker microprocessor-based tripping system shall consist of three (3) current sensors, a trip unit and a flux-transfer shunt trip. The trip unit shall use microprocessor-based technology to provide the adjustable time-current protection functions. True RMS sensing circuit protection shall be achieved by analyzing the secondary current signals received from the circuit breaker current sensors, and initiating trip signals to the circuit breaker trip actuators when predetermined trip levels and time-delay settings are reached.
4. Interchangeable rating plugs shall establish the continuous trip ratings of each circuit breaker. Rating plugs shall non-adjustable. Rating plugs shall be interlocked so they are not interchangeable between frames, and interlocked such that a breaker cannot be closed and latched with the rating plug removed.
5. Furnish 24VDC power supply with terminal blocks and 0.5A miniature circuit breakers to distribute power to each circuit breaker trip unit

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that requires it. Circuit breaker trip units shall be operable and adjustable with zero current flowing through the circuit breaker. The power supply shall be connected after the main breaker and above any feeder circuit breakers.

6. System coordination shall be provided by the following microprocessor-based time-current curve shaping adjustments:
 - a. Adjustable long-time setting (set by adjusting the trip setting dial to an amount not to exceed rating plug)
 - b. Adjustable short-time setting and delay with selective flat or I^2t curve shaping,
 - c. Adjustable instantaneous setting
 - d. Adjustable ground fault setting and delay with selective flat or I^2t curve shaping.
7. The microprocessor-based trip unit shall have both powered and unpowered thermal memory to provide protection against cumulative overheating should a number of overload conditions occur in quick succession.
8. Furnish internal ground fault protection with adjustable settings. Provide neutral ground fault sensor for four-wire loads.
9. Breakers shall have built-in test points for testing the long-time delay, instantaneous, and ground fault functions of the breaker by means of a test set.

2.06 MOTOR CONTROL ACCESSORIES

A. Control Power Transformer:

1. Control power transformer shall be epoxy encapsulated for dust and moisture protection. The internal wiring shall be copper and have 105 deg. C insulation rating. The unit shall feature barriered screw terminals for connection to electrical circuits. Provide with time-delay, slow-blow secondary fuse rated to protect the transformer and interrupt 10,000 amperes at 120VAC. Two primary fuses rated for 480 VAC and AIC as shown in the drawings shall be provided. Transformer minimum size and voltage ratings shall be as shown on Contract drawings. Control power transformer shall be Micron Impervitran, Cutler Hammer MTE or equal.

B. Motor Starter:

1. Motor starters shall be NEMA rated of size shown on the Drawings. Coil voltage shall be 120 volts AC or as shown otherwise in elementary drawings. Provide auxiliary contacts as required per the elementary diagrams and/or as shown in the P&IDs. Motor starters shall include contactor and overload relay as a package unit or as separate pieces to accommodate for special switching requirements. Motor starters shall be Cutler Hammer Freedom, Square D, GE or equal.

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C. Motor Overload:

1. External motor overload protection shall be required per drawings. External overload shall use bimetallic heating strips and provide +/- 15% adjustment for full load amperage. Provide Cutler Hammer Freedom or equal.

D. Voltage monitor Relay (VMR)

1. The voltage monitor relay (VMR) shall continuously monitor the three phases for power loss, low voltage, phase loss, and phase reversal. The VMR shall interface to the control circuit with DPDT contacts rated for 4 Amps at 120 VAC. The VMR shall have a drop-out voltage adjustment, time delay adjustment, and status indicating LEDs. Voltage monitor relay shall be Time Mark 2652, or equal.

2.07 DEVICES

A. Switches

1. General purpose commercial grade switches shall be manufactured in accordance with UL 20. Switches shall be one pole, brown, 20 amps at 277 VAC, 1HP at 120 VAC, 2 HP at 240 VAC. Switches shall have copper alloy contact arm with silver cadmium oxide contacts. Switches shall have slotted terminal screws and a separate green grounding screw. Provide Leviton 1221, or equal.
2. Wall mount commercial grade motion detector switches (denoted with M next to switch symbol in drawings) shall utilize passive infrared detection with 180 deg field of view to determine if the space is occupied by personnel. The device shall be capable of switching incandescent (800W at 120V) and fluorescent (1200VA at 120V) lamps with electronic ballasts. The device shall feature a manual-off-auto switch. A delay off time adjustment shall be settable from 30 seconds to 30 minutes. The device shall incorporate a photocell with light intensity adjustment to keep the switch from activating when light levels are above setting. Provide Leviton ODS10, or equal.
3. Timer Switches (denoted with T next to switch symbol in drawings) shall provide a variable time range countdown of lighting circuit. Depressing touchplate turns lights on for the dial setting located behind the touchplate. Dial setting ranges of 1 minute to 18 hours shall be attainable. An illuminated LED indicates the load is on and blinking LED accompanied by annunciator sound indicates end of time cycle. Device shall be capable of switching incandescent (600W at 120V) and fluorescent (900W at 120V) lamps with electronic ballasts. Timer Switch shall be Leviton 6652, or equal.

B. Receptacles

1. General purpose receptacles shall be commercial grade, duplex and rated 20 amps, 120 VAC, 2 pole, 3 wire grounding, NEMA 5-20R configuration, specification grade, and side wired to screw terminals.

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Face color shall be brown when paired with stainless steel covers. General purpose receptacles shall be specification grade Leviton 5362-B or equal.

2. Ground fault circuit interrupter receptacles (denoted by GFI next to receptacle symbol on plan) shall be used where noted as GFI and in all boxes shown as weatherproof (WP). GFI receptacles shall be commercial grade, duplex, brown, 20A, 120V, back and side wired, with "test" and "reset" buttons. "Daisy Chain" connecting multiple receptacles from one GFI unit is not acceptable. GFI receptacles shall be Leviton 8898, Leviton MGNF2-B, Leviton 7899, or equal.

2.08 DISCONNECTS

A. Disconnect Switch:

1. Disconnect Switch shall be heavy duty, horsepower rated, three pole, single throw, fusible/non-fusible with quick make/break operating mechanism. The enclosure shall be 316 stainless steel and rated NEMA 4X. The enclosed switch shall be rated for 480 Volt, and 10HP (minimum) unless otherwise shown on the drawings. Provide fuses, auxiliary contacts, or indicators as required by the motor control or one-line diagram. The operator shall actuate the switch side mounted handle and have provisions for up to 3 padlocks. Disconnect switch shall be Cutler Hammer DH series, Square D or equal.

2.09 SPARE PARTS

- A. The Contractor shall supply all spare parts prior to start of field tests. All parts shall be sealed in plastic bags and delivered to the site in a heavy duty plastic storage bag. Bag shall be clearly labeled with part name & number and the corresponding equipment tagname.
- B. The Contractor shall make available any replacement parts that are not manufacturer's normal stock items for immediate service and repair of all the instrumentation equipment throughout the warranty period.
- C. The following spare parts shall be provided as part of this Contract:
 1. Ten fuses for each type of fuse below 31 amps, 3 of each type above
 2. Ten lamps for each type of light, two lamps per color if LED type.
 3. Two relays for each type of control, and time delay relay.
 4. One voltage monitoring relay or power fail relay.

PART 3: EXECUTION

3.01 CONSTRUCTION METHODS

- A. Equipment shall be assembled and wired by the manufacturer prior to shipment. Field modifications or changes are not allowed without a written "change order" to the Contract. Field changes, however large or small, shall be executed using the components, materials, wiring, labeling, and assembly methods identical to that of the original supplied equipment.

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- B. Electrical plugs, receptacles, cords, and connectors required to power or interface the equipment and panels shall be furnished and installed by the Contractor.
- C. Factory as-built drawings for each custom manufactured control panel or MCC shall be shipped with the equipment and placed inside in waterproof envelopes.

3.02 EQUIPMENT FABRICATION

- A. All electrical equipment, including custom manufactured equipment, shall meet the requirements of Underwriters Laboratories (UL) and bear the appropriate label. Panels shall be affixed with UL label prior to shipment and be built in accordance with the UL guidelines and procedure that corresponds to the UL label. Custom control equipment shall bear a UL-508 label, minimum, with additional UL labels as required per intended service.
- B. Panel cutouts for devices (i.e. indicating lights, switches) shall be cut, punched, or drilled and smoothly finished with rounded edges. Exposed metal from cutouts that are made after the final paint finish has been applied shall be touched up with a matching paint prior to installing device.
- C. Equipment doors shall swing freely and close and latch with proper alignment.
- D. Component within the electrical equipment shall be securely mounted on an interior subpanel or backpan and arranged for easy servicing. Mounting bolts and screws shall be front mounted for device removal without special tools or removal of entire mounting panel.
- E. A ground bus shall be provided in each enclosure or cabinet. It shall have provisions for connecting a minimum of ten grounding conductors. Screw type lugs shall be provided for connection of grounding conductors. All grounding conductors shall be sized as shown on plans or in accordance with NEC Table 250-95, whichever is larger.
- F. Bolts and screws for mounting devices on doors shall have a flush head which blends into the device or door surface. No fastening devices shall project through the outer surfaces of equipment.

3.03 WORKMANSHIP

- A. All work in this division shall conform to the codes and standards outlined herein.
- B. Installation shall be performed by qualified personnel providing first class workmanship per Electrical Specifications [Electrical General, Qualifications].
- C. Maintain equipment installed (or to be installed) in new condition. Protect equipment from damage while in Contractor care from dust, water, or mishaps that are typical to construction sites
- D. Confirm that equipment and materials are correct for their intended duty and will be installed per manufacturer guidelines. Equipment and components

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found to be installed inconsistent with manufacturer guidelines and/or these specifications will not be acceptable and subject to removal and replacement.

- E. Upon completion of daily work, remove excess materials, scraps, and debris from the work area and from the inside of equipment.
- F. Upon notification, stop work on any portion of the installation that is determined to be non-compliant with contract or being installed by unqualified personnel.
- G. Perform all work to correct improper installations at no additional cost to the owner.
- H. Equipment furnished under this contract or provided to Contractor for installation shall be installed in accordance with manufacturer's instructions, installation calculations, and contract documents.

3.04 EQUIPMENT SHIPMENT AND STORAGE

- A. Shipment -- Any equipment whose destination (jobsite) is more than 25 miles from the factory shall be carefully protected for shipping. All openings shall be protected by plywood securely fastened to the framework of the equipment. Equipment shall be adequately covered during local delivery.
- B. Storage -- From the time of receipt until the equipment is installed and energized, the equipment shall be considered in storage. While in storage, a 120V, 1 phase source of power shall be made available and connected to space heaters in all items of equipment so equipped. Equipment not provided with space heaters shall be provided with a light bulb or electric heater while in storage to prevent moisture condensation. Unless stored indoors, it shall be at least 1 foot above grade covered with at least 2 layers of heavy polyethylene plastic sheets and anchored to prevent damage by high winds. All equipment shall be protected from dust and moisture prior to and during construction.

3.05 DAMAGED PRODUCTS

- A. Damaged products that cannot be repaired to new condition shall be replaced with new products. All equipment and materials shall be in like-new condition at start-up and commissioning.
- B. Any equipment furnished outside of contract to the Contractor shall be repaired or replaced if damaged while in the Contractor's care. The Contractor shall pay for the parts and/or services of the original equipment manufacturer (OEM) to troubleshoot, assess, and repair damaged equipment.
- C. Minor cosmetic damage shall be repaired by spray painting, after properly preparing the surface, all scratches or defects in the finish of the equipment. Only identical paint furnished by the equipment manufacturer shall be used for such purposes.

3.06 INSTALLATION

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A. General

1. Install all products per manufacturer's recommendations and the Drawings.
2. Provide all necessary hardware, conduit, wiring, fittings, and devices to connect the electrical equipment provided under other Sections.
3. Protect wiring insulation from wear by installing rubber cushions, bushings, or strip insulation, or by fastening the wiring to a rigid surface with zip ties and anchors.
4. Provide additional devices, wiring, conduits, relays, signal converters, isolators to complete interfaces of the electrical and instrumentation system.
5. Changing normally open contacts to normally closed contacts or vice versa
6. Adding additional relays to provide more contacts as necessary.
7. All programmable devices (not specifically excluded herein) shall be programmed, set-up and tested by the Contractor prior to startup. Programming and set-up parameters shall be adjusted or changed as directed by the Engineer during start-up and throughout the warranty period.
8. Coordinate with the Engineer and setup all alarm, process, and operation setpoints.
9. Keep a copy of the manufacturer's installation instructions on the jobsite available for review at all times prior to and during the installation of the associated equipment.

B. Panels and enclosures:

1. Install panels and enclosures at the location shown on the Plans or approved by the Engineer.
2. Install level and plumb.
3. Seal all enclosure openings to prevent entrance of insects and rodents.
4. Clearance about electrical equipment shall meet the minimum requirements of NEC 110.26

C. Conduits and Ducts:

1. Install all conduits and ducts per Electrical Specifications [Conduit and Boxes] and [Grounding].
2. Minimum wire bending space at terminals and minimum width of wiring gutters shall comply with NEC tables 312-6 (a) & (b).

D. Wiring, Grounding, and Shielding:

1. Observe proper grounding and shielding practices as this application environment is generally noisy. The shield of shielded cables shall be terminated to ground at one end only, the origination end. The shield at the other end shall be encased in an insulated material to isolate it from ground.

E. Cutting and Patching:

1. The Contractor shall do all cutting and patching required for installing his work. Any cutting which may impair the structure shall require prior approval by the Engineer. Cutting and patching shall be done only by skilled labor of the respective trades. All surfaces shall be restored to their original condition after cutting and patching.

F. Cleaning and Touch up:

1. At the completion of the work, all parts of the installation, including all equipment, exposed conduit, and fittings, shall be thoroughly cleaned of grease and metal cuttings. Any discoloration or other damage to parts of the building, the finish, or the furnishings, due to the Contractor's failure to properly clean the system, shall be repaired by the Contractor.
2. The Contractor shall thoroughly clean any of his exposed work requiring same.
3. Vacuum and clean the inside of all electrical and instrumentation enclosures prior to applying power.
4. The Contractor shall paint scratched or blemished surfaces with the necessary coats of quick drying paint to match existing color, texture and thickness. This shall include all prime painted electrical equipment including but not limited to enclosures, poles, boxes, devices etc.

3.07 APPLICATION OF POWER

- A. The Engineer will direct the energization and de-energization of all existing and new equipment. The Contractor is not authorized to energize or de-energize any equipment unless they have been given written permission to do so or while in the presence of the Engineer.

1. Any equipment that is under repair, demolition or installation shall be locked off and tagged out of service with Contractor supplied padlocks and tags.
2. The Contractor is required to comply with NFPA 70E and specifically in regards to safety when working on live equipment. Obtain work permits when needed to do live work.

- B. The Contractor is responsible for grounding of high and medium voltage cabling and/or bus during installation and removal of equipment. The

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contractor is responsible for complying with all California Electrical Safety Orders (ESO) and Occupational Safety and Health Act (OSHA) safety requirements and procedures while working in or near medium voltage equipment.

3.08 WARRANTY

- A. The Contractor shall warrant all electrical and instrumentation equipment & software for a period of 1 year from date of final acceptance. Standard published warranties of equipment which exceed the preceding specified length of time shall be honored by the manufacturer or supplier.
- B. The Contractor shall have a staff of experienced personnel available to provide on-site warranty service on 2 working days notice during the warranty period. Such personnel shall be capable of fully testing and diagnosing hardware & software and implementing corrective measures.

3.09 FINAL ACCEPTANCE

- A. Final acceptance will be given by the Engineer after the equipment testing is complete, each deficiency has been corrected, final documentation has been provided, and all the requirements of Contract documents have been fulfilled.
- B. At the end of the project, following the completion of the field tests, and prior to final acceptance, the Contractor shall provide the following:
 - 1. Each "operation and maintenance" manual shall be modified or supplemented to reflect all field changes and as-built conditions.
 - 2. Two (2) disk copies of all final documentation to reflect as-built conditions.
- C. Keys: Submit two sets of all keys for locks supplied on this project. Wire all keys for each lock securely together. Tag and plainly mark with lock number or equipment identification, and indicate physical location, such as panel or switch number.

END OF SECTION

SECTION 16110

CONDUIT AND BOXES

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Labor, materials, equipment, tools, safety gear, test equipment, incidentals, services, and transportation for a complete electro-mechanical installation as shown on the Drawings, included in these Specifications, or as can be reasonably implied from project descriptions.
- B. The scope of work includes:
 - 1. Furnish and install conduits, junction boxes, pull boxes, and associated hardware. Provide hardware, conduit, fittings, and other parts for a complete raceway installation.
 - 2. Furnish and install grounding system required by drawings, or if not shown or defined, as required by Article 250 of the NEC.
 - 3. Installations shall be designed and installed with components meeting the NEMA area designation.
- C. Work includes that specified in Electrical Specifications [Electrical General].

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Low Voltage Wire & Data Cable]
- C. Electrical Specifications [Grounding]
- D. Project Drawings

1.03 QUALIFICATIONS

- A. Material furnished under this specification shall be installed by qualified installers meeting requirements specified in Electrical Specifications [Electrical General, Qualifications].

1.04 SUBMITTAL REQUIREMENTS

- A. Provide submittals and drawings as specified in Electrical Specifications [Electrical General, Submittal Requirements].

PART 2: PRODUCTS

2.01 CONDUIT, RACEWAYS AND WIREWAYS

- A. GENERAL - Conduit, raceways, and wireways, wiring methods, materials, installation shall meet all requirements of the NEC, be UL labeled for the application, and meet the minimum following specifications.
1. All wiring shall be installed in conduits, raceways, or wireways when interconnecting equipment and devices.
 - a. The minimum size conduit shall be 3/4-inch unless indicated otherwise on the Drawings or for special connections to equipment.
 - b. Provide cords and cord seals for devices or instrumentation requiring waterproof seal to maintain NEMA 4 or 4X ratings. Example devices include lighting and pipe mounted instruments that are located below grade.
 2. Conduits may connect into junction boxes or wireways as shown in the drawings or as requested by Contractor and approved by Engineer. Junction boxes (circle with J in drawings) can be as simple as a conduit or JIC box, or larger box as determined by contractor and needed for the installation. Drawing may depict junction box requirements. Wireways or junction boxes shall be rated for area (as noted in the drawings), or furnish minimum NEMA 4 if not noted.
 3. The Contractor shall use conduit material types (SPEC per conduit schedule) as defined below or as otherwise shown in the contract drawings or as specifically called out in the conduit schedule.
 - a. Non-exposed underground portions of conduit run shall be PVC-40 for all signals and voltages unless otherwise shown in the conduit schedule.

- b. Exposed conduit material (not underground and beyond transition) shall be per the following table unless specifically noted otherwise in the plan drawings. The conduit schedule denotes the conduit type for non-exposed (under-ground, in-concrete, etc.) and does not apply or coordinate with this table. Exposed condulets, elbows, fittings, device boxes, and hardware shall be of the same material and finish as the adjacent conduit.

<u>Location</u>	<u>Material</u>
NEMA 1 or 12	Galvanized rigid steel (GRS)
NEMA 3R	PVC-Coated Steel (GRS-PVC)
NEMA 4	PVC-Coated Steel (GRS-PVC)
NEMA4X	PVC-Coated Steel (GRS-PVC)
Class 1 Div 1 or 2 hazardous	PVC-Coated Steel (GRS-PVC)

4. Conduit stubs and transitions:

- a. Conduit transitions shall be GRS-PVC for 6" on either side of the transition point (minimum) or as shown in drawing details. Conduit transition is defined as conduit sections emerging from or through concrete or earth or from below to above grade or through walls or vaults, non-exposed to exposed.
- b. Beneath pad mounted electrical equipment, where not exposed, shall be installed or trimmed to 2" or less above slab and have bushing or end bell installed. Overall height of conduit entering into the base of equipment shall be enough for bushings/bells to be installed but be high enough for conduit tags to be installed.
- c. Uniform in height for each panel or section. Conduits end bushings/bells shall not vary in height above slab more than 1/2" from lowest to highest.
- d. Conduits shall be spaced apart such that bushings and end bells may be installed without interfering with the adjacent conduits.
- e. Transitions to PVC shall include PVC coated locknuts to shield exposed steel pipe threads.
- f. Through walls – shall protrude approximately 2" and include end bell or bushing. Pack space around conduit with non-shrink grout if the thru-hole was core drilled.
- g. Conduits for future use shall be capped with coupling and plug. Identify each end with conduit labels.
- h. Existing conduits that are no longer able to be used due to removal of a section or shown demolished and that protrude above graded shall be cut flush and filled with grout.

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5. Conduit Tags

- a. All conduits listed in the "Conduit and Wire Routing Schedule" shall have conduit tags at both ends of each conduit run and within 3 feet of any pull box, panel board, switchgear or control panel with tag number from schedule identified. This shall include ends within underground pull boxes.
- b. All conduits shall have temporary tags during construction. Temporary tags may be made from duct tape with hand written ink marking or suitable equivalent. Temporary tags shall be removed by Contractor at time of installation of permanent tags.
- c. Conduit labels shall be stainless steel tape with pressure stamped letters and numbers. Stamped text shall not be less than 1/4 inch high. Conduit labels shall be a minimum of 2 inches long and 1/2 inch wide and shall be attached with #18 304 stainless steel wire

6. Supports

- a. Cross section of a single channel shall be 1-5/8" x 1-5/8" and cross-section of a double channel shall be 1-5/8" x 3-1/4". The channel wall thickness shall be 12 gauge as applicable.
- b. One-Hole clamps shall be intended for pipe mounting on support channels and equipped with clamp-backs. The clamps shall be Efcor, Thomas and Betts, Appleton or equal
- c. Spacers, provided to support underground conduits in concrete encasements, shall be plastic. The spacers shall be Carlon, Johns-Manville, Underground Products or equal
- d. Anchors shall be expansion type for securing equipment to concrete foundations, floors and walls. Anchors shall have length identification mark on the exposed end of the bolt. Provide Hilti Kwik Bolt 3, or equal.
- e. Stanchions shall be provided as needed to mount equipment and electrical components. Stanchions shall be shop fabricated from welded 4" c-channel, 12" x 12" x 1/4" steel base plate, coated with a rust inhibiting primer and top coat of gray polyurethane gloss paint. Attach equipment to the stanchion direct or on a 1/4" aluminum sheet sized for the equipment supported.
- f. Conduit Hangers shall be trapeze construction, with double channel, 3/8-inch rods and nuts. Suspend from suitable structural support.
- g. Support material and finish shall be per the following table unless otherwise noted in the drawings. Brackets, fittings and

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hardware shall be of the same material and finish.

<u>Location</u>	<u>Material</u>
Indoors NEMA 12	Galvanized steel
Outdoors NEMA 3R	Galvanized steel
Outdoors NEMA 4	Stainless Steel type 316
Corrosive areas NEMA4X	PVC bonded, 40 mil, factory applied

- h. Equipment mounting racks shall be designed by installer for rigid equipment and conduit mounting. Racks shall be bolted or welded construction and sized for equipment or as shown on the drawings.
- i. Strut channels shall be used for mounting equipment to walls and for supporting conduit runs. Double strut channel type shall be used for fabricating equipment mounting racks as required and/or as detailed on the drawings. Add additional supports to rigid mounting locations as needed to prevent wobbling and to meet seismic requirements. All field cut surfaces of the strut channels shall be deburred and coated to prevent rust.

B. GALVANIZED RIGID STEEL CONDUIT - (GRS)

- 1. Manufactured from high-strength steel and hot dipped zinc galvanized inside and out. Conduit and fittings shall meet UL 514B, UL 6, and conform to NEMA RN 2. Conduit shall be capable of being used as an equipment grounding conductor per NEC 250.
- 2. Provide galvanized rigid steel factory sweeps and elbows for 90 degree transitions.
- 3. Cast fittings and device boxes shall be malleable iron or aluminum. Appleton type FS/FD or equal.
- 4. In hazardous locations, fittings shall meet and be listed UL 886.
- 5. All fittings, hubs, couplings, pulling elbows and connectors shall be threaded-type. Set-screw type and compression-type are not acceptable. All thread conduit is not allowed over 1/2" exposed length. Cover plates shall be cast iron with sealing gasket in NEMA 3R locations.
- 6. Conduits entering enclosures shall be fitted with insulated grounding bushing; O-Z "HBLG", Appleton "GIB", or approved equal. All grounding bushings shall be tied to the grounding system with properly sized bonding conductors per the NEC code.
- 7. Combination expansion-deflection fittings installed exposed shall be Type XD as manufactured by Crouse-Hinds Co.; Type DX as manufactured by O.Z. Gedney Co.; Type DF as manufactured by Appleton Electric Co., or equal

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C. GALVANIZED RIGID STEEL CONDUIT - PVC COATED (GRS-PVC)

1. Galvanized Rigid Steel conduit with a 40-mil thick polyvinylchloride exterior coating and a 2-mil urethane interior coating meeting NEMA RN-1, UL-6 and ETL PVC-001. The bond of the PVC to the zinc coated pipe must be stronger than the tensile strength of the PVC.
2. Provide PVC coated galvanized rigid steel factory sweeps and elbows for 90 degree transitions.
3. Cast fittings and device boxes shall be malleable iron or aluminum with a 40-mil thick PVC coating meeting the same
4. In hazardous locations, fittings shall meet and be listed UL 886.
5. Provide PVC coated threaded-type fittings, hubs, pulling elbows, couplings, and connectors; set-screw type and compression-type are not acceptable. Form 8 conduit fittings, ½" through 4", must have a tongue-in-groove gasket to effectively seal out the corrosive elements. Covers shall be supplied with plastic encapsulated stainless steel cover screws. Form 8 fittings shall be UL and type 4X and IP69 listed.
6. A "PVC Coated Sealing Locknut" shall be used on all exposed male threads transitioning into female NPT threads which do not have sealing sleeves, including transitions from PVC couplings/female adapters to PVC Coated GRC elbows in direct burial applications. "PVC Coated Sealing Locknuts" are not to be used in place of a myers hub
7. A PVC sleeve extending one pipe diameter or two inches, whichever is less, shall be formed at every female fitting opening except unions. The inside sleeve diameter shall be matched to the outside diameter of the conduit.
8. All junction and metal pull boxes shall be galvanized with exterior surfaces PVC coated to 40 mils thickness.
9. Unistrut, strut clamps, pipe straps, and clamp back spacers, shall have 40 mil thick PVC coating. All mounting anchors shall be stainless steel.
10. Conduits entering enclosures shall be fitted with insulated grounding bushing. All grounding bushings shall be tied to the grounding system with properly sized bonding conductors per the NEC code.
11. Installers of PVC Coated Conduit must be certified by the manufacturer and be able to present a valid, unexpired certified installer card.
12. GRS-PVC conduit to be Robroy Plasti-bond, Perma-Cote, KorKap, T&B OCAL or equal.

D. PVC CONDUIT, SCHEDULE 40 or 80 (PVC-40, PVC-80)

1. Shall be high impact schedule 40 or 80 polyvinylchloride suitable for use underground, direct burial and for use with 90 C wires, and shall

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conform to UL 651. Shall be UL listed and labeled for "direct" burial.

2. A copper bonding conductor shall be pulled in each raceway and bonded to equipment at each end with approved lugs.
3. Each underground run shall be placed in a trench with a five (5) inch sand bed evenly compacted on all sides, top and bottom unless otherwise noted.
4. Elbows, and risers shall be per exposed conduit transition detail. PVC conduit is not allowed above ground.
5. PVC fittings shall have solvent-weld-type conduit connections. Fittings and device boxes shall be PVC with factory fabricated conduit connections. Provide Carlon or equal.
6. Conduits entering enclosures shall be fitted with a glued male adapter, lock ring and bushing to prevent wire chafing. Conduits entering panels through concrete to an open bottom or entering a pull box shall have a glued end bell fitting.
7. PVC conduit shall be stored on a flat surface and shielded from the sun.

E. LIQUID TIGHT FLEXIBLE METAL CONDUIT (up to 2") - (FLEX)

1. Liquid Tight Flexible Metal conduit shall be highly flexible, moisture and oil-proof with black thermoplastic rubber cover that is extruded over a galvanized flexible steel conduit.
2. Liquid tight Flexible Metallic Conduit shall be sunlight, oil, and flame resistant and be manufactured for extreme temperature environments (-75 deg F to +302 deg F). Conduit shall be approved for the installation of electrical conductors in indoor and outdoor applications.
3. Liquid tight Flexible Nonmetallic Conduit shall be listed to UL standard UL 360.
4. Liquid tight flexible metallic conduit shall be installed in accordance with Article 351, Part B of the National Electrical Code (NEC) and other applicable sections of the NEC and/or local electrical codes.
5. Liquid tight Fittings shall be listed for the use with Liquid tight Flexible Metallic Conduit and conform to UL514B.
 - a. Outdoors when extension of GRS-PVC: PVC coated galvanized steel with insulated bushings.
 - b. Outdoors when extension of GRS: Galvanized steel with insulated bushings
 - c. Indoors: Galvanized steel with insulated bushings.

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6. Flexible Metallic Conduit shall be Anaconda HCX or equal.

F. LIQUID TIGHT FLEXIBLE METAL CONDUIT (above 2-1/2") - (FLEX)

1. Liquid Tight Flexible Metal conduit shall be moisture and oil-proof with PVC jacket extruded over a galvanized flexible steel conduit.
2. Liquid tight Flexible Metallic Conduit shall be sunlight, oil, and flame resistant and approved for the installation of electrical conductors in indoor and outdoor applications.
3. Liquid tight Flexible Nonmetallic Conduit shall be listed to UL standard UL 360.
4. Liquid tight flexible metallic conduit shall be installed in accordance with Article 351, Part B of the National Electrical Code (NEC) and other applicable sections of the NEC and/or local electrical codes.
5. Liquid tight Fittings shall be listed for the use with Liquid tight Flexible Metallic Conduit and conform to UL514B.
 - a. Outdoors when extension of GRS-PVC: PVC coated galvanized steel with insulated bushings.
 - b. Outdoors when extension of GRS: Galvanized steel with insulated bushings.
 - c. Indoors or outdoors when extension of stainless steel: 316 stainless steel with sealing ring and insulated bushing.
 - d. Indoors: Galvanized steel with insulated bushings.
6. Flexible Metallic Conduit shall be Amer-Tite type GP or equal.

2.02 DEVICE BOXES

A. BOXES

1. Device boxes shall be of zinc-galvanized malleable iron or cast aluminum with shape and size best suited for the particular application, rated for the location installed, and shall be supported directly to structure by means of screws, anchors, or bolts.
2. Box dimensions shall be in accordance with size, quantity of conductors, and conduit clearances per NEC articles 314 requirements.
3. Boxes exposed to the weather or in moist locations shall be weatherproof (WP) by means of gasketing under a weatherproof cover.
4. Boxes connected to GRS-PVC conduit runs shall be PVC coated with 40 mil coating.

B. DEVICE PLATES and COVERS

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1. Indoor general purpose device plates and covers shall be stainless steel. Plates or covers shall be attached with stainless steel screws. An engraved plastic label denoting circuit breaker number and panelboard name shall be affixed to each cover with #4 stainless steel screws.
2. Weatherproof switch, outlet, and receptacle boxes shall be fitted with gasketed covers rated for wet locations. Each access cover shall have a padlockable cover to maintain security and weatherproof integrity even when a plug is connected to the receptacle. Screws and hinge springs shall be stainless steel. Weatherproof access covers shall be Leviton 5977-CL, Cooper 4966, or equal.

2.03 PULL BOXES

A. JUNCTION BOXES

1. Where required for best installation or where specifically called out in the drawings, junction boxes shall have JIC type construction with hinged door, NEMA 4X rating, manufactured of type 304 stainless steel or as otherwise shown. Door shall be fastened with clamps and stainless steel screws. No devices, screws, rivets, or bolts shall protrude through the exterior surface unless specifically shown on the drawings. Boxes shall be Hoffman, Circle AW, or equal.

B. UNDERGROUND BOXES

1. Underground pull boxes shall be prefabricated "Christy Box" size and type as noted in the drawings or equal. Size shall be as shown or dimensioned on the Drawings. Provide larger boxes as needed to meet code or as determined in field to allow for adequate pull area at Contractor discretion. Extension sections shall be provided as necessary to reach the depth of underground conduits with maximum depth of 48". All boxes shall have galvanized steel hold down bolts and hardware. Boxes shall be H/20 loading rated and have traffic rated covers. Steel covers or lids shall be galvanized and grounded with bonding jumper to the local grounding circuit per NEC. Pull box covers shall be labeled electrical, signal, utility, and telephone, whichever applies. Pull boxes shall be Christy Concrete Products, Brooks or equal.

C. UNDERGROUND VAULTS:

1. BOX: Underground vaults shall be prefabricated 6" thick reinforced concrete (4000PSI), H/20 load rating, with the interior size (minimum) as shown on the Drawings.
 - a. Provide larger pull boxes when necessary to allow for adequate pull area or to accommodate the number of conduits entering box.
 - b. Vaults shall include 2" thinwall section knock out area for conduit entry on 4 sides. Provide hole in bottom corner for ground rod.

- c. Extension sections shall be provided as necessary to reach the depth of underground conduits.
 - d. Provide sloped bottom with 4" drain hole knockout in bottom center of vault.
2. LID: Provide hinged, torsion spring assist, traffic rated H/20, lid cover assemblies. Provide single leaf for 3 by 3 feet pull boxes. Provide double leaf for vaults with openings larger than 3 by 3 feet.
 3. GROUND BUS: Provide a ¼" x 12" copper ground bus in each vault. Provide 8 - 3/8" diameter holes for multiple #4/0 terminal compression or crimp connectors. Connect ground conductors from duct banks to the ground bus. Connect ground terminals to ground bus using bronze or stainless steel hardware.
 4. CABLE SUPPORTS: Provide heavy-duty, nonmetallic cable racks for support of wire and cable in vaults. Racks shall be UL listed glass-reinforced nylon consisting of slotted wall brackets supporting cable support arms. Arms shall be designed to support a 400-pound load, minimum. Arms shall be adjustable by moving up and down the bracket. Each support bracket shall extend all the way from the bottom of the handhole to the top of the handhole. Provide 1/2-inch stainless steel bolts, washers, and anchors to secure racks to handhole wall. Cable racks shall be Underground Devices Incorporated type RA arms with CR36 support brackets; Uni-strut Power-Rack F20N-STA33 Stanchions with F20N-ARM14 Arms; or equal. Provide racks to support conductors on 18-inch centers.
 5. Underground vaults shall be Oldcastle Precast, Brooks, or equal.

D. PULL BOX AND VAULT IDENTIFICATION

1. Engrave or bead weld box covers with minimum thickness of ¼" x 1" lettering with pullbox name (i.e. PBX-XXX) and purpose (electrical, signal, fiber, telephone, etc.). Provide an additional identifier "high voltage" for boxes with 600 volts or higher.
2. Utility pull boxes shall be labeled per Utility Company standards.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in specified in Electrical Specifications [Electrical General, Workmanship].

3.02 INSTALLATION

- A. System:
 1. Install all products per Electrical Specifications [Electrical General,

Installation].

B. Rigid Conduits and Ducts:

1. Exposed conduits shall be neatly arranged with runs perpendicular or level and parallel to walls. Bends shall be concentric.
2. Except as expressly indicated or approved, all conduits shall be surface mount on block walls, concealed behind gypsum walls, and buried to required depth below floor slabs.
3. Pipe threads shall be treated with conductive thread compound.
4. Installation of the GRS-PVC conduits must be in accordance with the manufacturer's installation procedures using recommended tools.
 - a. Apply touch up compound at each fitting sealing sleeve edge to improve watertight seal.
 - b. To ensure compliance, the installer(s) must be "manufacturer certified" before installation can proceed.
 - c. Certification available by contacting manufacturer's representative and attending a brief instructional course. Valid and unexpired certification card shall be available for review per installer.
5. Repair GRS-PVC coating utilizing a touch-up compound as provided by the manufacturer of the conduit of the same material as the coating. Overlap beyond the damaged area to cover the PVC coating. Contact from touchup compound to PVC is required to maintain integrity. The entire conduit shall be replaced if the repair exceeds 1" combined length.
6. A maximum of three equivalent 90 degree elbows are allowed in any continuous run. Install pull boxes where required to limit bends in conduit runs to not more than 270 degrees or where pulling tension would exceed the maximum allowable for the cable.
7. Route all above grade conduits parallel or perpendicular to structure lines and/or piping. Conduits installed above grade shall be braced in place with stanchions. Expansion joints shall be installed every 100 feet. Bends shall be concentric.
 - a. Combination expansion-deflection fittings installed exposed shall be Type XD as manufactured by Crouse-Hinds Co.; Type DX as manufactured by O.Z. Gedney Co.; Type DF as manufactured by Appleton Electric Co., or equal
8. Care shall be exercised to avoid interference with the work of other trades. This work shall be planned and coordinated with the other trades to prevent such interference. Process Pipe, mechanical and HVAC shall have precedence over conduits for routing and space

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requirements.

9. Seal each bottom entrance conduit into the MCC and other electrical enclosures with plugging compound sealant to prevent the entrance of gasses, insects and rodents. Plugging compound sealant shall be Gardner Bender Duct Seal or equal.
10. Exposed conduit stubs for future use shall be capped with coupling and plugged. Drill hole in plug for pull rope as necessary.
11. Explosion proof seal-off fittings shall be provided on all conduits that enter or leave hazardous areas per requirements of the National Electrical Code, Chapter 5 and UL 886. The seal-off fitting shall prevent hazardous gases and/or flames from passing from one type area to another through the conduit system. Ceramic or other non-asbestos fiber material and sealing compound shall be placed in the fitting to complete the seal.
12. Hazardous location conduit outlet boxes shall be used in hazardous locations for change in direction, access to conductors and as pull and splice boxes.
13. All spare conduits shall have 1/8" nylon pull ropes installed.

C. Flexible Conduit and Cords

1. Final connections to vibrating equipment such as motors, heaters and fans shall be made with liquid tight flexible conduit.
2. Flexible conduit lengths shall not be greater than 36 inches for sizes up to 2 1/2" and 48 inches for 3" and larger conduit.
3. Flexible conduit shall include a ground conductor for equipment bonding in circuits over 30 VDC or as shown in the conduit schedule.
4. Flexible conduit shall only be installed in exposed or accessible locations.
5. Where equipment is cord connected, submersible rated, and conduit connections are not possible without modification, devices and equipment may be free-air cord connected in lieu of flexible conduit. Connection to adjacent rigid conduit shall be through liquid-tight cord connector fitting specifically designed for the purpose and sized appropriately for the cord. Cord connectors shall be rated similar to the adjacent conduit they are connected to: Stainless steel, galvanized or plastic.

D. Excavation and Back Filling:

1. Trenches for conduit below floor slabs and other underground electrical conduit shall be excavated to the required depths per utility requirements or specific detail. Conduits under floor slabs shall have minimum trench depth to contain bends without any portion of the

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radius visible at finished grade.

2. Underground conduits outside of structures, excluding utility conduits, shall have a minimum cover of 24 inches except under roadways where minimum cover shall be 30 inches or as otherwise shown in the Contract Drawings. Back filling shall be done only after conduits have been inspected. Excavation and back fill of conduits shall conform to the requirements of other applicable Specifications sections unless modified on plans, and to other entities (Utilities, etc.) as required.
3. Install spacers to support underground conduits. Horizontal and vertical separation shall be maintained by plastic spacers set every four feet. Spacers shall be Carlon Snap-Loc or equal.
4. At all times during the installation of the electrical system, the Contractor shall provide barricades, fences, guard rails, etc., to safeguard all personnel, including small children, from excavated trenches.

E. Underground pullboxes:

1. Pullboxes shall be located in areas that will experience the least traffic loading and in the general vicinity as shown in the contract drawings. Boxes in pavement shall be set at final grade and boxes in planter areas shall be set 1" above final grade. Boxes shall not be buried by landscape material.
2. Steel pull box lids shall be grounded per NEC 250.4(A)(5) and 314.4.
3. Boxes shall be set on compacted base and base rock to minimize settling of the box over time. If the box is located in a paved traffic area, a 6" x 6" concrete ring shall be poured around the box below the pavement.

F. Device Mounting Heights:

1. Mounting heights of fixtures and devices shall be as follows unless otherwise indicated or when height has to be adjusted to be over or under counter tops.

Wall switches	=>	48 inches
Convenience outlets	=>	18 inches
Telephone outlets	=>	18 inches
Bracket fixtures	=>	7 feet 6 inches

G. Cutting, Coring, Patching and Repairing:

1. The Contractor shall do all cutting and patching required to install his work. Any cutting which may impair the structure will require prior approval. Cutting and patching shall be done only by skilled labor of the respective trades. Where it is becomes necessary to cut into existing work for the purpose of making electrical installations, locate existing post tension cables, rebar and electrical services prior to core

drilling using ground penetrating radar or similar technologies. All surfaces shall be restored to their original condition after cutting and patching.

3.03 FIELD ASSISTANCE

- A. General: Provide all equipment and supplies necessary to perform all testing. The Owner Representative shall have the option to witness and participate in the on-site tests performed by the installer.
- B. Per Electrical Specifications [Factory and Field Testing].

3.04 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

END OF SECTION

SECTION 16120

LOW VOLTAGE WIRE & DATA CABLE

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Labor, materials, equipment, tools, safety gear, test equipment, incidentals, services, and transportation for a complete electro-mechanical installation as shown on the Drawings, included in these Specifications, or as can be reasonably implied from project descriptions.
- B. The scope of work includes:
 - 1. Furnish and install wire, splices, lugs, or other miscellaneous devices as defined in this specification.
 - 2. Testing of conductors and completed wired systems.
 - 3. Installations shall be designed and installed with components meeting the NEMA area designation.
- C. Work includes that specified in Electrical Specifications [Electrical General].

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Conduit and Boxes]
- C. Electrical Specifications [Grounding]
- D. Project Drawings

1.03 QUALIFICATIONS

- A. Material furnished under this specification shall be installed by qualified installers meeting requirements specified in Electrical Specifications [Electrical General, Qualifications].

1.04 SUBMITTALS AND DRAWINGS

- A. Provide submittals and drawings as specified in Electrical Specifications [Electrical General, Submittal Requirements].

PART 2: PRODUCTS

2.01 WIRING AND ELECTRICAL DEVICES

A. GENERAL

1. General

- a. Provide wiring and electrical devices specified herein and install field and internal panel wiring as shown on the Contract Drawings.
- b. This section applies to all wires or conductors used internal (non-field) to electrical equipment or external for field wiring.
- c. Field wire quantity and size shall be per "Conduit and Wire Routing Schedule."

2. Analog Signals

- a. Analog signal transmission between electric or electronic instruments shall be 4-20 milliamperes and shall operate at 24 volts DC unless otherwise specified. Milliampere signals shall be current regulated and shall not be affected by changes in load resistance within the unit's rating.
- b. Provide powered current isolators wherever the loops' load resistance exceeds the originating current signal transmitter's rating. Associated shunt resistors shall be located on rail-mounted terminal blocks. Exposed resistor leads shall be insulated with heat-shrink tubing.

B. LOW VOLTAGE WIRE AND CABLE (through 600V except instrument signals)

1. General: Low voltage conductors shall be used for power, control, lighting and miscellaneous circuits. This Section applies to all wires or conductors used internal for all electrical equipment or external for field wiring. Wire shall be new, plainly marked with UL label, gauge, voltage, type of insulation, and manufacturer's name.
 - a. Conductors shall be copper with a minimum of 98% conductivity.
 - b. Class C stranding. Solid conductors may be used for lighting and receptacle circuits.
 - c. Wire shall be rated 600 volt (min).
 - d. Size all conductors per NEC minimum or as shown on the drawings.
 - 1) Minimum #12 AWG for wires used in power transmission

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circuits or as defined on the drawings.

- 2) Minimum #14 AWG for wires used in signal transmission circuits or as defined on the drawings.
2. Wire colors and sizes shall not change within the circuit.
 3. Wire shall be properly fused or breaker protected at or below the maximum amperage rating allowed by the NEC.
 4. Control and Power Wiring:
 - a. Field wire in conduit:
 - 1) Type XHHW-2, XLPE insulation, rated 90 °C in wet or dry locations, oil resistant.
 - i Use for power circuits carrying voltages higher than 200 volts phase to ground.
 - 2) Type THHN / THWN, PVC with nylon jacket insulation, rated 90 °C in dry locations and 75 °C in wet locations, oil resistant, UL83.
 - i Use for power circuits with voltages below 200 volts phase to ground, or control circuits.
 - 3) Minimum #12 AWG for wires used in power transmission circuits or as defined on the drawings.
 - i Minimum #14 AWG for wires used to power instrumentation.
 - 4) Minimum #14 AWG for wires used in signal transmission circuits or as defined on the drawings.
 - i Minimum #16 AWG for wires used to power instrumentation discrete signals.
 - b. Power cord
 - 1) Flexible wire cord shall be type SOW, SOOW, or G and be provided in 2, 3, or 4 conductor plus ground as required for connected load.
 - 2) EPR insulation, 90 deg C rating, oil and abrasion resistant, overall jacket plus individual conductor jackets. 600V rated
 - 3) Conductors shall be stranded copper.
 - 4) Cord shall be installed with cord grips on each end where it enters termination enclosures.

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c. VFD Motor Supply Cable

- 1) VFD motor supply cable shall be shielded and designed for use with AC variable frequency drives. The cable shall be used to interconnect a variable frequency drive to the controlled motor.
- 2) The VFD cable insulation shall disperse voltage spikes, harmonics, and power distortions associated with variable frequency drives. Cable shall be plainly marked with UL label, gauge, voltage, type of insulation, and manufacturer's name.
- 3) Conduits requiring VFD supply cable shall be specifically listed in the conduit schedule in "NOTES" column designation defined as VFD CABLE.
- 4) Power conductor size shall be as listed in the conduit schedule. Length shall be as required to extend from VFD to motor connection terminals. Conductor stranding shall be fine wire, three black conductors with white numbers and one green/yellow ground. Conductor stranding shall be class C or finer.
- 5) Insulation for conductors shall be rated for 1000 volts (min). Insulation shall be oil and UV resistant rated - 25°C to 90°C.
- 6) For Cable sizes 12 AWG to 2 AWG the cable construction shall be tinned copper with XLPE insulation under dual shielding of foil tape and copper braid construction, and outer PVC jacket. The VFD motor supply cable shall be Olflex/Lapp USA Wire and Cable Inc. OLFLEX Slim series, Belden 295xx or equal.
- 7) For cable sizes above 2AWG to 500MCM the cable construction shall utilize 3 symmetrical grounds next to 3 power conductors with XLPE insulation and foil and braid shield. The VFD motor supply cable shall be Olflex/Lapp USA Wire and Cable Inc. OLFLEX VFD Symmetrical series or equal.

d. Nonfield control panel or factory installed equipment internal wiring:

- 1) Insulation - Type MTW, NFPA standard 79, UL 1063 with tinned copper.
- 2) Minimum #16 AWG for wires used for individual conductor circuits 100 volts and above.
- 3) Minimum #18 AWG for wires used for individual conductor circuits below 100 volts.

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5. Instrument wiring:

- a. Field: Instrument cables shall have 600V tray cable rated insulation and 100% individual shielded twisted pair #16 conductors with drain wire. Single twisted shielded pair (TSPR) cables shall be Belden 9342, or approved equal. Three wire twisted shielded cables (#18 TS3W) shall be Belden 1119A or equal.
- b. Non-Field: Instrument cables shall have 300V rated insulation and 100% individual shielded twisted pair #18 conductors with drain wire. Single twisted shielded pair (TSPR.) cables shall be Belden 8760, or approved equal. Three wire shielded cable shall be Belden 8770 or equal.
- c. Field multi-pair instrument cable as required per conduit schedule shall have 300V rated insulation and 100% individual shielded twisted pair #18 conductors with drain wire. Multiple twisted shielded pair (T.S.PR.) cables shall be Belden 9773 thru 9777, or equal.
- d. Multi-pair cable is not allowed (unless specifically called out in conduit schedule or on plans) for use in field or non-field applications. One T.S.PR cable is required for each signal.

6. Manufacturer Supplied Cables

- a. Cables and wiring for special systems provided by the manufacturer with the equipment shall be installed per the manufacturer's recommendations.

7. Data Cable

- a. Data network category 6 cable (indoor) shall consist of 4 pair unshielded twisted pair #24 awg solid copper conductors. The cable shall be rated by IEEE for service intended – plenum and dry.
 - 1) Cable: IEEE Category 6, various manufacturers.
 - 2) Connectors: Standard RJ-45 with boot.
- b. Data network cable (outdoor) shall consist of 4 pair foil and braid shielded twisted pair #24 awg solid copper conductors with anti-crosstalk divider, and drain wire. Rated Level 2 Category 5e Outdoor Carrier by IEEE for use in plenum, conduit, wet or dry.
 - 1) Cable: IEEE Category 5e, Ubiquiti Tough Carrier, Belden, or equal
 - 2) Connectors: Grounded RJ-45 with drain wire crimp.

8. Fiber Optic Cable

- a. Each fiber continuous with no factory splices.
- b. Single-mode, graded index, solid glass wave guides with the following characteristics:
 - 1) Maximum attenuation (1310 nm) 0.4 dB/Km.
 - 2) Maximum attenuation (1550 nm) 0.3 dB/Km.
- c. FDDI compatible and meets requirements of ANSI X3T9.5 for FDDI cable.
- d. Attenuation tested, all fibers, with results provided on reel. Fiber attenuation, connector and splice losses shall not exceed 20% loss deviation between strands.
- e. All splices shall be fusion splices, mechanical splices are not allowed.
- f. Connector type shall match the installed equipment or patch panels. Single mode fibers shall be LC ceramic. Connectors shall be attached using heat cured epoxy. Crimp-on or UV-cured connectors are not acceptable.
- g. All fiber cables shall be terminated in an approved fiber patch panel, "wic", or other approved termination enclosure. The fiber run shall then be connected to electronic equipment using fiber patch cords.
- h. Spider fan out kit shall be used for field termination and pull out protection of fiber optic cables. The spider fan out shall consist to 24 buffer tubes for individual break out and connector installation. Provide Corning SFK, or equal.
- i. All strands of new fiber cables shall be terminated and tested without regard to designated use. Spare strands shall be terminated and tested equally with strands designated for active use on a project.
- j. When fiber optic cable is delivered to a project site, a test should be performed to verify the condition of the cable prior to installation. The cable and reel shall be physically inspected for damage and all the fibers shall be tested with an Optical Time Domain Reflectometer (OTDR) for fiber integrity. The results of these tests shall be submitted for review and approval.
- k. Smaller fiber runs, such as runs within the same cabinet, short runs in a building, etc. may not require pre-installation testing of cable. Waiver of this testing requirement shall not be done without approval
- l. After the fiber optic cable has been pulled, but before breakout and termination, all the fibers shall be tested with an OTDR for fiber integrity. Test results shall be submitted for review and approval.

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- m. When outdoor splices are performed at one location, all splices shall be tested with OTDR at the optimal wavelengths (1310 and 1550 for single-mode), in both directions. These tests shall be performed prior to enclosing and sealing the splices. These tests be witnessed by the Designer, and/or an Owner Representative. The splices shall be tested for integrity as well as attenuation. Individual fusion splice losses shall not exceed 0.1 dB. The test results shall be recorded, and submitted for approval.
 - n. When all fiber links have been completely installed, each link shall be tested with an OTDR and an Optical Loss Test Set with appropriate launch cable. All tests shall be conducted in the presence of the Designer and/or an Owner Representative. OTDR traces shall be from both directions on each fiber at the two optimal wavelengths, 1310 and 1550 for single mode fibers. Optical loss testing shall be done with handheld test sets in one direction at the two optimal wavelengths for the appropriate fiber type. Final testing shall include patch cords.
 - o. During any fiber testing, each tested fiber should exhibit similar results to the other fibers within the same cable. For example, each fiber within a cable may meet the minimum loss standards, but may vary greatly throughout the acceptable range. This could indicate splicing issues, or that minor physical cable damage had occurred during installation. Loss deviations of 20% or greater are not acceptable and will cause a test to fail, even though all fiber results were within the acceptable loss range.
 - p. Each results of each test perform shall be recorded and submitted to the Design Engineer and Owner. Test forms shall be produced, submitted, and approved prior to commencement of any testing. These forms should include the test type, the test location, test date, wavelength, index of refraction, origination/destination cable designation, fiber type, fiber number, fiber color, and the result of the value of the tested parameter. Hardcopy OTDR traces shall be attached to the completed test forms. Electronic versions of OTDR traces shall be submitted.
9. Temporary motor or panel hook-up
- a. Temporary cable may be cord without conduit or PVC conduit with wiring. In either case, the cabling must be protected from damage during construction. Sections may be located out of harms way, buried, or sleeved in steel conduit as needed.
 - b. Power Circuits: Provide 2, 3, or 4 conductor plus ground power supply cable(s) for temporary pump connections or electrical power circuits. Cables shall be sized for breaker rating amperage, (minimum).

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- c. Provide multi-conductor (TC) cables for digital control circuits. Provide quantity of conductors as needed.
- d. Provide instrument wiring for 4-20 ma instrumentation.
- e. Voltage drop in power circuits shall not exceed 15% during motor start and 5% during operation.

C. COLOR CODE

- 1. All wires #8 and below shall have wire insulation the color specified. Wires #6 and larger may be black with color electrical tape at termination points.
- 2. No other colors shall be used without prior approval.
- 3. Color code - color code of all wire shall conform with the following table:

WIRES COLOR CODE TABLE

Description	Phase / Code Letter	Field wire or tape color	Non-Field Wire Color
480V, 3 Ph	A	Brown	Brown
	B	Orange	Orange
	C	Yellow	Yellow
	Neutral	Gray	Gray
240V or 208V, 3 Ph	A	Black	-
	B	Red (Orange if high leg)	-
	C	Blue	-
240 / 120 V, 1 Ph	L1	Black	Black
	L2	Black	Black
24V Positive	24+	Red	Red
24V Negative	24-	Gray	Gray
AC Control		Violet	Violet
DC Control Pos.		Red	Red
DC Control Neg.		Gray	Gray
Neutral	N	White	White
Ground	G	Green	Green
Shielded Pair	+	Black	Black
	-	Clear	Clear

2.02 WIRE MARKING

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- A. All panel, enclosure and field wiring shall have wire labels on both ends of each wire. Labeling shall be neatly installed for visibility and shall be clearly legible. Each conductor of instrument shielded signal wiring shall be labeled. Wire labels shall be machine printed with on white heat shrinkable tubing. Each label shall fit a minimum 23 characters, 3/16" in height before shrink. Tubing shall be oversized for the wire and shrunk into place using an electric heat gun. The "shrunk" label shall have just enough give to allow the label to be rotated. Hand lettered wire labels are not acceptable and shall be replaced at the Contractor's expense. Provide Brady "PermaSleeve" or equal.
1. **Source/Destination Wire Identification** - all wires, field and interior to equipment, shall be identified with wire labels.
- a. Wire labels shall be made up using "origination/destination" style numbering system. Consequently, each wire will have a unique set of wire labels that have their origin/destination numbers inverted on each end of wire.
- b. Wire labels shall be exactly per interconnection submittal and/or control panel drawings -- abbreviations determined in the field are not allowed. Abbreviations may be used in the wire label as submitted and approved in the interconnection drawings submittal.
- c. Wire labels shall provide a complete description of the origination and destination panel/device and terminal number.
- d. Wire labels may be omitted on "neutral jumpers" less than 8" in length.
- e. Wire labels for lighting and receptacle circuits shall consist of the panel board and circuit number and a unique node number. (I.E. LP#3-A, LP#3-B, LP#3-N) Wire labels for lighting and receptacle circuits are not origination/destination.

2.03 ELECTRICAL TAPE / SHRINKABLE INSULATORS

- A. Vinyl tape shall be 7 mil, 600 volt rated, flame retardant, hot and cold weather resistant conforming to UL510. Provide 3M Scotch Super 33+ vinyl tape or equal
1. Vinyl tape for color coding shall be 7 mil, 3/4" width, vinyl tape conforming to UL 510. Provide 3M Scotch 35 vinyl tape or equal.
- B. Rubber Tape: EPR rubber, 90 deg C continuous rated. Provide 3M 130C rubber tape or equal.
- C. Varnished Cambric Tape: Adhesive backed, 7 mil, bias cut cotton tape, coated with yellow insulating varnish. Provide 3M Scotch 2510 or equal.
- D. Shrinkable insulators shall be heat shrinkable, polyolefin thick wall sleeves, end caps and cable repair sleeves are designed for use in splicing, sealing and re-jacketing of direct bury secondary cables. The insulators shall comply with

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UL 486D and be rated up to 1000 Volts. They shall provide long-term reliable performance overhead, underground or submerged with mechanical and environmental protection. Shrinkable insulators shall be 3M ITCSN or 3M IMCSN per manufacturer instructions for the application or equal.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].
- B. Perform work to remedy non-compliant installations after inspection.
- C. Upon notification, stop work on any portion of the installation that is determined to be substandard or being installed by unqualified personnel.

3.02 FABRICATION AND INSTALLATION

- A. System:
 - 1. Install all products specified in Electrical Specifications [Electrical General, Installation].
 - 2. Panels shall be completely factory wired and tested before shipment.
 - 3. All spare PLC input / output points shall be wired to terminal blocks.
 - 4. A minimum of 20% spare unwired terminals shall be provided in each panel.
- B. Wiring Methods:
 - 1. Wiring Separation: Wires carrying 100 volts and above shall be physically separated from lower voltage wiring by using separate bundles or wire ways with sufficient distance to minimize the introduction of noise, crossing only at 90 degree angles.
 - 2. Harness: All wiring shall be neatly bundled and laced with plastic tie-wraps, anchored in place by screw attached retainer. Where space is available, wiring shall be run in slotted plastic wireways with dust covers. Wireways shall be sized such that the wire fill does not exceed 60%. Tie-wraps shall be T&B TY-RAP or equal.
 - 3. Retainers: Wireways, retainers, and other devices shall be screw mounted with round-head 316 stainless steel screws or mechanically mounted by push-in or snap-in attachments. Glue or sticky back attachment of any type or style shall not be used. Retainers shall be T&B TC series or equal.
 - 4. Hinge Loops: Where wiring crosses hinged surfaces, provide a "U" shaped hinge loop protected by clear nylon spiral wrap. The hinge loop shall be of sufficient length to permit opening and closing the door without stressing any of the terminations or connections. Spiral wrap shall be Graybar T25N or equal.

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5. Routing: Wires and cable shall be routed such as to maintain separation between 100 Volt or higher from 100 volt or lower wiring being run in the same duct or bundle. Wires and cables shall have sufficient length to allow slack and to avoid any strain or tension in the wire or cable.
 - a. Wires shall be routed in slotted plastic wireways with snap covers. Wires carrying 120 VAC shall be separated as much as possible from other wires and signal cables, and shall be routed only in ducts for 120 VAC. If the power wiring has to cross the signal wiring, the crossing shall be as close to a right angle as possible. Wireways for 24 VDC wiring shall be used for all other wires and cables. Routing of 120 VAC in combined wireways shall be minimized. Wires and cables shall be placed in the wireways in a straight, neat and organized fashion and shall not be kinked, tangled or twisted together. Additional wire ducting shall be provided for use by the electrical subcontractor for routing field wires to their landing points in the each electrical and instrumentation panel.
 - b. Provide 2" minimum separation between wireway and terminal blocks.
 - c. Wiring not routed in wireways shall be neatly bundled, treed, and laced with plastic ties.

C. Wire Terminations

1. Single wire and cable conductors shall be terminated according to the requirements of the terminal device as follows:
 - a. Crimp-on terminals: shall be UL listed, self-insulating sleeve type, with ring or rectangular type tongue, suitable for the size and material of the wire to be terminated, and for use with either solid or stranded conductors.
 - b. Terminal Blocks: Remove the last +/- 0.25 inches insulation from of the conductor and insert it under the pressure plate to full length of the bare portion of the conductor. Tighten the screw to close the pressure plate onto the conductor. No more than two conductors shall be installed in a single terminal. All strands of the conductor shall be captured under the pressure plate.
 - c. Screw-less terminals: wire shall be stripped back and inserted per the terminal manufacturer's instructions.
 - d. Motors with pigtail leads: Install unmounted power terminal blocks on the motor pigtails and the cable(s) to be connected. Terminals shall be non-insulated set screw type applied with an allen wrench. Only one wire allowed per terminal. Install plugs in unused terminal spaces.

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2. When stripping insulation from conductors, do not score or damage conductor.
3. The drain wire and stripped end of outer jacket of shielded cables shall be covered with heat shrink insulating tubing. The drain wire shall be covered along its full bare length between the cable jacket cover and the terminal lug and placed on end outer jacket to cover foil.
4. Condulets with wire nut connections shall be supplied for wire termination to devices with leads instead of terminals (i.e. solenoid valves, level probe, etc.).

D. Wire Splicing

1. No wires shall be spliced without prior approval.
2. Where splices are allowed or approved they shall conform to the following:
 - a. Wire splicing devices shall be sized according to manufacturer's recommendations.
 - b. Splices of #10 and smaller, including fixture taps, shall be made with nylon self-insulated twist on wire nuts; T & B "Piggys", Ideal "Wing-Nut" or equal.
 - c. Splices of #8 and larger shall be hex key screw, two way connectors, insulated with molded high-dielectric strength plastic; NSI Polaris IPL or IPLD Series terminal blocks or equal.
 - d. Non-Motor Splices #6 and smaller in underground pullboxes shall have wire-nut connections which are sealed with non-hardening silicone based sealant that protects the connection from moisture and corrosion. The wire nuts shall be factory filled with sealant and UL listed for waterproof connections. Provide Ideal Model 60 or equal.
 - e. Non-Motor Splices #4 and larger in underground pullboxes shall have double hex crimp barrel connections applied with adhesive/sealant filled heat shrinkable rubber insulation applied over the exposed connection. The cross-linked polyolefin shrink tube shall extend 4" on each side of the exposed connection minimum. Heat shrink tubing shall be 3M ITCSN or equal.
 - f. Motor lead Splices in underground pullboxes shall have terminal connectors on the motor leads and the cable to be connected. Terminals shall be non-insulated crimp-on type applied with a ratchet-type crimping tool. The terminals shall be bolted together with a nut, bolt and lock washer combination. The connection shall be wrapped with four (4) layers varnished cambric tape, six (6) layers of rubber tape and six (6) layers of vinyl electrical tape, each half lapped. Seal the connection with epoxy resin coating.

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E. Wire Installation

1. Exercise care in pulling wires and cables into conduit or wireways so as to avoid kinking, stressing the cables, or damaging the insulation. Use a UL listed pulling compound for lubrication within conduits as necessary. The raceway construction shall be complete and protected from weather before cable is pulled in. Swab conduits before installing cables and exercise care in pulling, to avoid damage to the insulation or conductors.
2. All wire and cables (with the exception of coaxial antenna cable) shall be installed within UL listed raceways or enclosures. Install all wires and cables in one continuous length unless splices are per contract drawings, required to connect equipment or submitted and favorably reviewed.
3. Bundle incoming wire and cables in panels. Zip-tie at intervals of 2" and neatly spread into trees and connect to their respective terminals. Allow sufficient slack in cables for alterations in terminal connections. Do not bundle, tape or tie wires within conduits.

3.03 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

END OF SECTION

SECTION 16210

ENGINE GENERATOR

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. These specifications describe the minimum requirements for a STANDBY duty three phase engine driven generator. The "Generator Data Sheet" at the end of this specification lists the minimum sizing for the generator and accessories. A larger generator shall be supplied when necessary to meet the requirements of this section. The Contractor shall complete this form with proposed generator values and include it with the generator submittal.
- B. The generator shall be provided as described in the following specification and as shown on the Contract drawings, herein designated as the design documents. The generator shall comply with all applicable sections of NFPA 30, 37, 70, 72 and 110, California Fire Code Articles 79 and 80 as well as State Statutes.
- C. The equipment furnished under these specifications shall meet the requirements of NEC Article 702, "Optional Standby Systems" and any other applicable articles of the NEC.
- D. The system shall meet the requirements of NFPA 704 Hazard Identification System Diamond indicating the hazards associated with the fuel being stored.
- E. The generator shall be delivered as a skid mounted unit, completely assembled to the extent possible and factory tested.
- F. Only new models in current production by a U.S. firm that meet the requirements of these specifications and which are cataloged by the manufacturer and for which manufacturer's published literature and printed specifications are currently available, will be considered. Special options may be included only when recommended by the manufacturer of the unit approved.
- G. All equipment/options are to be factory installed. If the equipment/options are not available factory installed, dealer installed equipment/accessories may be acceptable. The bidder is to specify those items which will be dealer installed in the submitted bid document.
- H. The manufacturer's local representative shall be an authorized distributor who maintains a stock of spare parts for the supplied generator and has a service facility with factory-trained service personnel. The manufacturer's local representative shall be located within a radius of 200 miles of the project.
- I. The Contractor shall perform complete startup, training and testing services for the generator per Electrical Specifications [Factory and Field Testing] and as detailed herein.
- J. Generator system shall be EPA Certified and meet all current Local, State and

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Federal air emissions requirements at time and location of installation.

- K. Generator system shall be coordinated and compliant with all current Local and State building and Fire Protection codes and requirements at time and location of installation. Furnish alarms, signage, fuel containment, shutdowns, and other devices and systems as required.
- L. The Contractor shall supply the generator, labor, testing and associated documentation as specified herein. This document describes the materials and intended operation, but does not necessarily describe all devices necessary for a functional system. All components and devices shall be furnished and installed as required to provide a complete, operable and reliable system for accomplishing the functions and meeting the performance set forth hereinafter.
- M. The generator scope of work includes:
 - 1. Engine driven electric generator
 - 2. Remote fuel tank with fuel pump.
 - a. Generator supplier has fuel system responsibility for safe and functional system.
 - b. Fuel line piping meeting local code requirements and drawings.
 - 3. Sub-base fuel tank with fuel pump and associated piping.
 - 4. Battery charger (120 VAC operated) mounted to generator frame.
 - 5. Weatherproof housing.
 - 6. Sound attenuating housing.
 - 7. Noise attenuating system.
 - 8. All auxiliary apparatus and accessories shall be provided as required for a fully functional generator and to meet local code requirements.
 - 9. Install a steel reinforced concrete pad, adequately sized to support the specified generator and fuel tank.
 - 10. All piping associated with exhaust system.
 - 11. Trenching, back filling, compaction and paving of each underground conduit route and fuel line piping.
 - 12. Field installation, startup, testing and training for the generator and associated equipment as part of this scope of work.
 - 13. Fuel for use during testing and full tank top off upon testing acceptance.

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Project Drawings
- C. The following manufacturing and installation standards apply to this section:
 - 1. ASTM International (ASTM): A335/A335M, Specification for Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service.
 - 2. Best Available Control Technology Standards (BACT)
 - 3. Code of Federal Regulations (CRF): Title 40 Volume 18, Control of

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Emissions from New and In-Use Non-road Compression-Ignition Engines.

4. National Fire Protection Association (NFPA):

- a. 37, Installation and Use of Stationary Combustion Engines and Gas Turbines.
- b. 70, National Electric Code.
- c. 110, Emergency and Standby Power Systems.

5. SAE International (SAE): J1074, Engine Sound Level Measurement.

6. Underwriters Laboratories, Inc. (UL):

- a. 142, Steel Aboveground Tanks for Flammable and Combustible Liquids.
- b. 2085, Protected Aboveground Tanks for Flammable and Combustible Liquids.
- c. 508, Industrial Control Equipment.
- d. 1236, Battery Chargers for Charging Engine-Starter Batteries.
- e. 2200, Stationary Engine Generator.

- D. The bidder shall carefully examine the plans and specifications, and be familiar with the conditions of the location of installation.

1.03 QUALIFICATIONS

- A. Equipment manufacturers shall be represented by a company capable of servicing and testing the generator unit from a mobile service vehicle dispatched from within a 100 mile radius.

1.04 SUBMITTAL REQUIREMENTS

- A. Submit shop documents and drawings for approval in accordance with this subsection and as specified in Electrical Specifications [Electrical General, Submittal Requirements]. All non-relevant items not provided on this project shall be crossed-off or deleted from all submitted documents and drawings.
- B. Submit a specification compliance statement, describing differences between specified and proposed equipment. Note equipment provided specifically to meet local agency or authority having jurisdiction requirements.
- C. Complete "Generator Data Sheet" at the end of this section and submit this form with the generator submittal.
- D. Submit data sheets and catalog information detailing:
- 1. Engine:
 - a. Make and model.

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- b. Fuel type.
- c. Number of cylinders and cylinder arrangement.
- d. Bore and stroke.
- e. Compression ratio.
- f. Piston speed, Feet per Minute, at rated RPM.
- g. Cylinder head, piston, valve, and block material.
- h. Crankshaft material.
- i. Main bearings, quantity and type.
- j. Rated RPM and HP at rated RPM.
- k. Governor type.

2. Generator:

- a. Make and model.
- b. Generator full load electrical rating, KVA, KW, Voltage, Amperage, Frequency (Hz), # of Phases, # of Wires, Power Factor.
- c. Generator and Exciter type.
- d. Insulation material, class, and temperature rise.
- e. Bearings, quantity and type.
- f. Peak motor starting, KVA.
- g. Voltage regulator type and regulation % from no load to full load.
- h. Frequency regulator type and regulation %, from no-load to full load.
- i. One step load acceptance.
- j. Unbalanced load capability.
- k. Number of leads.
- l. Generator transient ($x'd$) and subtransient ($x''d$) reactance in per unit.
- m. Ambient temperature range.

3. Electrical

- a. Control and instrument panel.
- b. Generator main breaker.
- c. Batteries and battery charger.

4. Cooling System

- a. Maximum ambient temperature.
- b. Capacity (gallons).
- c. Coolant flow (gpm).
- d. Fan diameter (in).
- e. Fan HP requirement at rated RPM.

5. Accessories:

- a. Exhaust silencer, stack, and piping system.
- b. Fuel tank and piping system.
- c. Vibration isolation system.
- d. Block Heater system.
- e. Weatherproof/Soundproof Housing as specified herein.

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- f. Paint Finish.
- E. Submit electrical schematics and wiring diagrams for:
 - 1. Generator control panel.
 - 2. Battery charging system.
 - 3. Main generator.
 - 4. Voltage regulator.
 - 5. Governing system.
 - 6. Generator main breaker.
- F. Submit dimension drawings for:
 - 1. Engine generator side, front, and top.
 - 2. Pad construction (minimum) size, anchor details.
 - 3. Enclosure (if required).
 - 4. Fuel tank and containment basin.
 - 5. Exhaust muffler and air intake baffle.
 - 6. Conduit stub-up areas under generator frame and/or sub-base fuel tank.
- G. Submit reports, calculations, and curves for:
 - 1. Generator sizing calculation (computer generated report acceptable) showing that the unit is sized adequately to start all loads as shown on Contract Drawings "Load Calculation" without exceeding the maximum voltage dip specified.
 - 2. Generator air emissions data, prototype or actual, suitable for submission to governing air quality management agency where generator is to be installed. Emissions data shall be for fuel type as required by local air quality agency.
 - 3. Sound level data showing that the complete generator package meets the sound level requirements stated herein.
 - 4. Engine generator fuel consumption data at 25%, 50%, 75% and 100% electrical loading.
 - 5. Proposed concrete pad dimensions, reinforcement method and isolation material (as necessary) for submitted generator.
 - 6. Seismic calculations for bolt down anchorage for seismic site class D. Calculation shall be signed by a California Registered Professional Structural Engineer. Generator installation shall meet applicable CBC or IBC requirements for stand-by power systems.
 - a. Calculations shall include calculations for wind loading on equipment to be mounted outdoors.
 - b. The Contractor shall submit a copy of the current ICBO anchor evaluation report for each type of anchor submitted.

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- c. The Contractor shall submit a copy of the concrete mix design to include the concrete design strength.
 - d. The Contractor shall submit Near Fault Vicinity and Location maps.
- H. Air Quality Management Applications and Permits
 - 1. The Contractor shall obtain the correct ATC application from the AQMD and preliminarily complete the application by inserting the project specific generator technical information. Submit preliminary partially completed application to the Engineer for use by the Owner in preparation of the final completed ATC application.
 - 2. The Contractor shall submit all generator specific information required to complete the ATC permit application. The Owner will not submit the application until all the information is received and the submittal receives a status of "make corrections noted" or "approved." Submit information in sufficient time for application processing and submittal review as to not delay project completion. The generator will not be considered approved until the ATC permit is obtained.
 - 3. The Owner shall complete and apply for the "Authority to Construct" (ATC) permit from the Air Quality Management District or Board with jurisdiction for this generator system. Fees for permit and application will be paid by the Owner. The Owner will submit the permit application within 14 days of submittal approval. Allocate 12 weeks for Owner to obtain ATC permit once application has been submitted.
 - 4. The Contractor shall confirm that the submitted generator meets all AQMD guidelines prior to submittal of the generator unit or preliminary application. Failure to do so will delay the ATC permitting and submittal approval.
- I. Descriptive literature shall be provided that describes the generator and all accessories. This literature shall provide sufficient detail to determine that the generator has all the accessories, options, features, and characteristics specified herein. Items that are not provided shall be neatly lined out.
- J. Deviations from the Contract documents shall not be incorporated into the work without prior written approval. A "Change Order" directive is required prior to incorporating any deviation from the Contract documents that has costs associated. The cost differential associated with this change order must be negotiated to amend the Contract to reflect the costs or savings.
- K. Exceptions to the Specifications or Drawings or equipment or procedures submitted as "equal" to specified equipment shall be clearly identified by the equipment supplier in a letter at the front of the submittal. Submittal data for "equal" equipment or procedures shall contain sufficient details so a proper evaluation may be made. The Contractor is responsible for verifying proper application/operation of substituted equipment.
- L. The Owner will not accept any ownership for material or equipment until the

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corresponding submittals have been reviewed by the Owner and approved.

- M. Submit complete and specific information with regard to equipment representatives and service facilities.

1.05 OPERATION AND MAINTENANCE INFORMATION

- A. Provide six (6) sets of operating, maintenance & parts instructions in original manuals (no copies allowed).

PART 2: PRODUCTS

2.01 QUALITY

- A. The generator shall be as manufactured by Caterpillar, Cummins, Generac, Kohler or equal with accessories as defined herein.
- B. The equipment supplied and installed shall meet the requirements of the National Fire Protection Association (NFPA 70 and NFPA 110) and all applicable local codes and regulations.
- C. The generator system shall be designed as a "black start" unit capable of starting and operating without any external power.
- D. Provide all of the features, options, and accessories specified herein and shown on the design drawings. Finished equipment shall be complete and site tested as an installed unit with all accessories functioning.
- E. All rotating parts shall have guards to protect against accidental contact in accordance with Federal OSHA and Cal-OSHA requirements.

2.02 RATING

- A. The engine generator shall have a minimum continuous standby rating as listed in "Generator Data Sheet" at the end of this section. Standby rated shall mean that generator starts within 60 seconds upon being called and operates continuously for the total duration of the generator call or fuel supply. Rating of the generator shall be based on operation when equipped with all necessary operating accessories such as radiator, fan, air cleaners, lubricating oil pump, governor, exhaust silencer, etc.
- B. No derating from the ratings specified shall occur for ambient temperatures below 122°F or installation elevation below 1,000 feet.
- C. The generator will be installed at approximately 1000 feet above sea level. The generator shall operate as specified at ambient temperatures between 0 degrees Fahrenheit and 122 degrees Fahrenheit.
- D. The engine/generator shall accept 100% of its nameplate rating at 0.8 PF in one step, in compliance with NFPA 110, Paragraph 5-13.2.6.
- E. The generator shall be capable of successfully providing three phase, four wire, 60 hertz power to start and continuously operate at the specified KW

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rating and below for loads shown in the drawing and/or with power factors between 0.5 lag to 0.9 lead. It shall be capable of operating in noisy electrical environments that are typical of variable frequency drive motor loads. The nominal voltage and maximum step voltage dip shall be per the "Generator Data Sheet," as measured line to line at the generator terminals, during start of any of the station loads.

- F. Generator set mean time between failures shall be a minimum of 5,000 hours.

2.03 ENGINE

- A. The engine shall be a turbocharged compression ignition engine type, water cooled, four cycle, with vertical inline or V-type cylinders and an overhead valve configuration.
- B. The engine shall utilize only NO. 2 diesel fuel. Generator shall operate per manufacturer's specifications using fuel approved by local air quality authorities.
- C. The engine shall be of direct injection design, i.e. pre-combustion chambers shall not be incorporated in the cylinder heads. Glow plugs shall not be used for engine starting.
- D. The engine shall have sufficient power to produce the specified ratings when operating with all accessories including exhaust, fuel, cooling, and battery charging systems, etc.
- E. The engine shall be equipped with:
 - 1. Engine driven or electric fuel transfer pump, fuel filters, and electric fuel shutoff valve. The fuel transfer pump shall be capable of lifting the fuel from the sub-base fuel tank. Primary and secondary fuel filters shall be provided. The fuel filters shall be replaceable and conveniently located for servicing.
 - 2. Electrical governor; consisting of a magnetic pickup speed sensor, adjustable electronic control, and an electrical actuator mounted integrally with the fuel pump. The governor shall provide automatic engine generator set frequency regulation adjustable from isochronous to 5% droop. Governors using external throttle linkages are not acceptable.
 - 3. An electric starting system complete with batteries, battery charger, battery rack, connector cables, and any other equipment required to start the standby generator. The starting system shall not require an auxiliary AC power supply to start, fully load, and operate the standby generator. The batteries shall be sized to provide five starts with 30 seconds cranking for each start attempt. The battery charger shall be sized to fully recharge the batteries within 12 hours. If required to maintain the above criteria, an electrical heat pad for the batteries shall be provided to keep the batteries in a ready state at the specified minimum ambient temperature. The charger shall be furnished with

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charger trouble alarm and an automatic equalize timer for fast recharge. The charger shall alarm on loss of power and cause a generator common alarm output.

4. Positive engagement solenoid shift-starting electric starter with DC voltage as listed in "Generator Data Sheet."
5. Battery charging alternator with a minimum ampere output as listed in "Generator Data Sheet."
6. Positive displacement, full pressure lubrication oil pump, cartridge oil filters, dipstick, and oil drain. The oil pump shall be capable of supplying adequate lubricating oil under pressure to the main bearings, crankshaft bearings, pistons, piston pins, timing gears, camshaft bearings, and valve rocker mechanism. The cartridge oil filters shall be full flow type, conveniently located for servicing. Filters shall be equipped with a spring loaded bypass valve to ensure oil circulation if filters are clogged.
7. An electric DC motor-driven pre-lube oil pump shall be provided if required by the engine manufacturer's design for "black start" of the standby generator.
8. Dry type replaceable air cleaner elements. The dry-type air cleaner shall be equipped with a self-cleaning dust and water evacuator and a vacuum restriction gauge to indicate maximum allowable restriction of the air cleaner system according to the engine manufacturer's recommendations. The air cleaner elements shall be conveniently located for servicing. Unit mounted radiator, blower fan, water pump, and thermostat. The radiator with blower type fan shall be sized to maintain safe operation at 122° F ambient temperature. The engine cooling system shall be filled with a solution of 50/50 ethylene glycol/water antifreeze or equivalent as recommended by the manufacturer.
9. Replaceable type cylinder liners.
10. Replaceable insert main bearings.

2.04 GENERATOR

- A. The generator shall be a synchronous wye-connected generator designed for direct connection to the engine. It shall be salient-pole, brushless, 12-lead reconnectable, self-ventilated, drip-proof construction, with amortisseur rotor or damper windings and skewed stator for smooth voltage waveform. The unit shall conform to the applicable standards for synchronous generators, salient pole type.
- B. The generator shall have the following features:
 1. Temperature rise of the rotor and stator shall be limited to 125° C for the specified KW and KVA ratings.

2. Steady state voltage regulation from no load to full load within +/- 0.25% for electronic governors, +/- 0.8% for mechanical governors.
 3. Steady state regulation from no load to full load within +/- 0.25%.
 4. The insulation material shall meet the NEMA standard (MG1-22.40 and 16.40) for class H and be vacuum impregnated with epoxy varnish to be fungus resistant per MIL I-24092.
 5. The excitation system shall be of brushless construction controlled by a solid state voltage regulator with adjustable volts-per-hertz operation capable of maintaining voltage within +/- 2% at any constant load from 0 to 100% of rating. The regulator isolated from the load to prevent tracking when connected to SCR loads. The regulator shall be protected from the environment by conformal coating and provide individual adjustments for voltage range, stability and volts-per-hertz operations. Provide permanent magnet (PM) excitation for generators above 150KW or AREP excitation for generators smaller than 150KW.
 6. The generator shall have a single maintenance-free bearing and be connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.
 7. Radio interference suppression to meet the BS.800 and VDE Class G and N standards.
 8. Telephone interference factor of less than 50 per NEMA MG1-22.43.
 9. AC voltage waveform total harmonic distortion of less than 5% total from no load to full load. Any individual harmonic shall have less than 3% THD.
- C. The generator shall be inherently capable of sustaining at least 300% of rated current for at least 10 seconds under a 3-phase symmetrical short circuit without the addition of separate current support devices.
- D. On starting each listed load, the instantaneous voltage dip shall not exceed that listed in "Generator Data Sheet" and shall recover to +/- 1% of rated voltage within one second.

2.05 CONTROLLER & INSTRUMENT PANEL

- A. Provide a generator-set mounted controller & instrument panel. The controller top shall be mounted no higher than 6 feet above finished grade. Controller mounting shall be vibration isolated from the rest of the engine / generator set.
- B. Emergency stop maintained pushbutton located at maximum 6 feet above grade.
- C. Remote mounted emergency stop glass covered pull switch located as shown in the drawings at maximum 54 inches above grade.

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D. Controller Features

1. All solid state construction, except for interface relays. The controller shall utilize a microcomputer based logic with a ROM based control algorithm. Circuit boards shall be coated to protect from environmental damage.
 2. Graphical display with preconfigured screens for parameter and alarm viewing and setpoint changes.
 3. Voltage, current and power metering, engine and generator parameter viewing.
 4. Real time clock for time stamping of diagnostic events and maintenance reminders.
 5. Non-volatile memory for setpoint storage through power failures.
 6. Security through password access.
 7. Control of generator output circuit breaker for generator protection and synchronizing functions.
 - a. Paralleling functions to including automatic and manual synchronizing, dead bus arbitration, load sharing, and load sense/load demand.
 - b. Protective relaying functions – phase sequence, over/under voltage, over/under frequency, reverse power, overcurrent, current balance.
 8. Communications to SCADA systems through included Ethernet Modbus TCP port.
- E. Control circuitry shall be of plug-in design for quick replacement. The controller shall be equipped to accept a plug-in device capable of allowing maintenance personnel to test controller performance without operating the engine. The controller shall be capable of operation from –40°C to 85°C.
- F. Input circuitry from fuel tank devices such as fuel level switches and level transmitters, shall be designed to be suitable for the application and consist of current limiting circuitry and/or non-sparking devices.
- G. Control must meet NFPA-110 Level 1 requirements (2005 version) and meet NFPA-70.
- H. The panel display shall include as a minimum:
1. AC voltmeter.
 2. AC ammeter.
 3. Frequency meter.
 4. Water temperature gauge.
 5. Oil pressure gauge.

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6. Battery voltmeter gauge.
7. Engine running time meter (non-resettable)
8. Voltage adjustment.
9. Pre-alarms:
 - a. Auxiliary fault.
 - b. Battery Charger Fault.
 - c. Fuel low level/pressure.
 - d. Low oil pressure.
 - e. Low engine temperature
 - f. High engine temperature.
 - g. High battery voltage
 - h. Low battery voltage
 - i. Fuel leak alarm
10. Engine shutdowns:
 - a. Auxiliary Shutdown.
 - b. Emergency Stop.
 - c. Low coolant level
 - d. Overcrank.
 - e. Overspeed.
 - f. Low oil pressure.
 - g. Low fuel level.
 - h. High engine temperature.
11. Audible Alarm:
 - a. Generator switch not-in-auto.
12. Functions:
 - a. Three position (RUN-OFF-AUTO) function: In the RUN position the engine shall start and run regardless of the position of the remote starting contact. In the AUTO position, the engine shall start when contacts in the remote control circuit close and stop five minutes after those contacts open following the engine cooldown sequence. In the OFF position the engine shall not start even though the remote start contact closes. This position shall also shutdown engine immediately.
- I. Wiring – The manufacturer shall furnish, install at the factory, and test all wiring required between devices mounted within or on the standby generator unit base. All wiring shall be neatly and carefully installed in wiring gutters, wire looms, or raceway. All power supply circuits shall be provided with suitable isolation/electrical protection means consisting of either fuses or circuit breakers. All internal wiring shall be marked at both ends of the conductor.
- J. Operation:
 1. Two-wire generator start/stop control from an automatic transfer switch (normal start and stop with cooldown) and from a remote

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emergency stop (immediate stop with fuel shutoff).

2. Engine starter control for:
 - a. Cranking cyler with 15 second ON and OFF cranking periods or as recommended by the manufacturer. Cranking shall cease upon engine starting and running.
 - b. Two methods of cranking termination shall be provided:
 - 1) After three 15 second cranking cycles.
 - 2) After 75 seconds if the engine fails to start or as recommended by the manufacturer
 - 3) Each condition shall lockout the engine, and visually indicate an overcrank alarm.
 - c. Starting system shall be designed for restarting in event of a false engine start. It shall permit the engine to completely stop rotating before reengaging the starter.
3. Provide wiring circuitry and sensing devices as required for emergency shutdown of the engine on any occurrence of the following conditions.
 - a. Low coolant level.
 - b. Over speed.
 - c. Over-crank.
 - d. High engine temperature.
 - e. Low oil pressure.
 - f. Low fuel
 - g. Emergency stop
 - h. Auxiliary shutdown
 - i. High enclosure temp (360 °F)
 - 1) Temperature switch shall be roof or ceiling mounted above engine air intake and connected via ½" EMT conduit to control panel. Provide Fenwal Detect-a-Fire model 12-X27121-000.
4. Engine cool down timer factory set at five (5) minutes to permit unloaded running of the generator set after the call to operate is dropped.
5. Programmable I/O contacts to be provided and brought out to terminals for connection to remote monitoring equipment:
 - a. A common alarm dry contact, normally open which closes on any alarm condition.
 - b. A generator running dry contact, normally open which closes when the engine is running.
 - c. A generator in cool-down dry contact, normally open which closes when the engine is running but opens when the engine enters cool-down.
 - d. Low fuel level dry contact, normally open which closes on low fuel alarm condition.

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- e. Auto switch position dry contact that closes when the three position (RUN-OFF-AUTO) selector switch is in the "AUTO" switch position.
- f. Remote emergency shutdown from normally closed switch.

2.06 ACCESSORIES

- A. Engine block heater. Thermostatically controlled and sized to maintain manufacturers recommended engine coolant temperature to meet the start-up requirements of NFPA-99 and NFPA-110, Level 1. Wattage and voltage shall be per "Generator Data Sheet."
- B. Exhaust System:
 - 1. The complete exhaust system (silencer, stack, and exhaust piping) shall be sized to ensure that exhaust back pressure falls within the manufacturer's minimum and maximum limitations under all operating conditions.
 - 2. Exhaust Silencer: Provide exhaust silencer including flexible piping & fittings properly sized and installed according to the manufacturer's requirements. The silencer shall be critical type (30dB attenuation minimum) and coated to be temperature and rust resistant. The flexible connector section(s) shall be seamless, stainless steel and the ends shall be pipe thread (2" maximum) or SAE flanged. Support for exhaust silencer shall be from overhead or side supports or as shown and shall not be carried by the exhaust manifold.
 - 3. Exhaust Stack and Piping: Provide thin-gauge steel pipes with flange connections, high temperature gaskets, elbows and straight runs to complete the exhaust system. The exhaust system shall extend vertically above roof to direct exhaust and heat away from building or enclosure or as shown on the drawings. Provide wall thimble and roof penetrations designed for high heat applications and a gravity actuated steel rain cap at end of exhaust pipe. Exhaust system shall be supported from side or above utilizing galvanized steel channel trapeze hangars, gusseted wall brackets or custom welded brackets per manufacturer's recommendations to meet the specified seismic design conditions. Design system to accommodate engine vibration and not loosen or break exhaust system mounts.
 - 4. Provide threaded welded half coupling on exhaust piping, 3/4" copper drop pipe and ball valve to drain condensate from muffler and exhaust stack. Mount piping on wall with channel supports. Drain outlet shall be plumbed down the nearest wall such that a 5 gallon bucket may be slid beneath to catch discharge. Exhaust piping and muffler shall be sloped 2% such that drains are at the low points.
 - 5. Insulation system: The non-outdoor portion of the exhaust pipe, stack and silencer shall be covered with fiberglass insulation and soft outer cover. The outer cover shall be constructed of heat and fire resistant canvas material with snap buttons.

C. Vibration Isolation

1. Engine Generator: Vibration isolation dampeners between the engine and steel mounting skid.
2. Exhaust Silencer: Mount with vibration isolators and/or flexible exhaust piping.
3. Enclosures shall be mounted with vibration isolators and/or steel structural stiffeners to minimize added noise due to vibration.
4. The generator shall have provisions for shipping/transit such that expected shocks will not damage the vibration isolators or generator.

D. Remote Fuel Tank:

1. Fuel tanks shall be sized to provide fuel for a minimum run time in hours at full load or gallons as listed in "Generator Data Form."
2. The remote fuel tank shall be listed under UL 142, for above ground steel tanks for flammable and combustible liquids, and UL 2085, furnace fire tests. The tank will be labeled with UL Approvals according to their particular classification.
3. The fuel tank shall meet all local safety and code requirements for secondary containment, leak monitoring, and spill protection. Provide any required information to aid in the permitting process. All necessary information shall be included in the submittal to avoid delays in project completion.
4. Fuel tank shall include accessories including, emergency vent, pressure/vacuum vent, Fill adaptor and cap, test wellcap and adaptor, gauge stick, fill limiter, decal package for tank size and product, and any specialized pipe fittings and caps to accommodate generator service.
5. The fuel tank construction shall have the following features:
 - a. Primary tank constructed of 1/8" (min) sheet steel with continuous welds on all exterior seams. Rectangular in shape and top penetrations only. The outer surface of the primary steel tank shall be covered by a minimum of 1/4" thick insulation panels. Exposed metal shall be powder coated to prevent corrosion.
 - b. Secondary containment shall consist of 30 Mil thick High Density Polyethylene membrane enclosing the steel tank and insulation material.
 - c. The primary and secondary containment shall be encased in 6 inches of monolithic reinforced concrete, with minimum design strength of 4000 psi at 28 days. Concrete encasement shall not have seams. The concrete exterior shall be painted with

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two-part water based epoxy paint.

- d. 5-15 gallon spill containment around fill port with normally closed valve to release spilled fuel into the primary steel tank. Provide rain cover for spill containment area.
 - e. 2" locking fill cap
 - f. Emergency vent system per NFPA 30. Provide vent extension to 12 ft (min) height or as required per local codes.
 - g. 30 year warranty by manufacturer.
 - h. Lugs for grounding per NEC 780.
 - i. 1" fuel suction and return connections (minimum). Provide normally closed solenoid shutoff valve at fuel tank outlet that will energize/de-energize with generator run command.
6. 1-1/4" mechanical fuel level gauge. Readout shall be fraction of full tank with indicators at 25%, 50%, 75%, 85%, 90%, and 100% full. Provide Krueger Sentry Gauge or equal.
7. Fuel Tank Control Panel
- a. Control panel shall monitor tank level, and provide alarm contact outputs for low level, low shutoff level, and high filling level. High alarm shall sound alarm horn on front of unit.
 - b. Control panel shall monitor leakage status from secondary containment tank.
 - c. Enclosure shall be suitable for outdoor installation on fuel tank in direct sunlight. Padlockable NEMA 4 or better. Provide sunshade as necessary.
 - d. 120 VAC with alarm follower relays for all alarms, 4-20ma output of tank level, and 0.5" LED display.
 - e. Push buttons for programming, mode, test, and others as required.
 - f. Shall include magnetostrictive level sensor to measure tank level with 0.1" accuracy.
 - g. Digital display shall show level in feet, gallons remaining, available room in gallons, and all setpoint alarm information.
 - h. Fuel tank control panel shall be Pneumercator TMS 2000 or equal.
8. Fuel level switches that are rated for use in fuel or fuel vapor atmosphere that are non-sparking. Switches shall actuate on a float

mechanism which operates a sealed switch for connection to the generator control panel. Provide the following independent or combination switches:

- a. High High (90% full) level audible alarm.
- b. High (85% full) level audible alarm.
- c. Low (25% full) level for low fuel alarm indication.
- d. Low Low (5% full) for low fuel engine shutdown and indication.
- e. Secondary Containment Leak for fuel tank leak alarm.

9. Seismic Restraint to comply with Seismic area requirements. Provide anchorage and seats for tank legs as required.

E. Batteries: Support tray with plastic battery enclosure, tie downs, battery cables, and 12-volt batteries all mounted to the engine/generator skid. The batteries shall be capable of delivering the cold-cranking amps required at zero degrees Fahrenheit per SAE Standard J-537.

F. Signage:

1. Signage shall be posted on the sides of the generator enclosure facing the main approaches to the system.
2. Provide an engraved placard with fuel filling procedure, tank capacity, fuel type, and maximum fill guidelines.
3. Provide signage 0.08" thick white painted/silk-screened aluminum with 1-1/2" red lettering to read "No Smoking". Signs shall be posted on all sides of generator enclosure.
4. Provide signage 4" x 6" x 0.08" white painted aluminum with red lettering to read "Generator Emergency Stop" for installation at a remote emergency stop switch as shown on the drawings.

G. Automatic Battery Charger suitable for continuous operation to maintain the battery charge voltage with no manual intervention. Battery charger features shall be as follows:

1. Solid state circuitry with charging modes as described to automatically recharge the starting batteries. When battery voltage drops below the specified value the battery charger shall operate at the high rate constant current mode until the battery voltage rises to the preset equalize level. The equalize mode will continue until the current required to maintain this voltage drops to 50% of the high rate level.
2. A current limiting circuitry to prevent charger overload under low battery voltage conditions. Provide minimum DC voltage and amp ratings (minimum) as listed in "Generator Data Sheet."
3. The battery charger shall provide temperature compensation of -2 mv/°C per cell over the ambient temperature of -40°C up to 60°C. This shall automatically adjust the "float" and "equalize" voltage settings to prevent the batteries from overcharging at high temperature and under charging at low ambient temperatures.

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4. The complete charger unit shall be U.L. listed.
 5. The charger shall be mounted to the engine/ generator skid. The charger shall be operational through an ambient temperature range of -40°F to 140°F. It shall include the following features:
 - a. Fused AC input and DC output overload & short circuit protection.
 - b. DC ammeter and voltmeter, 5% full scale accuracy, to indicate battery charging amps and volts.
 - c. "Power on" lamp to indicate when the charger is operating.
 - d. DC voltage regulation +/- 1% from no load to full load and over AC input line variations of +/- 10%.
 - e. Reverse polarity protection to prevent the charger from energizing outputs if improperly connected.
 - f. Current limiting. Current limiting circuitry shall be provided to prevent damage to the charger from being overloaded at low battery voltage such as occurs during short circuit conditions or during engine starter cranking.
 - g. The battery charger shall be powered from 120 VAC.
- H. Sound Attenuating Weatherproof Housing for the generator shall be as follows:
1. Manufactured from heavy-gauge aluminum or galvanized sheet steel and painted with the manufacturer's standard finish. Paint color shall be submitted to Owner for approval. Color choices shall include but not be limited to autumn white and beige. All surfaces shall be painted inside and out.
 2. The interior of housing shall have a heat resistant thermo-acoustic insulation system designed to meet sound attenuation requirements for the life of the generator. The placement, type, thickness and weight of the attenuator panels shall provide sound dampening to the specified level of allowable noise outside the generator. The air intake and exhaust shall have similar dampening and allow ample air flow for proper engine cooling, without having to remove side panels. The insulation shall be mechanically held against walls, ceiling and doors behind full sheets of perforated galvanized sheet steel. All insulation shall be covered with the exception of the exhaust piping.
 3. The enclosure shall house the engine, generator, control & instrument panel, battery charger, generator breaker, and all accessories.
 4. The radiator discharge shall be directed upwards through the use of a vertical duct mounted to the enclosure. The duct shall include drip holes to allow rain water to drain out the bottom.
 5. All exterior panels shall have lockable latches to prevent unauthorized entry.

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6. The specified exhaust silencer shall be mounted in or on the roof of the enclosure with vibration isolators.
7. Pressure drops through the enclosure openings shall not exceed limits set by the manufacturer of the generator.
8. The enclosure shall be free standing and anchored to the concrete pad (or trailer) supporting the engine generator. The enclosure may be mounted to the generator skid only if a skid mounted enclosure can meet the sound attenuation requirements specified.
9. The enclosure shall be designed so that sound levels measured at a 25 feet radius from any side of the enclosure (free field) and 5 feet above ground level, noise levels shall not exceed (Generator Data Sheet) dB with the engine generator running at full load and full speed inclusive of exhaust noise.

I. CIRCUIT BREAKER DISCONNECT

1. GENERAL

- a. Circuit breakers and motor circuit protectors shall be manufactured by Eaton Cutler-Hammer, Square D, G.E., Siemens, or equal.
- b. Sized by Generator manufacturer to meet UL standards, cabling requirements per plans, and "Generator Data Sheet."
- c. Multiple-pole circuit breakers shall be designed so that an overload on one pole automatically causes all poles to open. The use of tandem or dual circuit breakers in a normal single-pole space to provide the number of poles or spaces specified are not acceptable.
- d. Molded case circuit breakers shall be operated by a single toggle-type handle and shall have a quick-make, quick-break switching mechanism. An automatic trip of the breaker shall be clearly indicated by the handle position. Contacts shall be non-welding silver alloy and have flash reduction arc chutes. A push-to-trip button on the front of the circuit breaker shall provide a local manual means to exercise the trip mechanism.
- e. Minimum interrupting capacity:
 - 1) 480 volt circuit breaker shall have a minimum interrupting capacity of 42,000 amperes.
 - 2) 120 or 208 or 240 volt breaker shall have a minimum interrupting capacity of 22,000 amperes
- f. Circuit Breakers less than 400 volt and below 100-ampere trip or less shall have thermal-magnetic (TM) trip units and inverse time-current characteristics unless protecting full voltage or solid state reduced voltage motor starters, 15kva or larger transformer secondary, or as specifically shown on drawings.

- g. Circuit Breakers protecting full voltage or solid state reduced voltage motor starters shall be motor circuit protector (MCP) breakers with adjustable magnetic trip unless otherwise noted on the drawings.
- h. Circuit breakers shall be UL listed for series application.
- i. Where indicated circuit breakers shall be current limiting.
- j. Where indicated on drawings, provide UL listed circuit breakers for continuous duty at 100% of their ampere rating in the intended enclosure.

2. TRIP UNIT

- a. The trip unit shall be Eaton type Digitrip OPTIM 550 – Programmable or approved equal.
- b. Each circuit breaker microprocessor-based tripping system shall consist of three (3) current sensors, a trip unit and a flux-transfer shunt trip. The trip unit shall use microprocessor-based technology to provide the adjustable time-current protection functions. True RMS sensing circuit protection shall be achieved by analyzing the secondary current signals received from the circuit breaker current sensors and initiating trip signals to the circuit breaker trip actuators when predetermined trip levels and time-delay settings are reached.
- c. Interchangeable rating plugs shall establish the continuous trip ratings of each circuit breaker. Rating plugs shall be fixed-type. Rating plugs shall be interlocked so they are not interchangeable between frames, and interlocked such that a breaker cannot be closed and latched with the rating plug removed.
- d. System coordination shall be provided by the following microprocessor-based programmable time/current curve shaping adjustments:
 - 1) Protection - Fixed rating plug, interchangeable (In setting)
 - 2) Adjustable long delay pickup setting $0.4-1.0 \times I_n = I_r$
 - 3) Programmable long-time delay with selectable I^2t (2-24 seconds) and/or I^4t (1-5 seconds) curve shaping
 - 4) Programmable short-time settings, $150-800\% \times I_r$ in 1% increments, with $\pm 5\%$ band tolerance
 - 5) Programmable short-time delay, 100-500ms, with selectable flat or I^2t curve shaping
 - 6) Programmable instantaneous pickup settings, $200-800\% \times I_n$ in 1% increments
 - 7) Programmable ground fault pickup settings trip, 20-100% I_s , in 1% increments
 - 8) Programmable ground fault delay, 0-500ms, with selectable flat or I^2t curve shaping

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- e. The microprocessor-based trip unit shall have a powered/unpowered selectable thermal memory to provide protection against cumulative overheating should a number of overload conditions occur in quick succession.
- f. When the instantaneous setting has been deselected, a selectable discriminator circuit shall be provided to prevent the breaker being closed and latched on to a faulted circuit.
- g. Provide neutral ground fault sensor for four-wire loads.
- h. The trip unit shall have an information system that utilizes battery backed-up LEDs to indicate mode of trip following an automatic trip operation. The indication of the mode of trip shall be retained after an automatic trip. The LEDs shall be complemented by trip event information stored in non-volatile memory after a trip event. A trip reset button shall be provided to turn off the LED indication and reset the memory after an automatic trip. A test pushbutton shall energize an LED to indicate battery status.
- i. The microprocessor-based trip units shall be capable of monitoring the following data:
 - 1) Instantaneous value of phase, neutral and ground current
 - 2) Minimum and maximum current values
 - 3) Average demand current
 - 4) System diagnostic information such as alarms and cause of trip
 - 5) Approximate level of fault current that initiated an automatic trip operation
- j. The trip unit shall contain test capability. Testing shall be carried out by using a hand-held programmer, a breaker interface module or a remote computer to select the values of test current within a range of available settings. The basic protection functions shall not be affected during test operations. The breaker may be tested in either the "Trip" or "No Trip" test mode. Provide an auxiliary power module to allow the breaker trip unit to be tested with a 120-volt external power source.
- k. A hand-held programming unit shall be provided to set/change the network communication breaker address for each device, set the system baud rate, distribution frequency, display breaker information, and display monitored values. In addition, provide password protection for programming time/current set points and to perform functional testing of phase and ground trip characteristics. The programmer shall be self-powered by an internal battery. Provide as a minimum one (1) hand-held programming unit per assembly.
- l. The monitored data shall be displayed by a hand-held programmer, a breaker interface module or a remote computer.

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- m. Provide auxiliary position indication switch for closed and tripped, each with Form C contacts. Provide additional auxiliary switches, bell alarms, shunt trips, and undervoltage releases where indicated on the drawings.

J. Load Bank

1. The load bank shall be pad mounted and self contained.
2. Load bank shall be rated for minimum percentage of generator full load as defined in the Generator Data Sheet at 1.0 power factor. Acceptable KW total tolerance shall be not more than $\pm 5\%$ of nameplate full load, and $\pm 2\%$ phase to phase.
3. Load Bank Control Panel
 - a. Manual Mode load control loads the generator to value set by manual toggle switches whenever the generator is operating for routine exercise. The transfer switch shall be in normal position and generator is running but not in cool-down mode.. Load shall be applied to a running generator after a settable time delay.
 - b. Automatic Mode load control automatically adds and removes loads the generator as needed to maintain optimum loading of the generator to prevent "wet stacking". The transfer switch shall be in normal position and generator is running but not in cool-down mode. Load shall be applied to a running generator after a settable time delay.
 - c. Automatically disconnects load from the generator if the transfer switch is in the emergency position or if the generator is in its cool down mode.
 - d. Provide minimum six (6) load steps, with independent switches and indicator lights.
 - e. Automatic overheat thermostat to prevent damage.
 - f. Mounted in accessible location with generator in operation and no more than 72" above grade, inclusive of sub-base fuel tank.
 - g. Outdoor load bank control panels shall be NEMA 3R rated. Verify location of load bank control panel(s) with installation contractor.
4. The pad mounted load bank shall be Load-Tec Model OSM2, Avtron with optional control panel, or equal.

2.07 STAIR AND PLATFORM SYSTEM

A. General

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1. Non-skid walking surface shall be used for safety: steel pre-galvanized grip strut planking, 12 gauge thickness.
 2. Steel welding shall be in accordance with the ANSI/AWS D1.1-02 gas metal arc welding process and shall be performed by experienced operators.
 3. All exposed surfaces shall be smooth and free of sharp or jagged edges.
- B. Stairways
1. Stair treads, and stringers shall be designed for a uniform live load of 100 pounds per square foot and a concentrated vertical load of 300 pounds over an area of 4 square inches.
 2. Stair treads, stringers and risers shall be constructed using steel alloys for structural components.
 3. The walking surface of the stairs shall be steel pre galvanized grip strut planking slip resistant surface.
- C. Landings
1. Landings shall be designed for a uniform live load of 100 pounds per square foot and a concentrated vertical load of 300 pounds over an area of 4 square inches.
 2. Landings shall be level and have a dimension in the direction of travel not less than the width of the stairway. Landings shall be constructed using steel alloys for structural components.
 3. The walking surface of the landing shall be continuous, without gaps, shall be steel pre-galvanized grip strut planking slip resistant surface. Sizes shall be fabricated as required by local codes and/or for specific applications as indicated on drawings.
- D. Legs
1. The legs shall be designed to support the landing sections. The legs shall be designed so that they will be perpendicular to the ground and vertical loads are transmitted axially through them regardless of the slope. All legs shall have 6"x 6"x 1/4" anchor plate pads.
- E. The stair system shall be Amer-Fab, or equal.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. The construction methods specified herein shall be followed by the manufacturer of the generator. If the manufacturer fails to comply, the Contractor shall pay all costs required to make the changes to the equipment

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to conform to these construction methods.

- B. Screw type solderless terminals or lugs shall be provided for all field connected power cables, control and instrument wiring. All connections shall be accessible from a designated connection panel without removal of internal components.
- C. A terminal strip shall be provided for control and instrument wiring. Number all terminals with machine printed lettering.
- D. All internal and external control and instrument wiring shall have permanent identification at each point of connection. Wire identification shall be by machine printed numbered "shrink-tube" wiring sleeves. Internal wire numbers shall be per generator manufacturer's wiring diagram. External wire numbers shall be determined by the connected control panel(s).
- E. Control and instrument wiring shall be neatly bundled and secured in place with screw down anchors and plastic cable ties. Wiring shall be protected with plastic spiral wrap where it is subject to mechanical damage or crosses over to a hinged door.
- F. The generator and any accessories shall be a product of excellent workmanship and shall be free from any defects or imperfections that will affect their appearance or serviceability.
- G. The generator's neutral shall be grounded per generator manufacturer's installation instructions for 3 wire distribution systems.

3.02 INSTALLATION

- A. The generator shall not be delivered to the job site until the manufacturer's certified factory test report has been submitted, reviewed and accepted. A non-existent or non-reviewed certified factory test report shall be sufficient cause for the unit to be rejected.
- B. The Contractor shall remove rejected equipment immediately from the jobsite at his expense until the generator submittal and/or factory test report is approved.

3.03 FACTORY INSPECTION AND TESTS

- A. Factory or Factory Authorized Dealer shall be considered one in the same for the purposes of inspection, testing, service facility and herein after may be referred to as "factory" or "manufacturer."
- B. Factory Tests: Each generator to be supplied shall be tested by the manufacturer prior to shipment. All tests shall be made with all accessories installed. The factory tests shall be made under varying loads (30% to 100%) for a minimum of one hour total.

The factory testing shall include the following tests:

1. Single step load pickup.

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2. Transient and steady state governing.
 3. Safety shutdown device testing.
 4. Voltage regulation.
 5. Rated power.
 6. Maximum power.
 7. Test all generator control panel alarms, status lights & indicators.
 8. Test all remote connection status and alarm points (dry contacts).
 9. Simulate remote ATS start/stop of generator utilizing a wire jumper.
- C. A typewritten factory test report shall be provided which lists the factory tests performed. The results of the each test, name & phone number of person who performed the tests, date(s) when tests were performed, serial & part number of equipment tested, setting values, failures encountered, and repairs made during testing.

3.04 FIELD ASSISTANCE

- A. The Contractor shall take all precautions necessary to ensure the safety of all personnel during the tests. Absolutely no tests shall be run that could potentially cause injury or jeopardize personnel safety.
- B. The initial setup of each generator shall be performed by a factory-trained service person of the manufacturer's local representative. Fill the engine fuel, lubricants, and cooling system and make all preliminary tests and checks required before engine start-up the day prior to witness field testing.
- C. The Contractor shall be responsible for and pay the costs for the necessary fuel to fill each generator tank prior to the start of the field tests. The fuel shall include a fuel conditioner as recommended by the manufacturer.
- D. The Contractor shall pay for a factory-trained service representative to perform one (1) 8-hour day of field tests for each generator, beginning at 8:00 a.m. any weekday, except Friday.
1. Each failure mode, alarm, and control function shall be demonstrated to Owner by the Contractor's factory-trained service representative prior to performing any other field tests.
 2. The generator manufacturer representative shall furnish a temporary 1.0 PF load bank and connection cabling rated for a load equal to no less than 100 percent of the generator nameplate KW. The load bank shall be connected to the generator output terminals for a four (4) hour, full-load test. The Owner Representative shall be allowed to change loads during the tests to simulate normal operating conditions. The factory-trained service person shall be responsible for running the generator during the load tests. Any defects or failures discovered during these tests shall be corrected or adjusted by the factory-trained service person. The engine generator load test shall be restarted after each repair or adjustment that requires shutdown of the generator. The test shall be restarted as many times as necessary until the generator runs for four (4) continuous hours without shutdown or failure.

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3. The temporary load bank shall be set-up the day before testing. Under no circumstances shall the testing be allowed to extend beyond 5:30 p.m.
 4. All field tests shall be witnessed by Owner. Written notice shall be provided to the Owner Representative seven (7) days prior to the date for the field test.
- E. The Generator Field Checklist (GCL per Electrical Specifications [Factory and Field Testing]) shall be completed by the generator manufacturer representative prior to beginning of operational testing. The checklist shall be signed by the representative submitted prior to the start of operational load bank testing.
- F. The Generator Performance Test Report (GPT per Electrical Specifications [Factory and Field Testing].) shall be completed by the generator manufacturer representative during operational testing. The forms shall be signed by the representative and given to the Owner Representative prior to completion of operational load bank testing.
- G. The Generator Sound Level Data Form (GSLD Electrical Specifications [Factory and Field Testing]) shall be completed by the generator manufacturer representative during operational testing. The forms shall be signed by the representative and given to the Owner Representative prior to completion of operational load bank testing.
- H. Training
1. The local representative's factory-trained service person shall instruct in the proper operating and maintenance procedures for all components of the generator. This instruction shall be given for a minimum length of two (2) hours. The training shall cover "operation" and "maintenance". Training shall not begin until Operation and Maintenance manuals are approved and field tests have been completed.

3.05 WARRANTY

- A. The Generator System Supplier shall have a staff of experienced personnel available to provide service on two (2) working days notice during the warranty period. Such personnel shall be capable of fully testing and diagnosing the equipment delivered; and of implementing corrective measures.
- B. If the Generator System Supplier fails to respond in two (2) working days, the Owner at its option will proceed to have the warranty work completed by other resources; the total cost for these other resources shall be reimbursed in full by the Contractor. The use of other resources, as stated above, shall not change or relieve the Contractor from fulfilling the remainder of the warranty requirements.
- C. Prior to final acceptance, the Contractor shall furnish a listing of warranty information for all manufacturers of materials and equipment supplied under

the scope of work covered in these design documents. The listing shall include the following:

1. Manufacturer's name, service contact person, phone number, and address.
2. Material and equipment description, equipment number, part number, serial number, and model number.
3. Warranty expiration date.

D. Hardware support:

1. The Contractor shall provide warranty of all equipment for a period of one (1) year from date of final acceptance. Standard published warranties of equipment which exceed the preceding specified length of time shall be honored by the manufacturer.
2. The Contractor shall provide all labor and material to replace or repair any hardware that fails during the warranty period, at no additional cost to the Owner.

3.06 FINAL ACCEPTANCE

- A. Final acceptance will be given by the Owner after the equipment has been field tested satisfactorily, each deficiency has been corrected, documentation has been provided, and all the requirements of design documents have been fulfilled.
- B. At the end of the project, following the completion of the field tests, and prior to final acceptance, the Contractor shall provide the following to the Owner:
 1. Fuel tank top off. The Contractor shall supply up to one entire tank of fuel at the end of the project.
 2. Each "operation, maintenance and parts" manual shall be modified or supplemented by the Contractor to reflect all field changes and as-built conditions.
 3. Two sets of keys for all locks.

GENERATOR DATA SHEET

The following data sheet is a summary of generator required specifications. Not all specification requirements are listed below. The Contractor/Supplier shall return this page with the Submitted Value column completed. If submitted values are less than those listed in the Specification Minimum column, then the supplier shall explain reasons for the exception in cover letter.

Description	Specification Minimum	Units	Submitted Value	Units
Generator Continuous Output Power	1500	KW		KW
	1875	KVA		KVA
Three phase voltage (Nominal)	480	Volts AC		Volts AC
Continuous amperage at 0.8 power factor	2255	Amps AC		Amps AC
Power Frequency	60	Hz		Hz
Max voltage dip with specified motors	12	%		%
Reactance – Subtransient (X''d)	**	%		%
Reactance – Transient (X'd)	**	%		%
Reactance – Synchronous (Xd)	**	%		%
Engine horse power at rated KW	**	HP		HP
Engine RPM at rated power	1800	RPM		RPM
Engine Fuel Type	No. 2 Diesel	-		-
Engine aspiration (Normal/Turbo)	Turbo	-		-
System Voltage	**	Volts DC		Volts DC
Alternator output (at system voltage)	**	Amps DC		Amps DC
Battery charger output	10	Amps DC		Amps DC
Engine block heater power	**	W		W
Alternator condensation strip heater	**	W		W
Heater(s) voltage (1 phase)	208	Voltage		Voltage
Fuel tank capacity (hrs @ 100% load)	24	Hours		Hours
Type (Sub-base/Remote)	Remote	-		-
Main Breaker Maximum Rating	2500	Amps		Amps
Trip Features Per Spec	LSIG	-		-
Interrupt Rating	65	KAIC		KAIC
Load Bank (Pad Mounted)	Yes	of Gen FLA		
Load Bank Rating Percentage	50 %			
Enclosure type	75 dB Sound Attenuating			
(Sound Atten., Weatherproof, None)				

** Sized per manufacturer recommendations to meet intent of plans and specifications, codes, and environmental conditions at location of installation. Please highlight any deviations from drawings and specifications.

END OF SECTION

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SECTION 16250

AUTOMATIC TRANSFER SWITCH

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall supply the automatic transfer switch (ATS) as specified herein.
- B. The ATS scope of work includes:
 - 1. Providing and installing one automatic transfer switch of rating shown on Contract Drawings.
 - 2. Submittal data and drawings.
 - 3. Startup assistance.
 - 4. Factory and field testing.
 - 5. Operation and maintenance manuals.
 - 6. Warranty of all components.
- C. Startup and configuration of ATS with installed voltages and loads.
- D. As required under Electrical Specifications [Factory and Field Testing], furnish all required labor, materials, safety equipment, transportation, test equipment, incidentals and services to perform factory and/or field testing.

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Factory and Field Testing]
- C. Project Drawings

1.03 SUBMITTALS REQUIREMENTS

- A. Provide Submittals as specified in Electrical Specifications [Electrical General, Submittal Requirements].
- B. Include a record of each parameter available to be changed by the user. The list shall include factory defaults and space for entered values.

1.04 OPERATION AND MAINTENANCE INFORMATION

- A. Provide operation and maintenance information as specified in Electrical Specifications [Electrical General, Operating and Maintenance Information].
- B. Include a record of each ATS parameter setup during startup and testing and place a copy of setting in each O & M manual.

PART 2: PRODUCTS

2.01 AUTOMATIC TRANSFER SWITCH

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A. General:

1. The ATS shall be UL listed in accordance with UL 1008 and be labeled in accordance with that standard's 1½ and 3 cycle, long-time ratings. ATSs which are not tested and labeled with 1½ and 3 cycle (any breaker) ratings and have series, or specific breaker ratings only, are not acceptable.
2. The ATS shall be rated to close on and withstand 42,000 RMS symmetrical short circuit amperes at the ATS terminals or otherwise shown. Provide overcurrent protection as shown on the Contract drawings.
3. The ATS manufacturer shall be certified to ISO 9001 International Quality Standard and the manufacturer shall have third party certification verifying quality assurance in design/development, production, installation and servicing in accordance with ISO 9001.
4. ATS types utilizing components of molded-case circuit breakers, contactors, or parts thereof, are not acceptable.
5. The switch assembly shall be installed in a NEMA enclosure located as shown on Contract drawings.
6. The automatic transfer switch shall be an ASCO Model 7000, with options to meet specified requirements, or equal.

B. Switch Unit:

1. The transfer switch unit shall be electrically operated and mechanically held. The electrical operator shall be solenoid operated and only momentarily energized to minimize power consumption and heat generation.
2. The transfer switch shall feature a delayed transition mode. The switch shall remain in the neutral position (neither emergency nor normal) until the associated time delays have expired and allow the switch to complete the transfer.
3. The switch shall be 3 pole double-throw with inherently interlocked construction. A solid neutral shall be provided for all systems.
4. Wide contact gaps shall be provided to insure positive isolation of the normal and emergency power sources.
5. The switch shall be fully rated for amperage shown on Contract Drawings, for switching all types of loads including induction motors. The ratings shall apply to the voltage and mounting arrangement as shown in the drawings.
6. The main power contacts shall have silver alloy contact construction featuring a wiping action each time the switch is operated. Arc chutes shall be utilized to contain the inherent spark created when switching

under load.

7. The main contact design shall allow repeated making and breaking of rated full load current, with a combination of motor and other loads and without damage or undue wear to the contacts.
8. All main power contacts and auxiliary contacts shall be mechanically driven from a common actuator shaft.
9. The bus shall be constructed of silver plated copper.
10. Inspection of all contacts, linkages and moving parts shall be possible from the front of the switch without disassembly of operating linkages and without disconnection of power conductors.
11. All switch and relay contacts, coils, mechanical linkages, and control elements shall be serviceable or removable from the front of the mounted switch or accessory assembly without removal of the switch or assembly from the compartment and without disconnection of the power cables or control wiring.
12. The switch shall have a manual operating handle for maintenance purposes.
13. Compression screw type solder-less terminals or lugs shall be provided for connecting all external line & load power cables and control wiring. All connections shall be accessible from the front without removal of internal components.
14. A terminal strip shall be provided for terminating all control wiring. All terminals shall be numbered with machine printed lettering matching the wire number of the terminated wire.
15. All control wiring shall have permanent identification at each point of connection. Wire identification shall be by machine printed numbered wiring sleeves. Electrically common wires shall have the same wire number. Electrically different wiring shall have unique wire numbers.
16. Control wiring shall be neatly bundled and secured in place by plastic cable ties. Wiring shall be protected with plastic spiral wrap where it crosses over a hinge to the door.

C. ATS CONTROL PANEL

1. A control panel shall be provided to direct the operation of the transfer switch. The modules sensing and logic shall be controlled by a built-in microprocessor. Control panels that do not utilize microprocessor electronics to control the operation of the switch are not acceptable.
2. A four line, 20 character LCD display and keypad shall be an integral part of the controller for viewing all available data and setting desired operational parameters. Operational parameters shall also be

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available for viewing and limited control through the serial communications input port.

3. The controller shall be connected to the transfer switch by an interconnecting wiring harness. The harness shall include a keyed disconnect plug to enable the controller to be disconnected from the transfer switch for routine maintenance.
 - a. Sensing and control logic shall be provided on multi-layer printed circuit boards.
 - b. The panel shall be enclosed with a protective cover and be outer door or deadfront mounted such that it may be operated with the door closed for safety and ease of maintenance.
4. A single controller shall provide twelve selectable nominal voltages for maximum application flexibility and minimal spare part requirements. Voltage sensing shall be true RMS type and shall be accurate to $\pm 1\%$ of nominal voltage. Frequency sensing shall be accurate to $\pm 0.2\%$.
 - a. The under-voltage of each phase of the normal source shall be monitored, with pickup adjustable from 85% to 100% of nominal and the dropout adjustable from 75% to 98% of pickup setting, both in increments of 1%. These adjustments shall be factory set at 85% dropout, and 90% pickup.
 - b. The voltage of each phase of the emergency source shall be monitored, with pickup adjustable from 85% to 100% of nominal. This adjustment shall be factory set at 95% pickup.
 - c. Frequency sensing of the emergency source shall be provided, with pickup adjustable from 90% to 100% of nominal. This adjustment shall be factory set at 97% pickup.
 - d. The control panel shall meet or exceed the voltage surge withstand capability in accordance with IEEE Standard 472-1974 (ANSI C37.90a 1974) and the withstand voltage test in accordance with the proposed NEMA Standard ICS1-109.21.
5. The transfer switch control panel shall be capable of operating over a temperature range of -20 to +60 degrees C.
6. The transfer switch shall be provided with advanced in-phase algorithm which measures the frequency difference between the two sources and initiates transfer at appropriate phase angles to minimize disturbances from transferring motor loads.
7. The control panel shall include the following field adjustable time delays:
 - a. Time delay to override momentary normal source outages, adjustable from 0 to 5 minutes. This adjustment shall be field set to place emergency generator on-line in 1 minute.
 - b. Transfer to emergency time delay for controlled timing of load transfer to emergency, adjustable from 0 to 5 minutes. This adjustment shall be field set switch position in 5 seconds after power has stabilized.

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- c. Emergency source failure time delay to ignore momentary transients during initial generator set loading, adjustable from 0 to 6 seconds. Set at 2 seconds.
 - d. Retransfer to normal time delay, adjustable 0 to 60 minutes. This adjustment shall be factory set at 5 minutes. The time delay is automatically bypassed if the emergency source fails and normal source is acceptable.
 - e. Unloaded running time delay for emergency engine generator cooldown, adjustable from 0 to 60 minutes. This adjustment shall be factory set at 5 minutes.
 - f. Delayed transition time delay for setting the dead time when all power is removed from the load side of ATS, adjustable 0 to 5 minutes. Set at 1 minute.
 - g. Generator Exercise Timer: Timer provided for operator adjustment of day of week, time of day and run duration for exercising the generator under operating loads by activating the automatic transfer switch. . Timer shall be mounted on the ATS outer deadfront door.
 - h. The controller shall provide an integral engine exerciser. The timer shall be field set by the Contractor with date and time during training. The engine exerciser shall allow the user to program up to seven different exercise routines. For each routine, the user shall be able to:
 - 1) Enable or disable the routine.
 - 2) Enable or disable transfer of the load during routine.
 - 3) Set the start time of day, day of week, week of month, alternate or every time start, duration of run.
 - 4) At the end of the specified duration the switch shall transfer the load back to normal and run the generator for the specified cool down period. A 10-year life battery that supplies power to the real time clock in the event of a power loss will maintain all time and date information.
8. The controller shall commit-to-start engine which requires the engine to reach proper output and run at least the duration of the cooldown setting, regardless of whether the load is transferred.
9. Provide interface relays or main switch follower contacts to comply with I/O interface requirements as defined in the P&ID diagram. Interfacing relays shall be industrial grade plug-in type with dust covers. Interface connections shall be wired to backpan terminal blocks. At minimum, the switch shall have the following unused I/O contacts available:
- a. Switch in Normal – SPDT rated 10 amps, 120 VAC
 - b. Switch in Emergency – SPDT rated 10 amps, 120 VAC
 - c. Engine starting contact -- DPDT gold-flashed contacts rated 10 amps, 32 VDC
 - d. Emergency Power available – SPDT rated 10 amps, 120 VAC
 - e. Normal Power available – SPDT rated 10 amps, 120 VAC

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10. Terminals shall be provided for a remote contact which opens to signal the ATS to transfer to emergency and for remote contacts which open to inhibit transfer to emergency and/or retransfer to normal.
11. Communications – The controller shall include a communications module for interface to the PLC and SCADA. All settable parameters and instantaneous operational registers shall be accessible from the communications port.
 - a. Type
 - 1) Modbus TCP (Schneider Automation Standard)
 - b. Command and Metering registers to include:
 - 1) Switch position status normal or emergency
 - 2) Setpoints, timers, delays, voltage levels, etc.
 - 3) 3 phase voltage (normal and emergency)
 - 4) Normal and Emergency voltage available
 - 5) Fault conditions
 - 6) Test, load, no-load.
 - 7) Others as available.
12. Provide separate LED signal lights with nameplates indicating the following:
 - a. Utility power is available (green)
 - b. Generator power is available (red)
 - c. ATS is connected to Utility source (green)
 - d. ATS is connected to the Generator source (red)
 - e. ATS in neutral position (wht)
13. A three position momentary-type test switch shall be provided for the test / automatic / reset modes:
 - a. Test: simulate normal source failure
 - b. Automatic: normal operation
 - c. Reset: bypass the time delays on either transfer to emergency or retransfer to normal.
14. All adjustments shall be field adjustable without the use of tools, meters, power supplies, or special test equipment and can be made safely without personal exposure to live parts
15. Each adjustment resolution shall be settable within minimum increments of 1%.
16. Repetitive accuracy of timer, voltage and frequency settings over a temperature range of -20°C to 70°C shall be within $\pm 2\%$.
17. The control panel programming shall be lockable via password protection.
18. The wire harness for connection of the control panel to the transfer switch shall have sufficient length to reach between the mounting

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locations shown on the Contract drawings.

19. Provide the following displays on the controller:
 - a. Event log to display 99 logged events with the time and date of the event, event type and event reason.
 - b. Total number of ATS transfers.
 - c. Number of ATS transfers caused by power source failures.
 - d. Total number of days ATS has been in operation.
 - e. Total number of hours that the normal and emergency sources have been available.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].

3.02 FIELD ASSISTANCE

- A. Testing, checkout and start-up of the ATS equipment shall be performed under the technical direction of a factory trained authorized manufacturer representative.
 1. The setup and programming of the ATS shall be provided by a factory-trained representative who is authorized by the ATS manufacturer to perform the startup. This setup and programming shall be done prior to and during the first application of power.
 2. Provide testing as specified in Electrical Specifications [Factory and Field Testing].
- B. Provide 1 hour of "ATS Setup" Training on operating and maintenance procedures.

3.03 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

END OF SECTION

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SECTION 16430

LOW VOLTAGE SWITCHBOARD

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. This section applies to specific switchboards rated 600 volts and below.
- B. Provide Switchboard(s) (SWBD) as specified herein and shown on the drawings.
 - 1. The System Integrator shall perform and be responsible for procurement, submittals, shop drawings, interconnection drawings, factory testing, and all control wiring for the SWBD. System Integrator is defined in Electrical Specifications [Electrical General].
- C. All wiring, wire color codes, wire labeling and terminal blocks within SWBD shall be as specified in Electrical Specifications [Low Voltage Wire & Data Cable].
- D. The SWBD scope of work includes:
 - 1. Providing SWBD structure and all internal components.
 - 2. Installation of the SWBD on concrete pad per details.
 - 3. Submittal data and drawings.
 - 4. Startup and configuration of SWBD internal components.
 - 5. Factory and field testing.
 - 6. Operation and maintenance manuals.
 - 7. Warranty of all components.
 - 8. Seismic Anchorage Design Calculations and conforming installation.
 - 9. Conduit – support systems, wire, and grounding system, for equipment interconnection, and operation.
 - 10. System calibration, testing and documentation.
- E. Electrical Specifications [Factory and Field Testing]. Furnish all required labor, materials, safety equipment, transportation, test equipment, incidentals and services to perform factory and/or field testing.
- F. All electrical equipment and materials, and methods - including installation, calibration, and testing - shall conform to the applicable codes and standards listed in this and other Sections. All electrical materials and work shall conform to published standards of the National Electric Code (NEC), Institute of Electrical and Electronic Engineers (IEEE), and Underwriters Laboratories Inc (UL).

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Low Voltage Wire & Data Cable]
- C. Electrical Specifications [Automatic Transfer Switch]
- D. Electrical Specifications [Panelboard and Power Transformer]
- E. Electrical Specifications [Factory and Field Testing]

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1.03 SUBMITTALS REQUIREMENTS

- A. Provide Submittals as specified in Electrical Specifications [Electrical General, Submittal Requirements].
- B. Include a record of each configurable parameter available to be changed by the user for internal components. The list shall include factory defaults and space for entered values for each configurable component.

1.04 OPERATION AND MAINTENANCE INFORMATION

- A. Provide operation and maintenance instructions as specified in Electrical Specifications [Electrical General].

PART 2: PRODUCTS

2.01 SWITCHBOARD

- A. General:
 - 1. The Switchboard shall be Cutler Hammer, Square D or approved equal.
 - 2. The Switchboard (SWBD) shall be built and tested in accordance with:
 - a. NEMA Standards
 - b. ANSI
 - c. Underwriters Laboratories, Inc.
 - 3. Switchboard enclosure shall be NEMA rated as shown in the drawings.
- B. Metering Panel:
 - 1. Metering panel shall comply with Roseville Electric Standards.
 - 2. Provide metal enclosed, front accessible, self contained utility metering panel. Voltage, phase, AIC and continuous amperage rating shall be as shown on Contract Drawings. Panel will include meter socket, factory installed main breaker(s) and test by-pass facility.
 - 3. Design utility entrance and termination and other features per NEC, local codes, and serving Utility requirements.
 - 4. Enclosure shall be NEMA 3R construction for underground utility service. Enclosure shall be manufactured from galvanized 16 ga. (min) sheet steel. The enclosure shall be finished with ANSI 61 gray enamel paint. Provide pad mount, cabinet per installation detail.
 - 5. Utility metering switchboard shall be Cutler Hammer Pow-R-Line, Tesco Metering Switchboard or equal.
- C. Switchboard:
 - 1. Switchboard shall be front accessible with group mounted, buss

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connected circuit protective devices. Where provisions for future circuit protective devices are required, space for the device, corresponding vertical buss, device connectors and the necessary mounting hardware shall be supplied.

2. Distribution section shall meet all requirements per NEC, local codes, and as defined in the drawings.
3. Buss shall be copper. Aluminum buss is not equal to copper buss. Furnish buss mounted cable lugs sized for cabling that is required to be directly buss connected.
4. Buss shall, 3 phase, 4 wire, 480 volt, 65,000 AIC minimum symmetrical (or as shown otherwise in the drawings).
5. Power buss:
 - a. Continuous amperage rating at least equal to the main circuit breaker or the power source and shall be braced to withstand stresses resulting from the maximum short-circuit current available.
 - b. Horizontal bus shall extend through all sections of the switchgear unless shown otherwise in the drawings with vertical connections to circuit breakers in each section.
 - c. Buss shall be mounted on heavy-duty insulated glass polyester supports, and main bus joints shall be bolted using a minimum of two bolts.
 - d. Shipping splits and provisions for future bus extensions shall have tin-plated bolted connections.
6. Neutral bus, when specified or required, shall have the same capacity as the main bus.
7. Ground buss shall be rated per NEC relative to the power buss amperage rating and shall extend the entire length of the switchboard.

D. Molded Case Circuit Breakers:

1. General:
 - a. Circuit breakers and motor circuit protectors shall be manufactured by Eaton Cutler-Hammer, Square D, G.E., Siemens, or equal.
 - b. All circuit breakers greater than 400A and 480V shall be provided with arc flash reduction feature.
 - c. Circuit breakers shall be the bolt-on type.
 - d. Multiple-pole circuit breakers shall be designed so that an overload on one pole automatically causes all poles to open.

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The use of tandem or dual circuit breakers in a normal single-pole space to provide the number of poles or spaces specified are not acceptable.

- e. Molded case circuit breakers shall be operated by a single toggle-type handle and shall have a quick-make, quick-break switching mechanism. An automatic trip of the breaker shall be clearly indicated by the handle position. Contacts shall be non-welding silver alloy and have flash reduction arc chutes. A push-to-trip button on the front of the circuit breaker shall provide a local manual means to exercise the trip mechanism.
- f. Minimum interrupting capacity:
 - 1) 480 volt circuit breaker shall have a minimum interrupting capacity of 42,000 amperes.
 - 2) 120 or 208 or 240 volt breaker shall have a minimum interrupting capacity of 22,000 amperes
- g. Circuit Breakers less than 400 volt shall have thermal-magnetic (TM) trip units and inverse time-current characteristics unless protecting full voltage or solid state reduced voltage motor starters, 15kva or larger transformer secondary, or as specifically shown on drawings.
- h. Circuit breakers shall be UL listed for series application.
- i. Where indicated circuit breakers shall be current limiting.
- j. Where indicated on drawings, provide UL listed circuit breakers for continuous duty at 100% of their ampere rating in the intended enclosure.

2. TRIP UNIT

- a. Each molded case circuit breaker microprocessor-based tripping system shall consist of three (3) current sensors, a trip unit and a flux-transfer shunt trip. The trip unit shall use microprocessor-based technology to provide the adjustable time-current protection functions. True RMS sensing circuit protection shall be achieved by analyzing the secondary current signals received from the circuit breaker current sensors, and initiating trip signals to the circuit breaker trip actuators when predetermined trip levels and time-delay settings are reached.
- b. Interchangeable rating plugs shall establish the continuous trip ratings of each circuit breaker. Rating plugs shall be fixed-type. Rating plugs shall be interlocked so they are not interchangeable between frames, and interlocked such that a breaker cannot be closed and latched with the rating plug removed.
- c. System coordination shall be provided by the following microprocessor-based time-current curve shaping adjustments:

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- 1) Adjustable long-time setting (set by adjusting the trip setting dial to an amount not to exceed rating plug)
 - 2) Adjustable short-time setting and delay with selective flat or I^2t curve shaping,
 - 3) Adjustable instantaneous setting
 - 4) Adjustable ground fault setting and delay with selective flat or I^2t curve shaping.
- d. The microprocessor-based trip unit shall have both powered and unpowered thermal memory to provide protection against cumulative overheating should a number of overload conditions occur in quick succession.
 - e. Furnish internal ground fault protection with adjustable settings. Provide neutral ground fault sensor for four-wire loads.
 - f. Breakers shall have built-in test points for testing the long-time delay, instantaneous, and ground fault functions of the breaker by means of a test set.

E. Space Heaters:

1. Outdoor rated switchgear shall be provided with 120 volts AC thermostatically controlled space heaters. Heater wiring shall be to terminal blocks for connection to external power source. One heater shall be provided in each vertical breaker section. Heaters shall have guards to prevent accidental contact with power or control wiring.

F. Key Interlocks:

1. Key interlocks shall be provided as shown on the drawings. The switchgear manufacturer shall be responsible for coordinating interlocks for switchgear main circuit breakers interlocked with generator circuit breakers. Key interlocks shall be as manufactured by Kirk Key Interlock Company, or equal.

G. Surge Protective Device (SPD)

1. SPD shall be suitable Service entrance location per ANSI/IEEE C62.41, IEEE C62.45, and UL1449 3rd edition and tested according to IEEE C62.44 as Secondary Surge Arrestor.
2. Unit shall be sealed and not allow vapors from entering the switchboard enclosure after a voltage surge event.
3. Modes of protection – Line to Line, Line to Ground, Line to Neutral (as applicable). Voltage, phase and neutral connections per one-line diagram. Current surge capacity shall be 60,000 amps per mode minimum
4. The SPD shall be factory installed inside the switchboard during

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assembly by the original equipment manufacturer. The OEM design shall be integral to the design of the switchgear with special paneling and cutouts specifically designed for unit mounting.

5. The SPD connections shall be located as close as possible to the load side of main disconnect device and ground/neutral bar.
6. The SPD shall have integral 30-amp disconnect and fuses. Service of the SPD assembly, fuses or other serviceable components shall be from front access of the switchboard and shall not require disassembly of switchboard panels to repair or replace parts.
7. SPD shall be Cutler-Hammer Clipper, Current Technology TransGuard or equal.

H. Power Monitor:

1. Provide a microprocessor based line of multifunction, power and energy meters. The meter device shall be UL listed. All meters shall have the following ratings, features, and functions; unless a specific meter type is designated.
 - a. Meter shall be designed for Multifunction Electrical Measurement on 3 phase power systems. The Meter shall support 3-Element Wye, 2.5 Element Wye, 2 Element Delta, 4 wire Delta systems.
 - b. Meter surge withstand shall conform to ANSI C62.41 (6KV)
 - c. The meter shall be user programmable for voltage range to any PT ratio.
 - d. The meter shall have a burden of 1 Mega Ohm, 0.014W at 120 Volts.
 - e. The meter shall accept a direct voltage input range of up to 576 Volts Line to Neutral, and a range of up to 721 Volts Line to Line.
 - f. Meter shall accept a current input of up to 11 amps continuous. Start up current for a 5 Amp input shall be no greater than .005 Amps.
2. Power meter shall be capable of a dual input method for current inputs. As standard the meter shall be designed to allow the CT circuit to pass directly through the meter without any physical termination on the meter, ensuring the meter cannot be a point of failure on the CT circuit. As an option where indicated on the drawing or required for the application, provide additional termination pass-through bars, allowing the CT leads to be terminated on the meter. The meter must be capable of supporting both termination methods.
3. The meter shall have the following additional ratings and features:

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- a. Fault Current Withstand shall be 100 Amps for 10 seconds, 300 Amps for 3 seconds, and 500 Amps for 1 second.
 - b. Meter shall be programmable for current to any CT ratio. The use of DIP switches for selecting fixed ratios shall not be acceptable
 - c. Meter shall have a maximum burden of 0.005VA per phase, at the maximum at 11 Amperes continuous input.
 - d. Meter to accept a pass through wire gauge dimension of 0.177" / 4.5 mm.
4. The meter shall have an accuracy of +/- 0.1% or better for volts and amps, and 0.2% for power and energy functions. The meter shall meet the accuracy requirements of IEC687 (class 0.2%) and ANSI C12.20 (Class 0.2%).
- a. The meter shall provide true RMS measurements of voltage, phase to neutral and phase to phase; current, per phase and neutral.
 - b. The meter shall provide sampling at 400+ samples per cycle on all channels measured readings simultaneously.
 - c. Type meter shall provide total % THD (Total Harmonic Distortion) Monitoring to the 40th order for Voltage and current per phase, and shall provide Volts, Amps, kW, kVAR, PF, kVA, Frequency., kWh, kVAh, kVARh and 1 KYZ pulse output and limit exceeded alarms.
5. The meter shall include a three-line, bright red, .56" LED display.
- a. The meter shall fit in both DIN 92mm and ANSI C39.1 Round cut-outs.
 - b. The meter must display a % of FULL SCALE on the front panel to provide an analog feel. The % FULL SCALE shall have not less than 10 segments.
6. The meter shall be available in transducer only version, which shall not include a display. The transducer version shall mount directly to a DIN rail.
7. The Transducer portion of the meter shall be capable of RS485 Modbus communications.
8. Meter shall be a traceable revenue meter, which shall contain a utility grade test pulse allowing power providers to verify and confirm that the meter is performing to its rated accuracy.
9. The meter shall include 1 independent communications port on the back, with advanced features.

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- a. The port shall provide Modbus TCP/IP protocol.
- 10. The meter shall be capable of operating on a power supply of 90 to 265 Volts AC and 100 to 370 Volts DC. Universal Power AC/DC Supply shall be available. An option shall also be available to operate on a power supply from 18-60 VDC.
 - a. Meter AC/DC power supply shall accept burden of 10VA max.
- 11. Meter shall provide update rate of 100msec for Watts, Var and VA. All other parameters shall be 1 second.
- 12. The meter shall have I/O and communication expandability through two Option card slots on the back.
 - a. The cards shall be capable of being installed in the field, without removing the meter from installation.
 - b. The meter shall auto-detect the presence of any I/O Option cards.
 - c. The Option card slots shall accept I/O cards in all of the following formats: Four channel bi-directional 0-1mA Output Card; Four Channel 4-20mA Output Card; Two Relay Outputs/2 Status Inputs Card; Four Pulses/4 Status Inputs Card.
 - d. The Option card slots shall accept communication cards in the following format: 100BaseT or Fiber Optic Card Ethernet Modbus TCP.
 - e. The meter shall be capable of accepting any combination of up to two cards.
- 13. Operating temperature shall be (-20 to +70) degrees C.
- 14. The meter faceplate shall be rated NEMA 12.
- 15. Power Monitor shall be Electro Industries/GaugeTech Shark200 with INP100S 100BaseT Ethernet (Modbus TCP) and RO1S Relay Output expansion cards, or equal.

I. Current Transformers

- 1. Furnish mounted (preferable) or unmounted current transformers based on space allocated and installation requirements. The current transformer shall have wire leads or binding posts and ratio as shown on the drawings. The accuracy shall be metering accuracy class 0.6 at a minimum burden at 60 hz shall be 2.5 VA and as required to meet specified accuracy of device(s) fed.

PART 3: EXECUTION

3.01 WORKMANSHIP

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- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship] and as specified herein.

3.02 INSTALLATION

- A. Vertical sections shall be mounted on steel channel sills continuous on two sides. The steel channel sills shall be heavy duty to meet the specific seismic requirements of this project location. These sills shall be mounted on the concrete pad to be installed per the Contract Drawings.
- B. Conduit entering Switchboard shall be stubbed up 1" into the bottom horizontal wireway (typically) directly below the vertical section in which the conductors are to be terminated.
- C. Base of Switchboard shall be adequately grouted, caulked or sealed to prevent the entry of insects and rodents.

3.03 FIELD ASSISTANCE

- A. Provide field testing as specified in Electrical Specifications [Electrical General, Testing].

3.04 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

END OF SECTION

SECTION 16450

GROUNDING

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Labor, materials, equipment, tools, safety gear, test equipment, incidentals, services, and transportation for a complete electro-mechanical installation as shown on the Drawings, included in these Specifications, or as can be reasonably implied from project descriptions.
- B. The scope of work includes:
 - 1. Furnish and install grounding system required by drawings, or if not shown or defined, as required by Article 250 of the NEC. Ground conductors shall be sized for the protective device, minimum.
 - 2. Furnish and install conduits, junction boxes, underground boxes, and associated hardware. Provide hardware, conduit, fittings, and other parts for a complete grounding installation.
 - 3. Installations shall be designed and installed with components meeting the NEMA area designation.
- C. Work includes that specified in Electrical Specifications [Electrical General].

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Low Voltage Wire & Data Cable]
- C. Project Drawings

1.03 QUALIFICATIONS

- A. Material furnished under this specification shall be installed by qualified installers meeting requirements specified in Electrical Specifications [Electrical General, Qualifications].

1.04 SUBMITTAL REQUIREMENTS

- A. Provide submittals and drawings as specified in Electrical Specifications [Electrical General, Submittal Requirements].
- B. Submit manufacturer's product information for connections, clamps, rods, terminals, and grounding system components.

PART 2: PRODUCTS

2.01 GROUNDING SYSTEM

- A. General

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1. Grounding conductors shall be sized as shown on the drawings or in accordance with NEC table 250, whichever is larger.
2. Components of the grounding electrode system shall be manufactured in accordance with UL 467 - Standard for Safety Grounding and Bonding Equipment.

B. Grounding System

1. The utility service ground shall be tied to a building ground grid consisting of a "UFER" and/or ground rod type grounding system.
2. The UFER shall consist of minimum 25 feet minimum of code sized bare copper wire conductor laid at 3 foot nominal depth encased with concrete or ground or as detailed on the Contract Drawings. UFER ground shall be located where soil moisture content will be maximized.
3. Ground enhancement material shall be permanent and be designed to lower earth resistance in all soil conditions. Once set, material shall have resistivity of not more than 20 ohm-cm resistance. Material shall be set by mixing it with water to form a slurry and shall not dissolve or decompose once cured. Ground enhancement material shall be Erico Ground Enhancement Material (GEM), Lyncole XIT, or equal.
4. The main ground bonding wire from the ground rod shall extend up into the utility service panel with readily visible UL approved "ground clamp" attached to the ground bus.
5. Install bare copper ground bond wires from the UFER ground to the various locations shown on the drawings.

C. Raceway Grounds

1. Metallic conduits shall be assembled to provide a continuous ground path. Metallic conduits shall be bonded using insulated grounding bushings.

D. Equipment and Enclosure Grounds

1. Electrical and distribution equipment shall be connected to the grounding system. Cables shall be sized as specified.

E. Components

1. Ground rod shall be $\frac{3}{4}$ " x 10 ft solid steel with 10-mil copper-cladding.
2. Provide ground well enclosures for all outdoor ground rods. Furnish Christy type F8 or equal unless otherwise shown on the drawings.
3. Ground rod clamps shall be bolt-on type as manufactured by O-Z Gedney type GRC, or equal.
4. Grounding and bonding wires shall be installed in all PVC conduits and

nonmetallic raceways and connected to the ground bus and all equipment.

5. Each electrical enclosure shall have a copper ground bus. Screw type fasteners shall be provided on all ground busses for connection of grounding conductors. Ground bus shall be a Challenger GB series, ILSCO CAN series or equal.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in specified in Electrical Specifications [Electrical General, Workmanship].

3.02 INSTALLATION

- A. Grounding System:
 1. Install all products per Electrical Specifications [Electrical General, Installation].
 2. Each nonmetallic conduit shall contain a code sized grounding conductor.
 3. The system neutral conductor and all equipment and devices required to be grounded by the National Electrical Code shall be grounded in a manner that satisfies the requirements of the National Code.
 4. The system neutral (grounded conductor) shall be connected to the system's grounding conductor at only a single point in the system. This connection shall be made by a removable bonding jumper sized in accordance with the applicable provisions of the National Electrical Code if the size is not shown on the Drawings. The grounding of the system neutral shall be in the enclosure that houses the service entrance main overcurrent protection.
 5. Utilize mechanical connections in accessible locations and exothermic connections in non-accessible or buried locations.
 6. The secondary on all transformers shall be grounded.
 7. All raceway systems, supports, enclosures, panels, motor frames, and equipment housings shall be permanently and effectively grounded.
 8. Install insulated grounding conductor with feeders and branch circuit conductors in conduits. Size grounding conductors in accordance with NEC. Install from grounding bus of serving panel to ground bus of served panel, grounding screw of receptacles, lighting fixture housing, light switch outlet boxes or metal enclosures of service equipment. Ground conduits by means of grounding bushings on terminations at panelboards and distribution panels with 12ga. conductor to grounding bus

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9. All receptacles shall have their grounding contact connected to a grounding conductor.
10. Branch circuit grounding conductors for receptacles or other electrical loads shall be arranged such that the removal of a lighting fixture, receptacle, or other load does not interrupt the ground continuity to any other part of the circuit.
11. Attachment of the grounding conductor to equipment or enclosures shall be by connectors specifically provided for grounding. Mounting, support, or bracing bolts shall not be used as an attachment point for ground conductors.
12. Install grounding electrode conductor and connect to reinforcing steel in foundation footing. Electrically bond building steel to ground system. Bond metal siding not attached to grounded structure.

B. Ductbanks

1. Provide #4/0 AWG bare, stranded ground conductor in approximately the center of the ductbank where shown on plans and for all ductbanks containing cables rated 2kV or greater
2. Ground wire, where required, shall be strapped to a conduit every 5 feet.

3.03 FIELD QUALITY CONTROL

A. Inspections:

1. Engineer shall inspect ground system prior to cover.

B. Testing:

1. Complete applicable test forms if provided in testing specifications [Factory and Field Testing]. If form is not provided, furnish results on a vendor standard form.
2. Test each grounding connection to determine the ground resistance. The grounding test shall be IEEE 81.2 and NETA 7.13. The current reference rod shall be driven at least 100 feet from the ground rod or grid under test. The measurements shall be made at 10-foot intervals beginning 20 feet from the test electrode and ending 80 feet from it, in direct line between the ground rod or center of grid and the current reference electrode.

END OF SECTION

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SECTION 16470

PANELBOARD AND POWER TRANSFORMER

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall supply panelboards and power transformers as specified herein and as shown in the Contract Drawings.
- B. The Contractor shall perform complete startup and testing services for the panelboard and power transformer per Electrical Specifications [Factory and Field Testing].
- C. Work includes that specified in Electrical Specifications [Electrical General].
- D. Reference drawings for panelboard and transformer location – electrical structures or stand-alone. If within electrical structures, the Contractor shall supply the electrical section with factory installed panelboard and transformer. If stand-alone, the Contractor shall install individual components with enclosures as specified herein.
 - 1. The quantity of breakers with size and number of poles as shown on panelboard schedules.
 - 2. Submittal data and drawings.
 - 3. Startup assistance.
 - 4. Panelboard testing.
 - 5. Operation and maintenance manuals.
 - 6. Warranty of all components of the panelboard and power transformer.

1.02 SUBMITTAL REQUIREMENTS

- A. Provide submittals and drawings as specified in Electrical Specifications [Electrical General, Submittal Requirements].
- B. Provide ratings and characteristics including voltage, temperature rise, KVA, efficiency, materials of construction, NEMA enclosure rating, voltage taps, and impedance.
- C. Provide catalog cuts for circuit breakers and devices.
- D. Submit panelboard schedule for approval.

1.03 OPERATION AND MAINTENANCE INFORMATION

- A. Provide operating instructions as specified in Electrical Specifications [Electrical General, Operating and Maintenance Instructions].

PART 2 – PRODUCTS

2.01 PANELBOARDS

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A. General

1. The Contractor shall furnish panelboards of a type indicated on the one-line Contract drawings and specified herein.
2. Furnish and install padlock lock-off attachment for each circuit breaker.
3. Panelboards shall comply with the applicable sections of UL, NEC, and NEMA and shall be Cutler Hammer Pow-R-Line, Square D, ITT or equal.
4. A machine-typed circuit directory with clear plastic cover shall be supplied mounted on the inside of door in a frame when equipment is shipped. Circuit directory shall be as approved in the Submittal.

B. Interiors

1. Interiors shall be completely factory assembled with bolt-on devices.
2. Main and feeder breakers shall include lockout padlock hasp suitable for frame size. Provide Cutler Hammer QLPB123PL, PLK1, or similar.
3. Full size insulated neutral bars shall be included. Neutral busing shall have a suitable lug for each outgoing feeder requiring a neutral connection.
4. Main bus bars shall be plated copper sized in accordance with UL standards to limit temperature rise on any current carrying part to a maximum of 50 degrees C above an ambient 40 degrees C maximum.
5. A copper ground and neutral bus shall be included in all panelboards with terminal screws.

C. Boxes

1. Provide minimum gutter space in accordance with the National Electric Code. Where feeder cables supplying the mains of a panel are carried through its box to supply other electrical equipment, the box shall be sized to include the additional required wiring space. At least four interior mounting studs with adjustable nuts shall be provided.

D. Trims

1. Provide a hinged door over all circuit breaker handles. Doors in panelboard trims shall not uncover any live parts. Doors shall have a catch, lock and trim.
2. Surfaces of the trim assembly shall be properly cleaned, primed and a finish coat of gray ANSI 61 or 49 or to Switchboards and MCCs.
3. Surface trims shall be same height and width as box for surface mount, and $\frac{3}{4}$ " (min) beyond box on all sides for flush mount.

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E. Panelboard Ratings

1. Panelboards shall have voltage, phase and short circuit (AIC) ratings as shown on the drawings.
2. Breakers shall be a minimum of 100 ampere frame. Breakers 15 through 100 amperes trip size shall take up the same pole spacing.
3. Panelboards shall be labeled with a UL short circuit rating. When series ratings are applied with integral or remote upstream devices, a label shall be provided. Series ratings shall cover all trip ratings of installed frames. It shall state the conditions of the UL series ratings including:
 - a. Size and type of upstream device
 - b. Branch devices that can be used
 - c. UL series short circuit rating

2.02 POWER TRANSFORMER

- A. The power transformer shall be ventilated dry type. Voltage and KVA ratings shall be as shown on the Contract Drawings. The transformer shall be as manufactured by Cutler Hammer, Jefferson, ACME, Square D, G.E., or equal.
- B. Transformer shall meet latest NEMA TP-1 and Energy Star efficiency standards.
- C. Coils shall be manufactured of electrical grade aluminum (if stand-alone) or copper (if within a MCC or Switchboard) and shall be adequately braced for short circuit ratings and defined in ANSI and NEMA standards.
- D. Transformers rated 31KVA and above shall have two 2½ percent taps above and below normal full capacity (ANFC and BNFC).
- E. The transformer shall carry full load continuously at rated voltage and frequency without exceeding the average temperature rise of 115°C above an ambient temperature of 40°C. Insulation shall be rated for 220°C (UL class 220°C).
- F. For transformers installed within electrical equipment, vibration isolators shall be installed between the transformer and its mounting surface to reduce case vibration and associated noise.
- G. For stand alone transformers, the transformer housing shall be securely fastened to the mounting surface with bolted connections sized appropriately to withstand seismic zone 4 forces.
- H. The transformer shall be finished with two coats of enamel to resist rust and corrosion.
- I. Transformers located inside electrical structures or enclosures shall be provided with adequate ventilation for heat removal as required.

- J. Transformer neutral shall be grounded in accordance with Article 250-26 and 450-10 of NEC and any applicable local ordinances. Installation and protection of the transformer grounding conductors and attachments shall be per NEC 250-24.

PART 3 – EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].
- B. Perform work to remedy non-compliant installations after inspection.

3.02 INSTALLATION

- A. Provide installation as recommended by the manufacturer and as specified in Electrical Specifications [Electrical General, Installation].

3.03 FIELD ASSISTANCE

- A. Provide testing as specified in Electrical Specifications [Factory and Field Testing].

3.04 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

END OF SECTION

SECTION 16481

VARIABLE FREQUENCY DRIVE

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Provide each variable frequency drive as shown on elementary and one-line drawings. Variable frequency drive shall be provided with full speed bypass, harmonic conditioner, line and/or load reactor, RFI filter and/or other accessories where shown on The Drawings. All VFDs shall be of the same manufacturer.
 - 1. The System Integrator shall perform and be responsible for procurement, submittals, shop drawings, testing, and all control wiring for the VFD. System Integrator is defined in Electrical Specifications [Electrical General].
- B. Provide enclosure (and side mounted wire chase as required) for top or bottom feed conduit connection as shown in the drawings. Enclosure size shall not exceed the space allocated in the drawings for such use.
- C. Provide cooling/ventilation system, mounting hardware, associated components, devices, and field control stations. Some components may be specified in other Electrical Specifications such as terminal blocks, wire, buttons, etc.
- D. Installation of the VFD with components as specified in Electrical Specifications [Electrical General]. The VFD scope of work includes:
 - 1. Providing and installing VFD(s) of rating shown on The Drawings.
 - 2. Submittal data and drawings.
 - 3. Startup assistance.
 - 4. Factory and field testing.
 - 5. Operation and maintenance manuals.
 - 6. Warranty of all components.
- E. Startup and configuration of VFD with actual motor load.
- F. Electrical Specifications [Factory and Field Testing]. Furnish all required labor, materials, safety equipment, transportation, test equipment, incidentals and services to perform factory and/or field testing.

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Low Voltage Wire & Data Cable]
- C. Electrical Specifications [Factory and Field Testing]

1.03 SUBMITTALS REQUIREMENTS

- A. Provide Submittals as specified in Electrical Specifications [Electrical General,

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Submittal Requirements].

- B. Include a record of each VFD parameter available to be changed by the user. The list shall include factory defaults and space for entered values.

1.04 OPERATING AND MAINTENANCE INFORMATION

- A. Provide operation and maintenance instructions as specified in Electrical Specifications [Electrical General].
- B. Include a record of each VFD parameter setup during startup and testing and place a copy of setting in each O & M manual.

PART 2: PRODUCTS

2.01 GENERAL

- A. All equipment shall be designed for the service intended and shall be of rugged construction, of ample strength for all stresses which may occur during fabrication, transportation, erection, and continuous or intermittent operation. All equipment shall be adequately stayed and braced and anchored and shall be installed in a neat and workmanlike manner. Appearance and safety, as well as utility, shall be given consideration in the design of details. All components and devices installed shall be industrial grade and shall be of sturdy and durable construction suitable for long, trouble-free service. Light duty, fragile, and competitive grade devices of questionable durability shall not be used.
- B. The VFD is inclusive of the input stage, buss, output stage, input filters, output filters, and all other assemblies, boards, or conditioning equipment, that make up the entire VFD system. The VFD system is herein referred to simply as "VFD" and is not to be parsed in any way to meet a specification as a specific part or assembly where it cannot be met as a system.
- C. Products that are specified by manufacturer, trade name, or catalog number establish a standard of quality and do not prohibit the use of equal products of other manufacturers provided they are favorably reviewed by the Owner and/or Engineer prior to installation.
- D. Underwriter's Laboratories (UL) listing is required for all substituted equipment when such a listing is available for the first named equipment.

2.02 QUALITY

- A. All equipment and materials shall be new and the products of reputable suppliers having adequate experience in the manufacture of these particular items. For uniformity, only one manufacturer will be accepted for each type of product.
- B. All equipment shall be designed for the service intended and shall be of rugged construction, of ample strength for all stresses which may occur during fabrication, transportation, erection, and continuous or intermittent operation. All equipment shall be adequately stayed and braced and

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anchored and shall be installed in a neat and workmanlike manner. Appearance and safety, as well as utility, shall be given consideration in the design of details. All components and devices installed shall be standard items of industrial grade, unless otherwise noted, and shall be of sturdy and durable construction suitable for long, trouble-free service. Light duty, fragile, and competitive grade devices of questionable durability shall not be used.

- C. Products that are specified by manufacturer, trade name, or catalog number establish a standard of quality and do not prohibit the use of equal products of other manufacturers provided they are favorably reviewed by the Owner and/or Engineer prior to installation.
- D. Underwriter's Laboratories (UL) listing is required for all substituted equipment when such a listing is available for the first named equipment.

2.03 VARIABLE FREQUENCY DRIVE

- A. **This specification is based on Allen Bradey 755T, Schneider Altivar 680 with AFE (Active Front End Attenuation), Siemens Robicon W150CP or Eaton Cutler Hammer SVX9000 series with HCU2 (active harmonic filter), or equal.**
- B. The VFD shall be of the latest technology used to control and maintain a process variable (level, flow, pressure, speed, etc.) by varying the motor speed. The VFD shall be available from a single manufacturer in the horsepower range of 1 to 500 HP.
- C. Performance Requirements
 - 1. Harmonic Attenuation (applies to Ultra Low Harmonic (ULH) as shown in drawings)
 - a. The VFD shall have an active filter line supply unit which controls the low order harmonic current or 18 pulse rectifiers to reduce the harmonic current impressed on the incoming power feeder.
 - b. The input current to the VFD shall limit the total harmonic content to less than 5% of the VFD's rated input on any power system and under all operating conditions.
 - c. The VFD shall comply with IEEE 519 requirements.
 - 2. Open loop static speed regulation shall be 0.5 % to 1% of rated motor speed. When motor speed feedback is provided from a suitable encoder, closed loop speed regulation shall be 0.1% of motor nominal speed. Dynamic speed accuracy shall be less than 1%-sec with 100% torque step open loop and 0.5%-sec closed loop with 100% torque step. 2. Torque control response time shall be less than 10 ms with nominal torque. In the torque regulating mode, torque regulating accuracy open loop shall be +/- 5%; torque regulating accuracy closed loop shall be +/- 2%;

D. Ratings

1. The VFD shall employ a full wave rectifier to prevent input line notching and operate at a fundamental (displacement) input power factor of 0.98 at all speeds and nominal load.
2. The VFD efficiency shall be 97.5% or better at full speed and load. Efficiency is defined as the output power divided by the input power in terms of percentage. All internal system losses recognized.
3. Load - The VFD shall be designed to continuously operate the following motor/pump load:
 - a. Motor NEMA design B, squirrel-cage induction or specialty specific use motor per Mechanical Division Specification as shown in drawings.
 - b. Horsepower at full speed R.P.M. of submitted/approved motor.
 - c. Voltage, 230/460 VAC, three phase, 60 Hz.
 - d. Service factor, 1.15 S.F.
4. Input Power - The VFD shall be rated to continuously operate under the following input power conditions:
 - a. The Drive shall be rated to operate from 3-phase power at nominal voltage (208VAC to 600VAC, +10% /-15% as shown in drawings), 48Hz to 63Hz.
 - b. The overvoltage trip level shall be a minimum of 30% over nominal, and the undervoltage trip level shall be a minimum 35% under the nominal voltage.
 - c. Three phase, phase rotation insensitive.
 - d. Displacement power factor, 0.95 lagging at all loads and speeds above 10% rated load.
5. Output Power - The VFD shall be rated to continuously operate while providing the following output power conditions:
 - a. Voltage, 0 to 500 VAC.
 - b. Frequency, 3 to 60 Hz.
 - c. Continuous motor horsepower.
 - d. VFD amp output (minimum).
 - e. Continuous current - as shown in drawings or 115% of rated motor nameplate amps, whichever is higher.
 - f. Short term normal current, 110% of continuous rated current for a minimum duration of 1 minute per every 10 minutes running.
 - g. Short term heavy duty overload current, 150% of continuous rated current for a minimum duration of 1 minute per every 10 minutes running.
 - h. Waveform - sine coded PWM.
 - i. The drive's switching pattern shall be continually adjusted to provide optimum motor flux and avoid the high-pitched audible noise.
 - j. Diodes and transistors shall have a minimum withstand of

1,200 peak inverse voltage (PIV).

6. Environmental - The VFD shall be rated to continuously operate under the following environmental conditions:
 - a. Ambient temperature, 5°F to 122°F (-15°C to 50°C).
 - b. Altitude, no derating below 3,300 ft.
 - c. Relative humidity, 95% non-condensing.
 - d. The drive shall be protected from atmospheric contamination by chemical gasses and solid particles per IEC 60721-3-3, chemical gasses Class 3C2 and solid particles Class 3S2.
 - e. The drive shall be protected from vibration per IEC 60721-3-3 Class 3M4 (sinusoidal displacement 3.0 mm, 2Hz to 9Hz; acceleration 10m/s², 9Hz to 200Hz).

E. Protection - The VFD shall be provided with the following protection:

1. For each programmed warning and fault protection function, the Drive shall display a message in complete English words or Standard English abbreviations. The three (3) most recent fault messages along with time, current, speed, voltage, frequency and DI Status shall be stored in the Drive's fault history. The last ten (10) fault names shall be stored in Drive memory.
2. The Drive shall include internal MOV's for phase to phase and phase to ground line voltage transient protection.
3. Output short circuit withstand rating and ground fault protection rated for 100,000 AIC shall be provided per UL508C without relying on line fuses. Motor phase loss protection shall be provided.
4. The Drive shall provide electronic motor overload protection qualified per UL508C.
5. Protection shall be provided for AC line or DC bus overvoltage at 130% of max. rated or undervoltage at 65% of min. rated and input phase loss.
6. A power loss ride through feature will allow the Drive to remain fully operational after losing power as long as kinetic energy can be recovered from the rotating mass of the motor and load.
7. Stall protection shall be programmable to provide a warning or stop the Drive after the motor has operated above a programmed torque level for a programmed time limit.
8. Underload protection shall be programmable to provide a warning or stop the Drive after the motor has operated below a selected underload curve for a programmed time limit.
9. Over-temperature protection shall provide a warning if the power module temperature is less than 5°C below the over-temperature trip level.

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10. The VFD shall constantly monitor the load current with an electronic thermal overload relay and trip the drive on motor overload. The electronic overload relay shall be adjustable and compensate for the reduced cooling of the motor at reduced speeds. This protection provides an orderly shutdown should the motor's thermal capabilities be exceeded and eliminates the requirement for conventional motor overload relays.
- F. Digital programmer/controller –The VFD shall be equipped with a front mounted operator control panel (keypad) consisting of a backlit, alphanumeric, graphic display and a keypad with keys for Start/Stop, Local/Remote, Up/Down and Help. Two (2) Softkeys will be provided which change functionality depending upon the position within the parameter hierarchy or state of panel.
1. All parameter names, fault messages, warnings and other information shall be displayed in complete English words or standard English abbreviations to allow the user to understand what is being displayed without the use of a manual or cross-reference table.
 2. The Display shall have contrast adjustment provisions to optimize viewing at any angle.
 3. The control panel shall provide a real time clock for time stamping events and fault conditions.
 4. The control panel shall include a feature for uploading parameter settings to control panel memory and downloading from the control panel to the same Drive or to another Drive.
 5. All Drives throughout the entire power range shall have the same customer interface, including digital display, and keypad, regardless of horsepower rating.
 6. The keypad is to be used for local control, for setting all parameters, and for stepping through the displays and menus.
 7. The keypad shall be removable and insertable under Drive power, capable of remote mounting, and shall have its own non-volatile memory.
 8. Digital Programmer/Controller (HIM) shall be capable of remote door mounting. Cable for remote digital programmer/controller shall be supplied as shown in the drawings. The HIM shall be mounted and housed to maintain the NEMA 12 door rating.
 9. The standard operator panel shall provide a start-up, maintenance and diagnostic assistants that guides a new user through initial start-up and commissioning of the Drive as well as provide indications for maintenance and help to diagnose a fault. In addition, a PID assistant, Real-time Clock assistant, Serial Communications assistant, and Drive Optimizer assistant shall be included. A Drive Optimizer assistant permits the user to choose Drive set-up for low noise, drive & motor

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efficiency or motor control accuracy.

10. The door mounted human interface module (HIM) display shall be capable to view and adjust the following diagnostic and status indicators:
 - a. VFD Speed % or Frequency
 - b. Instantaneous overcurrent.
 - c. Ground fault.
 - d. Overtemperature.
 - e. Overvoltage.
 - f. Undervoltage.
 - g. Overload.
 - h. Overfrequency.
 - i. Amps.
 - j. Voltage.
 - k. Temperature.
 - l. Auxiliary Fault.
 - m. Phase loss.
 - n. Current limit.
 - o. Power and kilowatt hours
 - p. Power up delay.
 - q. Status of discrete inputs and outputs.
 - r. Values of analog input and output signals
 - s. Values of PID controller reference, feedback and error signals.
 11. Adjustments - The following setting ranges shall be provided and made independently accessible for operator adjustment:
 12. Speed/Torque control functions shall include:
 - a. Minimum speed/torque limits.
 - b. Maximum speed/torque limits.
 - c. Selection of up to seven (7) preset speed settings or external speed control
 - d. Two (2) independent built-in PID controllers to control a process variable such as pressure, flow or fluid level.
 - e. Two (2) analog inputs shall be programmable to form a reference by addition, subtraction, multiplication, minimum selection or maximum selection.
 13. Output control functions shall include:
 - a. Current and torque limit adjustments to limit the maximum Drive output current and the maximum torque produced by the motor. These limits shall govern the inner loop torque regulator to provide tight conformance with the limits with minimum overshoot.
 - b. A torque regulated operating mode with adjustable torque ramp up/down and speed/torque limits.
- G. Input and Output Terminations - The VFD shall have terminals for input and output cabling as defined in the Conduit and Wire Schedule as shown on the Contract Electrical Drawings.

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1. Provide power terminal blocks for motor lead connections where drive terminals are hard to reach or require drive cabinet disassembly to connect.
 2. Five (5) digital inputs, all independently programmable with at least twenty-five (25) input function selections. Inputs shall be designed for 120 volts AC input or as otherwise shown in the drawings. Input functions must include time delay start and hand and auto (Ethernet) control.
 3. Two (2) form C relay contact digital outputs, all independently programmable with at least thirty (30) output function selections. Relay contacts shall be rated to switch a maximum two (2) Amps rms continuous current at a maximum switching voltage of 30VDC or 250VAC. Function selections shall include indications that the drive is ready (no faults and in remote), running, and are addressable from Ethernet as users choice.
 4. Two (2) analog inputs, each selectable for 0VAC - 10VAC or 4mA - 20mA, and independently programmable with at least ten (10) input function selections. Analog input signal processing functions shall include scaling adjustments, adjustable filtering and signal inversion. If the input reference (4-20mA or 0-10V) is lost, the VFD shall give the user the option of the following: (1) stopping and displaying a fault, (2) running at a programmable preset speed, (3) hold the VFD speed based on the last good reference received, or (4) cause a warning to be issued, as selected by the user. The Drive shall be programmable to signal this condition via a keypad warning, relay output and/or over the serial communications bus.
 5. Two (2) analog outputs providing 0 (4) to 20mA signals. Outputs shall be independently programmable to provide signals proportional to at least twelve (12) output function selections including output speed, frequency, voltage, current and power.
 6. Provide I/O input and relay output expansion card(s) as needed to accommodate the I/O wiring as shown in the drawings. The option card shall be integrally mounted to the drive.
- H. Communications – The VFD shall include communications module for interface to the PLC. All settable parameters and instantaneous operational registers shall be accessible from the communications port.
1. Type
 - a. Modbus TCP (Schneider Automation Standard)
 2. Add-On Instructions
 - a. The VFD manufacturer must have an add-on instruction that is compatible with the PLC on this project. The add-on instruction provides a preconfigured message command to send and receive information from the drive. The add-on instruction must be a free download available from the manufacturer

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website at the time of bid and thereafter.

3. Command and Metering registers to include:
 - a. Digital input reads (giving status of inputs)
 - b. Digital output commands (to relay DOs)
 - c. 3 phase voltage and current
 - d. Power in KW, KWH and Power factor
 - e. Elapsed motor run time
 - f. Start/Stop
 - g. Running
 - h. Fault conditions
 - i. Heat Sink Temperature
 - j. Others as available.

I. Features - The VFD shall have the following features:

1. Connection of the three incoming line leads and three-motor leads shall be the only connections necessary for manual operation of the VFD unit. All other wiring shall be prewired at the factory and self-contained within the VFD unit. A 120 VAC control power transformer and other auxiliary power supplies shall be provided with the VFD for power to pilot lights, meters, relays, and miscellaneous devices specified to be supplied with the VFD. Lugs shall be provided for connection of all power leads; terminal blocks shall be provided for all other wiring. Relay logic, wiring and enclosure layout shall be equivalent to that shown on the Drawings.
2. The VFD shall be protected by a circuit breaker disconnect unless otherwise shown in the drawings. The disconnect shall be externally operated and shall have an operator mechanism that is an integral part of the enclosure. An operator mechanism shall be provided to allow padlocking the disconnect in the "off" position with up to two padlocks.
3. AC input fuses shall be provided on the line and/or load side of the VFD (if required by the manufacturer) to isolate the VFD power circuitry upon a fault condition.
4. The VFD shall be capable of sensing load outside of normal range. A User Load Curve with range settings shall be available to be configured. If the motor horsepower as a function of speed is not within a predefined range, then an alarm shall be set within a setpoint delay. The alarm may be configured to shut down the drive and/or set a digital output for connection to a indicating light or PLC. The intent of this alarm is to protect the machine or pump from operating with a broken shaft, or clog, or flow restriction, or similar condition.
5. Three (3) programmable critical frequency lockout ranges to prevent the VFD from operating the load continuously at an unstable speed.
6. Transient and surge voltage power line input protection shall be provided for the VFD through use of metal oxide varistors (MOVs), surge protective module, or other approved equal methods. Transient

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protection integral to the VFD shall be provided to a minimum of 10,000 volts, 50 joules without failure. The transient protection shall meet or exceed ANSI C7, 90-1971 and IEEE 472-1974 Standards without failure. Failure is defined as loss of components in the VFD including power semiconductors and fuses. The VFD shall be protected from the following, as a minimum, power line transients and recover to automatically restart and resume normal operation without posting a fault:

- a. Switching the primary of a power transformer.
 - b. Switching power factor correction capacitors "ON" and "OFF" line.
 - c. De-energization or energization of contactors, relays, and other power equipment from the power line.
 - d. Starting and stopping of other motors when powered from Utility.
7. The VFD shall not be affected by or generate excessive electro-magnetic interference (EMI). The VFD shall be provided with a radio interference filter (RIF) to meet the following requirements:
- a. The use of a 4 Watt hand-held VHF/UHF transceiver within three feet of the VFD with its doors closed shall not cause erratic operation, loss of configuration, or any other deviation from normal operation.
 - b. The worst case conducted and radiated EMI generated by the VFD shall not be enough to prevent the use of hand held VHF-UHF transceivers within three feet of the VFD with its doors closed.
8. Opening of the VFDs input switches, circuit breakers, or output contactors while the VFD is operating under load shall not result in damage to the VFD power or control circuit components.
9. The VFD shall be capable of starting and operating without a motor load connected.
10. Phase loss protection shall be provided to prevent single phasing of the motor load.
11. The VFD shall have an instantaneous electronic trip circuit to protect the VFD from output line-to-line and line-to-ground short circuits. Output line-to-line and line-to-ground short circuits shall not damage the VFD.
12. Automatic fault reset to automatically restart the drive after any type of fault condition. This automatic restart shall repeat up to three attempts. This automatic reset shall be provided to prevent a drive fault from completely locking out on isolated nuisance fluctuations. When the drive is locked out after its automatic reset attempts the operator shall be able to reset the VFD by a local or remote manual reset pushbutton. Fault lockout shall be indicated on the door

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mounted drive fail pilot light.

13. The VFD shall be capable of continued operation during an intermittent loss of incoming line power up to five cycles.
 14. The VFD shall automatically restart upon reapplication of power after a loss of line power. Momentary or sustained power failures shall not fault trip out the VFD or blow any fuses.
 15. Any configuration of adjustments or controls not set by a switch or potentiometer shall be stored in nonvolatile memory. No configuration information shall be lost due to power failures of any duration.
 16. The VFD shall be capable of starting into a rotating motor without tripping out on a fault.
 17. The drive shall have an adjustable voltage boost control capable of providing additional starting torque to the motor at start. This control shall provide the additional voltage only at the frequency range required to start the motor thus reducing the additional motor heating excess voltage would cause at normal operating speeds.
 18. The drive shall be equipped with critical frequency jump circuitry which allows the VFD to be setup to skip two bands of frequencies which cause excessive vibration or noise.
- J. Enclosure - The enclosure type shall be as shown in the drawings - freestanding, wall mount, motor control center full section, or MCC cubicle mount construction. All components shall be accessible from the front of the enclosure. Rear or side access shall not be required in order to remove or service any component. The enclosure shall include the following in its construction:
1. The VFD shall incorporate thermostat/run controlled fans for cooling. The air flow through the VFD compartment shall provide proper cooling of the operating VFD at an (external cabinet) ambient temperature of 104°F. Fan mounting shall include reusable air filters on suction. Provide fans for suction and discharge vents as required maintaining air flow and forcing circulation.
 2. Provide specific use fans located within the enclosure to cool, directly, specific components such as line filters or DV/DT filters.
 3. Thermostat shall have bi-metallic adjustable set point range of 30° to 140°F. Thermostat shall have a switching capacity of 10A at 120 VAC. Provide Hoffman A-TEMNO temperature switch or approved equal to operate fans. Thermostat shall operate fans in parallel with motor running output of VFD.
 4. The VFD, including the enclosure and input protection, shall be UL listed for a minimum of 42,000 RMS symmetrical ampere fault withstand capability. VFDs consisting of the VFD, enclosure, and all accessories, that are not UL listed will not be approved.

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PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].
- B. Requirements of Related Electrical Sections apply to design, documentation construction and assembly of Variable Frequency Drives.
- C. Perform work to remedy non-compliant installations after inspection.

3.02 FIELD ASSISTANCE

- A. Testing, checkout and start-up of the variable frequency drive equipment shall be performed under the technical direction of a factory trained authorized manufacturer representative.
 - 1. The setup and programming of the VFD shall be provided by a factory-trained representative who is authorized by the VFD manufacturer to perform the startup. This setup and programming shall be done prior to and during the first application of power to the motor. The VFD electronic motor overload protection shall be set to meet the motor nameplate and NEC Code requirements.
 - 2. Provide testing as specified in Electrical Specifications [Factory and Field Testing].
- B. Provide 1 hour of "VFD Setup" Training on operating and maintenance procedures.

3.03 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General; Warranty].

END OF SECTION

SECTION 16482

SOLID STATE SOFT STARTER

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Provide each Solid State Starter (SSS) drive as shown on elementary and one-line drawings. All SSSs shall be of the same manufacturer.
- B. Provide enclosure (and wire chase as required) for top or bottom feed conduit connection as shown in the drawings. Enclosure size shall not exceed the space allocated in the drawings for such use.
- C. Provide cooling/ventilation system, mounting hardware, associated components, devices, and field control stations. Some components may be specified in other Electrical Specifications such as terminal blocks, wire, buttons, etc.
- D. The SSS scope of work includes:
 - 1. Providing and installing SSS(s) of rating shown on Contract Drawings.
 - 2. Submittal data and drawings.
 - 3. Startup assistance.
 - 4. Factory and field testing.
 - 5. Operation and maintenance manuals.
 - 6. Warranty of all components.
- E. Startup and configuration of SSS with actual motor load.
- F. Electrical Specifications [Factory and Field Testing]. Furnish all required labor, materials, safety equipment, transportation, test equipment, incidentals and services to perform factory and/or field testing.

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Low Voltage Wire & Data Cable]
- C. Electrical Specifications [Factory and Field Testing]

1.03 SUBMITTALS REQUIREMENTS

- A. Provide Submittals as specified in Electrical Specifications [Electrical General, Submittal Requirements].
- B. Include a record of each SSS parameter available to be changed by the user. The list shall include factory defaults and space for entered values.

1.04 OPERATION AND MAINTENANCE INFORMATION

- A. Provide operation and maintenance instructions as specified in Electrical

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Specifications [Electrical General].

- B. Include a record of each SSS parameter setup during startup and testing and place a copy of setting in each O & M manual.

PART 2: PRODUCTS

2.01 QUALITY

- A. It is the intent of the Contract Specifications and Drawings to secure the highest quality in all materials and equipment in order to facilitate operation and maintenance of the facility. All equipment and materials shall be new and the products of reputable suppliers having adequate experience in the manufacture of these particular items. For uniformity, only one manufacturer will be accepted for each type of product.
- B. All equipment shall be designed for the service intended and shall be of rugged construction, of ample strength for all stresses which may occur during fabrication, transportation, erection, and continuous or intermittent operation. All equipment shall be adequately stayed and braced and anchored and shall be installed in a neat and workmanlike manner. Appearance and safety, as well as utility, shall be given consideration in the design of details. All components and devices installed shall be standard items of industrial grade, unless otherwise noted, and shall be of sturdy and durable construction suitable for long, trouble-free service. Light duty, fragile, and competitive grade devices of questionable durability shall not be used.
- C. Products that are specified by manufacturer, trade name, or catalog number establish a standard of quality and do not prohibit the use of equal products of other manufacturers provided they are favorably reviewed prior to installation.
- D. Underwriter's Laboratories (UL) listing is required for all substituted equipment when such a listing is available for the first named equipment.

2.02 SOLID STATE SOFT STARTER

- A. General:
 - 1. Each solid state soft starter (SSS) shall be provided as a standalone system as an integral unit. The SSS shall be of the latest technology used exclusively for starting motors of the voltage and horsepower shown in the drawings by limiting the voltage and/or current provided to the motor. The SSS shall be available from a single manufacturer in the horsepower range of 1 to 500. The SSS shall be microprocessor controlled and use high efficiency gated power Silicon Controlled Rectifiers (SCRs). The SSS shall be an Allen-Bradley or Square D with soft stop pump control and Ethernet communication module, or approved equal.
 - 2. The SSS shall feature the following selectable motor starting/stopping modes:

- a. Internal bypass contactor - The SSS shall have an internal running load rated full voltage contactor. The contactor shall automatically engage when the SSS has completed the ramp start of the motor. The bypass contactor shall automatically disengage at the beginning of the ramp stop of the motor. The voltage across the bypass contactor while engaged shall be less than 0.1 volts.
 - b. Soft Start - The motor shall be raised to an initial torque value that is programmable from 0-90% of locked rotor torque. The motor voltage is gradually increased during the acceleration ramp time, which is adjustable from 0-30 seconds.
 - c. Soft Start with Selectable Kickstart - The kickstart, or voltage boost, is in addition to the normal soft start as described above. The soft starter shall provide a 0-2 second (selectable) current pulse equal to 550% of the motors full load current.
 - d. Current Limit Start - This starting mode will limit the maximum starting current supplied to the motor during starting. The user shall be able to adjust the current limit from 50% to 600% of full load current.
 - e. Full voltage Start- This mode will provide full voltage and current to the motor with a 1/4 second ramp.
 - f. Soft Stop - This feature will linearly ramp down the voltage over a time interval of 0-60 seconds (selectable)
 - g. Pump Control - This optional mode (required as specified herein) provides non-linear voltage ramp starting and stopping to smoothly accelerate and decelerate the motor. The starting time shall be programmable from 0-30 seconds and the stopping time programmable from 0-120 seconds.
- B. Load - The SSS shall be designed to continuously operate the following motor/pump load:
- 1. Motor, squirrel-cage induction.
 - 2. Pump, per Mechanical Division Specification.
 - 3. Horsepower, at Full speed R.P.M. of supplied motor.
 - 4. Voltage, 460 VAC, three phase, 60 cycle.
 - 5. Service factor, 1.15 S.F.
- C. Input Power - The SSS shall be rated to continuously operate under the following input power conditions:
- 1. Voltage, VAC as shown in Contract one-line diagram, +10%, -10%.
 - 2. Frequency, 60 Hz.
 - 3. Three phase.
- D. Output Power - The SSS shall be rated to continuously operate while providing the following output power conditions:

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1. Voltage, 0 to 460 VAC.
 2. Frequency, 60 Hz.
 3. SSS amp size (minimum) as shown on Contract one-line drawing.
 4. Continuous motor horsepower.
 5. Continuous current, 125% of rated motor nameplate Amps.
- E. Environmental - The SSS shall be rated to continuously operate under the following environmental conditions:
1. Ambient temperature, 32°F to 122°F (0°C to 50°C).
 2. Altitude, no derating below 3,300 ft.
 3. Relative humidity, 95% non-condensing.
- F. Digital programmer/controller -The SSS shall be provided with a door mounted alpha-numeric human interface module (HIM) digital display with keypad to view and adjust the following diagnostic and status registers:
1. Volts AC per phase.
 2. Current per phase.
 3. Watts.
 4. KWH.
 5. Power Factor.
- G. Adjustments - The following setting ranges shall be provided and made independently accessible for operator adjustment:
1. Overvoltage level/delay.
 2. Undervoltage level/delay.
 3. Current unbalance level/delay.
 4. Underload level/delay
 5. Phase reversal
 6. Jam level/delay.
 7. Starts per hour.
 8. Backspin delay.
 9. Ramp times (start and stop).
 10. Motor code letter
 11. Overload class
 12. Motor FLA
 13. Motor Service Factor.
- H. Input and Output Terminations - The SSS assembly shall have terminals for input and output cabling as defined in the Conduit and Wire Schedule as shown on the Contract Electrical Drawings.
- I. Communications – The SSS shall include an Ethernet TCP/IP communications module for interface to the PLC. All settable parameters and instantaneous operational registers shall be accessible from the communications port. The VFD supplier shall assist the Operator Station Programmer in configuration and commissioning of communications.
1. Metering registers to include:
 - a. 3 phase voltage and current

- b. Power in KW, KWH and Power factor
- c. Elapsed motor run time

J. Features - The SSS assembly shall have the following features:

1. Bypass Contactor Control - The SSS shall be capable of controlling a bypass motor contactor to allow motor current to flow around the soft starter, through the contactor, and to the motor. Once the motor is up to speed, the contactor shall be closed and held until a fault or stop command. In this mode, no current will flow through the soft starter power terminals but shall remain in the "on" state. An external current sensing module shall monitor the motor current to maintain the diagnostic, fault and control functions. Upon shutdown, the bypass contactor shall open and allow the soft starter to ramp down the motor. Provide sensing module as required per one-line or elementary diagram.
2. Phase rebalance - If enabled, the soft starter shall monitor the incoming three-phase line voltage and automatically adjust the output voltage to balance the three phase currents drawn by the motor.
3. Connection of the three incoming line leads and three-motor leads shall be the only connections necessary for manual operation of the SSS unit. All other wiring shall be prewired at the factory and self-contained within the SSS unit. A 120 VAC control power transformer and other auxiliary power supplies shall be provided with the SSS assembly for power to pilot lights, meters, relays, and miscellaneous devices specified to be supplied with the SSS. Lugs shall be provided for connection of all power leads; terminal blocks shall be provided for all other wiring.
4. The SSS shall be protected by a circuit breaker disconnect. The disconnect shall be externally operated and shall have an operator mechanism that is an integral part of the enclosure. An operator mechanism shall be provided to allow padlocking the disconnect in the "off" position with up to two padlocks.
5. AC input fuses shall be provided on the line and/or load side of the SSS (if required by the manufacturer) to isolate the SSS power circuitry upon a fault condition.
6. Transient and surge voltage power line input protection shall be provided for the SSS through use of metal oxide varistors (MOVs), surge protective module, or other approved equal methods. Transient protection integral to the SSS shall be provided to a minimum of 1,600 volts, 220 joules without failure. The transient protection shall meet or exceed ANSI C7, 90-1971 and IEEE 472-1974 Standards without failure. Failure is defined as loss of components in the SSS including power SCRs and fuses. The SSS shall be protected from the following, as a minimum, power line transients and recover to automatically restart and resume normal operation without posting a fault:
 - a. Switching the primary of a power transformer.

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- b. Switching power factor correction capacitors "ON" and "OFF" line.
 - c. De-energization or energization of contactors, relays, and other power equipment from the power line.
 - d. Starting and stopping of other motors when powered from Utility.
 - 7. Opening of the SSS's input switches, or breakers while the SSS is operating under load shall not result in damage to the SSS power or control circuit components.
 - 8. The SSS shall be capable of starting and operating without a motor load connected.
 - 9. Phase loss, reversal, undervoltage, overvoltage, and unbalance motor protection shall be provided built in to the SSS.
 - 10. External motor overload protection shall be required per drawings. External overload shall be solid state and adjustable. Provide Allen Bradley SMP-3 or equal.
 - 11. Any configuration of adjustments or controls not set by a switch or potentiometer shall be stored in nonvolatile memory. No configuration information shall be lost due to power failures of any duration.
 - 12. The SSS shall be capable of starting into a rotating motor without tripping out on a fault.
 - 13. Digital Programmer/Controller (HIM) shall be provided and remote door mounted. Remote serial interface shall be suitable for communication via Allen-Bradley standard protocol. Cable for remote digital programmer/controller shall be supplied. The remote controller shall be mounted and housed to maintain the NEMA 12 door rating.
 - 14. Laptop programming connectivity shall be provided to access the drives internal parameters. Provide a USB or RS232 serial converter device and cable for connection to the laptop. Provide programming software as necessary to allow upload/download of data parameters and view current drive status. Provide Allen Bradley Drive Tools software and 1203 USB converter, or approved equal to match drive being submitted.
- K. Enclosure - The enclosure shall be free standing, and stand-alone as shown on the drawings. All components shall be accessible from the front of the enclosure. Rear or side access shall not be required in order to remove or service any component. The enclosure shall include the following in its construction:
- 1. The SSS shall incorporate fans for cooling. The air flow through the SSS compartment shall provide proper cooling of the operating SSS at an ambient temperature of 104° F. The thermostat shall be monitor and regulate air temperature in the SSS enclosure. Thermostat shall have bi-metallic adjustable set point range of 30 to 140° F.

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Thermostat shall have a switching capacity of 10A at 120 VAC. Provide Hoffman A-TEMNO temperature switch or approved equal to operate fans.

2. The complete SSS unit, including the enclosure assembly, shall be UL listed for a minimum of 42,000 RMS symmetrical ampere fault withstand capability or as otherwise shown on the drawings. SSS assemblies consisting of the SSS, enclosure and all accessories that are not UL listed will not be approved.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].
- B. Requirements of Related Electrical Sections apply to design, documentation construction and assembly of Solid State Soft Starters.
- C. Perform work to remedy non-compliant installations after inspection.

3.02 FIELD ASSISTANCE

- A. Testing, checkout and start-up of the solid state starter equipment shall be performed under the technical direction of a factory trained authorized representative.
 1. The setup and programming of the SSS shall be provided by a factory-trained representative who is authorized by the SSS manufacturer to perform the startup. This setup and programming shall be done prior to and during the first application of power to the motor. The SSS electronic motor overload protection shall be set to meet the motor nameplate and NEC Code requirements.
 2. Provide testing as specified in Electrical Specifications [Factory and Field Testing].
- B. Provide 1 hour of "SSS Setup" Training on operating and maintenance procedures.

3.03 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

END OF SECTION

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SECTION 16600

FACTORY AND FIELD TESTING

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. This division defines factory and field testing requirements of electrical and instrumentation equipment and as specified in this section and in Electrical Specifications. All equipment provided under Electrical Specifications and electrical equipment provided under other sections shall be tested as specified herein.
- B. The Electrical Contractor shall coordinate at no additional cost to the Owner, the services of an approved qualified third party independent testing company for the purpose of performing specific tests as outlined in EXECUTION, Field Test of this section.
- C. The System Integrator, Testing Company and/or Electrical Contractor shall provide all labor, tools, material, power, and technical supervision to perform the specified tests and inspections.
- D. The Electrical Contractor shall be present during field testing and assist the System Integrator and/or Testing Company in testing all equipment. The Electrical Contractor shall be ready to correct any wiring problems found during testing.
- E. The Application Programmer (defined in Electrical Specifications [Electrical General].) and/or Construction Manager will be actively engaged in Operational Testing and Commissioning. These efforts shall be combined efforts of the Application-Programmer/Construction-Manager/Engineer and Contractor. The Contractor shall facilitate test as outlined herein such that hardware, software and application programming are tested completely and all applicable test documentation is completed.
 - 1. Expect that field testing of plant operational testing, SCADA and PLC checkout, is going to require 2 weeks after pre-operational tests are done. Contractor and System Integrator shall assist in this start-up. Coordinate with Owner Representative to schedule this start-up period.
- F. It is the intent of these tests to ensure that all equipment is operational within industry and manufacturer's tolerances and is assembled in accordance with design plans and Specifications.
- G. All tests shall be documented in writing by the person performing the test on the test forms submitted (and similar to those shown at the end of this section) and signed by the Engineer as satisfactorily completed. The Testing Company, Electrical Contractor or System Integrator performing tests shall keep a detailed log of all tests that failed or did not meet Specifications, including date of occurrence and correction.
- H. The Contractor shall perform all applicable testing of Owner supplied or

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existing equipment as a unit and as part of a system. Testing shall include documentation and witness sign-off.

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Project Drawings
- C. Additional testing may be specified in other Electrical Specifications.

1.03 FACTORY AND FIELD GENERAL REQUIREMENTS

A. Testing General

- 1. Prior to any field testing Operation & Maintenance Manuals shall have been submitted and approved.
- 2. The test forms shall be completed by the contractor during testing and calibration of all equipment. All tests shall be witnessed by the Owner's Representative. Completed test forms shall be given to the Owner's Representative the day of the test. Complete two sets of test forms if Contractor wants to keep a copy.
- 3. The Contractor shall give the Engineer 10 working days notice of the dates and time for inspections and testing.
- 4. Include test results in the Maintenance and Operational Manual.
- 5. As a minimum, all the tests indicated/specified on the test forms shall be performed and test forms filled out by the Contractor.
- 6. Prepare and submit formal test procedures and forms at least two weeks prior to the start of testing. Testing shall not commence until the test procedures have been reviewed and approved. Submit a combined test procedure submittal with separate sections for factory and field tests.
- 7. If the results of any of tests are unacceptable, the Contractor shall make corrections and perform the tests again until they are acceptable; these tests shall be done at no additional cost.

B. Failure to Meet Test

- 1. Any system, material or workmanship which is found defective on the basis of these tests shall be reported immediately following the test. The Contractor shall replace the defective material or equipment and have tests repeated.

C. Safety

- 1. Testing shall conform to the respective manufacturer's recommendations. All manufacturers' safety precautions shall be followed.
- 2. Safety, as shown herein and in other divisions, shall be a combination

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of all methods and practices described. Safety practices may not be determined based on the least restrictive requirement, but instead, on the most restrictive requirement. Obtain clarification if there is any question prior to performing tests.

3. The procedures stated herein are guidelines for the intended tests, the Contractor shall be responsible to modify these tests to fit the particular application and ensure personnel safety. Absolutely no tests shall be performed in such a fashion that personnel safety is jeopardized.
4. The Contractor shall have two or more personnel present at all tests.
5. Two non-licensed portable radios shall be provided by the Contractor for use during testing.
6. Contractor shall comply with California Electrical Safety Orders (ESO) and Occupational Safety and Health Act (OSHA): All test and procedures shall comply with ESO and OSHA as to safety, protective clothing, clearances, padlocks and barriers around electrical equipment energized during testing.
7. The first set of tests to be performed (**pre-energization**) shall determine the suitability for energization and shall be completed with all power turned off.

1.04 QUALIFICATIONS

A. Testing Company

1. Testing company shall have been actively engaged in the type of electrical testing specified in this Division for the past three years (minimum). The Testing Company representative shall have two years experience in field testing of equipment working for the Testing Company or equivalent. The following Electrical Testing Companies are pre-approved.
 - a. EETS (916) 339-9691
 - b. Industrial Test (888)-809-8550
 - c. Emerson Electrical Reliability Services
 - d. Apparatus Testing and Engineering (916) 853-6280
 - e. Apparatus Testing and Engineering (925) 454-1363
 - f. Power Systems Testing (925) 583-2361
2. Testing Companies not listed are required to submit company and individual representative resumes for review and approval.

B. System Integrator Representative

1. The system integrator representative shall have 1 year experience in field testing of equipment working for the System Integrator or equivalent. If the representative does not demonstrate necessary experience or competence during testing or start-up, the System

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Integrator shall provide a representative meeting the required competence and experience.

C. Electrical Contractor Representative

1. The Electrician shall have 5 years minimum experience working with industrial control systems and have a Journeyman level experience rating.

1.05 SUBMITTAL REQUIREMENTS

- A. The Contractor shall ensure that the Testing Company, System Integrator, and all equipment suppliers provide the submittal documentation required in this section. Submittals shall be complete, neat, orderly, and indexed. The Contractor shall check all submittals required under this Division for the correct number of copies, adequate identification, correctness, and compliance with the Contract Specifications and Drawings, and initial all copies certifying compliance.
- B. The System Integrator shall assemble and submit for approval complete testing procedures and forms at least two weeks prior to the start of testing. Contractor is responsible for compiling testing procedures and forms from multiple sub-contractors as required.
- C. Test submittal shall include: (as applicable)
 1. Proposed procedure for operational testing whether it is performed in the factory or field. Procedure shall include method, simulated I/O requirements, bypass piping, telemetry, and necessary materials and equipment to conduct test.
 2. Test forms (for all tests, factory and field, and regardless of who performs tests). Test forms shall be electronically completed prior to submittal with entry spaces filled to the extent possible. The only remaining data that shall require completion during the test is the test data itself. Test forms shall be provided as illustrated at the end of this section or equal.
 3. Approved shop one-line, elementary diagrams and PLC I/O drawings.
 4. Control strategies photocopied at 75% reduction with room at the side of page for comments on each paragraph or control strategy.

PART 2: PRODUCTS

2.01 TEST EQUIPMENT

- A. Test equipment required to perform testing and document results shall be provided by Contractor, Testing Company or System Integrator.
- B. Test instruments shall be calibrated to references traceable to the National Institute of Standards and Technology. Instrument calibration shall be current to one year from date of start-up. Test equipment accuracy shall be at

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least twice the accuracy of instrument being calibrated. Test instrument certificates of calibration shall be on-hand and provided prior to testing.

- C. All test equipment to be used as part of the testing shall be listed in the submitted testing sheets. Contractor supplying the component or system to be tested shall provide all necessary test equipment.
- D. The overall accuracy of each input and output loop shall be checked to ensure that it is within manufacturer's Specification tolerances. In no case shall the error exceed 0.25% or 0.04 mA.

PART 3: EXECUTION

3.01 FACTORY TESTING

A. General Requirements

1. The System Integrator shall conduct a thorough and complete factory test witnessed by Engineer per the criteria specified herein. Factory test shall be held within 150 miles of project location.
2. Temporary wiring and equipment shall be provided and connected during these tests to simulate the complete assembled system.
3. The testing shall not be started until the manufacturer has completed fabrication, wiring, setup, programming; quality control testing; and can demonstrate the system is complete and operational.
4. The equipment required for factory testing shall consist of, but is not limited to, control panels, MCCs, and/or miscellaneous electrical panels as provided under this contract.
5. Two digital multimeters/signal generators (minimum +/- 0.1% accuracy) with clip-on leads shall be supplied and utilized during testing for measurement of digital and analog outputs.
6. All factory tests shall be conducted at the System Integrator's facility. All factory tests shall be completed prior to shipment to the jobsite. The equipment shall be fully assembled, and connected (and programmed) similar to as it will be installed.
7. The length of the factory testing shall be a minimum of one (1) working day(s) (8 hours per day).
8. If the equipment is not ready for factory testing, the test will be cancelled and rescheduled for a later date. The Contractor shall be responsible for paying liquidated damages for expenses incurred by the Owner Representative to come to a cancelled test. One thousand dollars (\$1000.00) in liquidated damages shall be deducted from his contract each occurrence.
9. Faulty and/or incorrect hardware or software operation of major portions of the system may, at the discretion of the Engineer, be cause

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for suspension, cancellation, or restarting of the factory test, at no additional cost to the Owner or extension in Contract time.

10. The factory test will be considered complete only when the integrated system has successfully passed all tests. No electrical equipment shall be shipped to jobsite without completed test documentation.
11. During the testing period, under the supervision of the System Integrator, the Owner's Representative shall have unlimited and unrestricted access to the usage and testing of system hardware, configuration, software, meters and tools.
12. The System Integrator shall pay all expenses incurred by his personnel including labor, material, transportation, lodging, daily subsistence, and other associated incidental costs during the factory testing.
13. Acceptance and witnessing of the factory tests does not relieve or exclude the Contractor from conforming to the requirements of the Contract Documents.
14. All modifications to documentation as a result of the factory tests shall be corrected and completed before the submittal and delivery of "Operation and Maintenance" Manuals.
15. Copies of the completed and witnessed factory testing forms shall be included in the Operation and Maintenance Manual.

B. Factory Tests

1. External network connection required to permit polling of the PLC during the Factory Test.
2. Structured Factory Tests: The associated factory tests are to be performed by the System Integrator and witnessed by the Owner's Representative. The associated test forms shall be completed during each stage of the test.
 - a. Visual and Mechanical Inspection Tests
 - b. Wiring Tests
 - 1) Contractor shall confirm correct panel wiring per System Integrator panel shop drawings. Panel shop drawings shall be compared with Contract P&IDs and other drawings to verify all hardwire logic are accounted for. Panel drawings used in factory tests shall be redlined and inserted into Factory Testing Results submittal.
 - c. MCC and Control Panel Pre-Operational Tests
 - d. Logic Controller I/O Point to Point Tests
 - e. Simulated Alarm Tests

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- 1) Simulate the digital and/or analog signals at the terminals to verify that each PLC I/O point is functional and properly programmed. Verify that all parameters (i.e., setpoints, enable/disable toggle bits, timers, etc.) for the alarms operate according to the Specifications. Multiple alarm states (i.e., LO, LO-LO, HI, HI-HI, etc.) shall be checked.
- f. Simulated Operational Control Tests
 - 1) Simulate the digital and/or analog signals at the field terminals to verify that each control system is functional and properly configured and programmed.
 - 2) Each line of control logic in the Control Strategies section shall be checked. When the complete control strategy has been checked, it shall be signed and dated by testing person and person witnessing test.
 - 3) Verify that all parameters (i.e., setpoints, runtimers, totalization, etc.) operate according to the Specifications.
3. Unstructured Factory Tests: The various unstructured tests shall include, but are not limited to, the following.
 - a. Simulate the equipment failure and power fail/restart of PLC. Check the effects of each failure on maintaining operations with the remaining equipment.
 - b. The factory tests, as a minimum, shall simulate all normal and abnormal operating conditions including steady state, change of state, variable changes, fluctuations, transients, upsets, start-up, shutdown, power failure, and equipment failure conditions.
 - c. Communications test to devices located within control panel and/or in MCCs.
 - d. Simulation of PLC communication error. Demonstrate error detection, alarming, and recovery.
 - e. Measure and test all power supplies for correct voltage. Operate rechargeable devices under battery power to test run duration, alarms and automatic recovery.

3.02 FIELD TESTING

A. General Requirements

1. Field testing is broken down into 4 components
 - a. Pre-Energization testing

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- b. Pre-Operational Testing
 - c. Operational Testing
 - d. Commissioning
2. Project wide, all Pre-Energization testing must be completed prior to Pre-Operational testing, all Pre-Operational testing must be completed prior to Operational Testing, and all Operational Testing must be completed prior to Commissioning.
 - a. Any deviation of this order, whether on a component level or larger scale, must be approved.
 - b. Out of order testing, if allowed, will be evaluated on a case-by-case basis when brought to the attention of the Owner's Representative. The Owner's Representative may require that the entire system, or portions thereof, be retested once the missing component(s) are installed and functional.
 3. All equipment supplied by the Contractor or others shall be tested by Contractor per these specifications.
 4. Two digital multimeters/signal generators (minimum +/- 0.1% accuracy) , AC current meters, torque wrench, and other specialized test equipment shall be provided by the Contractor for use during testing.
 5. If the equipment is determined not to be ready for testing, the test will be cancelled and rescheduled for a later date.
 6. Faulty and/or incorrect hardware or software operation of major portions of the system may be cause for suspension, cancellation, or restarting of the area of testing, at no additional cost or extension in Contract time.
 7. During the Operational testing period, under the supervision of the System Integrator, the Owner's Representative shall have unlimited and unrestricted access to the usage and testing of all hardware and software in the system.
 8. The System Integrator shall pay all expenses incurred by his personnel including labor, material, transportation, lodging, daily subsistence, and other associated incidental costs during field testing.
 9. Acceptance and witnessing of the tests does not relieve or exclude the Contractor from conforming to the requirements of the Contract Documents.
 10. All modifications to documentation as a result of the tests shall be corrected and completed before the delivery of "as-built" documentation.
 11. Copies of the completed and witnessed field testing forms shall be included in the Operation and Maintenance Manual.

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12. The various contractors on this project (General Contractor, Electrical Contractor, Testing Company, and System Integrator) shall assume the lead role in testing activities as listed below. The Contractor shall obtain assistance of suppliers and/or manufacturers representatives for any major equipment testing.

a. Electrical Contractor:

- 1) Pre Energization Tests
 - a) Visual Mechanical Tests
 - b) Wire Insulation and Continuity Tests.
 - c) Panelboard Tests
 - d) Breaker Tests
- 2) Operational Tests.
 - a) Generator Tests
- 3) Commissioning.

b. System Integrator:

- 1) Pre-Operational Tests
 - a) Visual Mechanical Tests
 - b) Control panel pre-operational test
 - c) MCC pre-operational test
 - d) Motor Tests.
 - e) PLC I/O point to point tests.
 - f) Instrumentation switch tests
 - g) Instrumentation transmitter tests.
- 2) Operational Tests.
- 3) Commissioning

c. Testing Company

- 1) Grounding System Tests
- 2) Breaker Device Tests
- 3) Set all breakers and protective devices per approved SSCS.

d. General Contractor

- 1) Test Scheduling
- 2) Operational Tests.
- 3) Commissioning.

e. Owner Representative (software systems)

- 1) Operational Tests.
- 2) Commissioning.

- B. Electrical Field Tests – The following test shall be performed within each test category. Complete test forms for each electrical panel, instrument, and/or device. Provide separate form for each component to be tested.

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1. Pre-Energization Inspections and Tests:
 - a. Visual and Mechanical Inspection Tests
 - b. Wire Insulation and Continuity Tests
 - c. Grounding System Tests
 - d. Panelboard Tests
 - e. Breaker Tests
 - f. Post all approved arc flash labels
2. Pre-Operational Tests:
 - a. MCC Pre-operational Tests:
 - b. Control Panel Pre-operational Tests:
 - c. Motor Testing:
 - d. Generator Testing (if generator is furnished)
 - e. Harmonic Measurement: (Required for systems with VFDs)
 - f. Instrumentation Switch Calibration Tests
 - g. Instrument Transmitter Calibration Tests
 - h. PLC I/O point tests.
 - i. Communication Tests
 - 1) The Contractor shall verify that all communications via radio, telephone, wireline, fiber optic, or other are functional and ready for operational testing. Revise all configurable parameters without additional cost to the Owner as required for an optimally functional system.
 - 2) Verify that all components of the communication system operate together under all operating and power restart conditions. If faults occur, investigate source of problem and correct. Revise all configurable parameters without additional cost to the Owner.
 - 3) Change setpoints from SCADA and confirm that corresponding field setpoint changes correctly. Check every I/O point on every screen, trend, and database.
3. Operational Tests:
 - a. After all the previous tests in this subsection are complete, the test forms are completed and signed-off, the Contractor shall conduct operational testing.
 - b. Representatives from the General Contractor, Electrical Contractor, System Integrator, and Owner's Representative shall be present during testing. Operational testing shall be performed by Contractor in the presence of the Owner's Representative.
 - c. During operational testing the Contractor shall follow the instructions of the Owner. The Owner may place restrictions on operation that must be followed by the Contractor during testing. Any accidents or fines caused by actions of the

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Contractor where warnings or restrictions were placed, shall be remedied or paid by the Contractor.

d. Alarm Tests

- 1) Generate the digital and/or analog signals at the primary device to verify that each PLC I/O point is functional and properly programmed. Verify that all parameters (i.e., setpoints, enable/disable toggle bits, timers, etc.) for the alarms operate according to the Specifications. Multiple alarm states (i.e., LO, LO-LO, HI, HI-HI, etc.) shall be checked.

e. Operational Control Tests

- 1) Generate the digital and/or analog signals at the primary device by raising or lowering the actual measured process. Inject signal into the terminals or utilize a "force" function within the device only as necessary. Verify that each control system is functional and properly configured and programmed.
- 2) Each line of control logic in the Control Strategies section shall be checked. When the complete control strategy has been checked, it shall be signed and dated by testing person and person witnessing test.
- 3) Verify that all parameters (i.e., setpoints, runtimers, totalization, etc.) operate according to the Specifications.
- 4) Verify that all data, setpoints, alarms are being received at SCADA correctly and that all I/O points on screen are true and accurate representations of field information.

f. Other Tests

- 1) Force a power failure and power fail/restart of PLC and all other systems. Check the effects of each failure on each piece of equipment and automatic recovery.
- 2) Force a PLC communication error. Demonstrate error detection, alarming, and recovery.
- 3) Perform additional operational testing that has not already been witnessed.
- 4) Perform any additional operational testing as necessary to confirm robust and error free operation under all operational conditions.

4. Trial Period

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- a. Station/Equipment shall be activated to automatically run for 5 days, 24 hours per day Monday through Friday.
- b. During the trial period the Owner's Representative will test all modes of operation and will look for errors and malfunctions. A punchlist will be generated to be completed by Contractor and re-tested prior to Commissioning.
- c. If equipment failure occurs during the trial period, the Contractor shall repair or replace the defective equipment and shall begin another trial period, Monday through Friday.
- d. This test shall be repeated until all new equipment functions acceptably and without failure for consecutive days.

C. Commissioning:

- 1. Commissioning shall not commence until Operational testing and System Training are complete with documentation submitted and with prior approval.
- 2. The Owner may delay Commissioning for a period up to 30 days, during which time all testing documentation will be reviewed and preparation for operation will be made. Costs for project delays during this review may not be forwarded on to the Owner.
- 3. Commissioning period
 - a. The new equipment shall be activated by the Contractor to operate in full automatic for 10 consecutive days, 24 hours per day. Commissioning shall only start on Mondays or Tuesdays.
 - b. During Commissioning, the Owner will monitor and run the station in normal automatic mode. If equipment failure occurs during Commissioning, the Contractor shall repair or replace the defective equipment and shall begin another commissioning period after repairs are complete.
 - c. Parallel, existing and/or back-up systems shall remain in place and functional during commissioning period. Demolition of parallel, existing or back-up systems shall not begin until commissioning is completed.
 - d. This test shall be repeated until the new equipment functions acceptably for a consecutive commissioning period.
 - e. Warranty will begin at the start of a successful commissioning period. However, if major hardware failure occurs during commissioning, the warranty and commissioning will restart once the problem has been identified and repaired.

3.03 WARRANTY:

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A. Provide warranty per Electrical Specifications [Electrical General, Warranty].

1. The completion of the above tests does not relieve the Contractor from any warranties specified in the Electrical Specifications or other sections.
2. Warranty shall begin on the start date of a successful Commissioning period.

3.04 FINAL ACCEPTANCE:

A. Final Acceptance per Electrical Specifications [Electrical General].

SECTION 16600

TEST FORMS

Index of Forms:

PC	Power Conductor Test Form
CC	Control Conductor Test Form
IC	Instrumentation Conductor Test Form
FIBER	Fiber Optic Conductor Test Form
GS	Grounding System Test Form
VM	Electrical Equipment Visual and Mechanical Inspection Form
PB	Panelboard Test Form
MCO	MCC Operational Test Form
CPO	Control Panel Operational Test Form
BD	Breaker Device Test Form
GCL	Generator Field Check List
GPT	Generator Performance Test Form
GSLD	Generator Sound Level Data Form
MOTOR	Motor Test Form
HM	Harmonic Measurement Test Form
IOP	Programmable Logic Controller I/O Point-to-Point Test Form
ISC	Instrumentation Switch Calibration Test Form
ITC	Instrumentation Transmitter Calibration Test Form

END OF SECTION

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SECTION 16905

CONTROL PANELS

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Provide and install Control Panels per Drawings.
- B. Provide complete wired and tested panel with all devices installed per the contract Drawings and as stated herein.
- C. Provide all necessary hardware, conduit, wiring, fittings, and devices to connect the control panel to equipment provided under other Sections.

1.02 REFERENCES

- A. Electrical Specifications [Electrical General].
- B. Electrical Specifications [Low Voltage Wire & Data Cable]
- C. Electrical Specifications [PLC & OI Hardware]
- D. Electrical Specifications [PLC & OI Application Programming]
- E. Electrical Specifications [Instrumentation]

1.03 SUBMITTAL REQUIREMENTS

- A. Provide submittals and Drawings as specified in Electrical Specifications [Electrical General, Submittal Requirements].
- B. Submit shop construction Drawings for the Control Panel. The following Drawings shall be provided as a minimum:
 - 1. Scaled drawings of the Control panel elevation, baseplan. The dimensions and locations of the cutouts shall be dimensioned from the bottom left corner of the door(s).
 - 2. Scaled drawings of the backpan including all mounted components and wireways.
 - 3. Wiring diagrams for AC and DC power distribution, I/O for each card in the PLC and communications block diagrams.
 - 4. Interconnection diagrams per Electrical Specifications [Electrical General].
- C. Calculations for environmental controls. Environmental controls (including air conditioners, exhaust fans, heaters and circulation fans) shall maintain interior panels temperatures within ratings of all internal equipment given the intended installation location.
 - 1. Design and install environmental control systems to meet

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requirements herein and prevent premature failure of panel internal components.

2. Environmental controls may be shown in the Drawings and shall be considered the minimum level required. Additional components or systems shall be provided to meet internal temperature requirements.
3. Environmental control systems shall prevent and control intrusion of dust and bugs through the use of filtration systems.
4. Environmental control systems shall maintain humidity below that of the external ambient air and without condensation within panel.

1.04 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Provide operating instructions as specified in Electrical Specifications [Electrical General].

PART 2: PRODUCTS

2.01 ENCLOSURE

1. The enclosure for the control panel shall be (at minimum) sized as shown in the Contract Drawings.
2. Arrangement: Where so indicated, the instruments mounted in the panels shall have the nominal size and general arrangement shown. Panel layouts and nameplates shall conform to the approved submittal.
3. Assembly: Mount all equipment on 12 ga. painted white backpan(s) that is bolted to rear (and sides) of the enclosure. Use drill and tap method for machine thread screws for all internal components on mounting panels. Provide extra mounting bolts through the rear of the structure if equipment weight exceeds backpanel mounting stud capacity.
4. Hardware: Provide door latch and accessories as detailed in the Contract Drawings or as required to meet NEMA area ratings.
 - a. Provide one or two single point latches for panels up to 36" height.
 - b. Provide 3 point latching mechanisms for panels over 36" height consisting of rotating handle with latch, extension bars with plastic wheels at ends and guide slots at top and bottom of door, or as otherwise shown on drawings.
 - c. Hinges, pins, bolts and screws shall be of 316 stainless steel only.
5. When physical size requirements for individual components are different than that detailed on the Control Panel backpan drawing, the wiring diagrams and specifications herein shall supersede the elevation

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drawing and the Contractor shall furnish additional panel width as needed to fit the electrical equipment. Deviations with sufficient evidence for the change shall be submitted for approval. The Contractor is required to provide for all equipment including spares and spaces as shown in the wiring diagrams.

6. Enclosure shall be Saginaw Floor Mounted Type 12 Enclosure SCE-72EL6018LPPL or equal.

2.02 CONTROL PANEL CIRCUIT BREAKERS

- A. Furnish circuit breakers and accessories as required per Drawings and application.
 1. Copper busbar systems, up to 480VAC, 115A, 1, 2 or 3 phase as needed for application
 2. Trip rating per Drawings or as needed for protected device. Trip curves as selected by System Integrator.
 - a. B curve magnetic trip point: 3 to 5 times the rated current, typically used for computers and electronic equipment with very low inrush loads (PLC wiring).
 - b. C curve magnetic trip point: 5 to 10 times the rated current, typically used for small transformers, pilot devices, etc.
 - c. D curve magnetic trip point: 10 to 20 times the rated current, typically used for transformers or loads with very high inductive loads.
 3. Quantity of pins and feed in lugs as required.
 4. Auxiliary contact, shunt trip as required in Drawings.
 5. Din rail mounted, 18mm width per pole, finger safe pressure plate terminals.
- B. Motor applications:
 1. UL489 for branch circuit protection up to 40A, 1 to 3 pole.
 2. 5 kAIC interrupting capacity @ 480 VAC
 3. Alltech, Eaton FAZ, or equal.
- C. Control circuit transformers and other Non-motor applications:
 1. UL1077 supplementary protection up to 63 amps, 1 to 2 pole, AC or DC.
 2. Used where a UL489 protective device is upstream powering the circuit (from a panelboard or other source).

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3. Used within control circuits for power supplies, control power transformers, relays and PLC I/O points.
4. Used in place of fuses that are applied as supplementary protection.
5. Eaton FAZ, or equal.

2.03 FUSES AND FUSE HOLDER

- A. Fuses shall not be used in branch or control circuits unless specifically shown in the drawings. Circuit breakers shall be furnished and utilized where possible.
- B. Fuses used in circuits 200 VAC and above shall be time- delay, 13/32" x 1-1/2", and have an interrupting rating of 10,000 AIC at 500 VAC. Fuses shall be Bussman type FNQ or approved equal. Fuse holders shall feature open fuse indication lights and shall be rated 30A at 600 VAC. Fuse holders shall be Bussman Optima Series OPM or equal.
- C. Fuses used in 120 VAC shall be time-delay, 1/4" x 1-1/4", and have a rating of 250 VAC. Fuses shall be Bussman type MDA or approved equal. Fuse-holders shall be of the same manufacturer, series and color as the adjacent terminal blocks and have blown fuse neon indicators. Fuse holders shall be Entrelec ML 10/13.SFL, Allen Bradley 1492-H4 or equal.
- D. Fuses used in signal and 24 VDC circuits shall be fast acting, 5mm x 20mm and have a rating of 250 VAC. Fuses shall be Bussman type GMA or approved equal. Fuse-holders shall be of the same manufacturer, series and color as the adjacent terminal blocks and have blown fuse LED indicators. Fuse holders shall be Entrelec M 4/8.SFDT, Allen Bradley- 1492-H5 or equal
- E. Fuses shall be sized in conformance with the NEC.

2.04 TERMINAL BLOCKS AND ACCESSORIES

- A. General
 1. Terminal blocks to be spring cage-clamp type, 5 spacing, 300 volt, minimum rating of 20 amps, and mounted on DIN rail. DIN rail shall be same type as used for the relays. Install extra DIN rail on each type of terminal strip with 10% spare terminals for future additions.
 - a. Provide larger terminal as necessary based on gauge of connected wiring. Those terminals with 10 gauge larger gauge wiring or more than one 12 gauge wire should be evaluated and changed.
 2. Provide terminal blocks with "follower" plates that compress the wires and have wire guide tangs for ease of maintenance. Terminal blocks that compress the wires with direct screw compression are unacceptable. All power, control and instrument wires entering and leaving a compartment shall terminate on terminal blocks with wire numbers on terminals and on both ends of the wires.

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3. Provide end clamps, separators, din rails, and jumpers to complete terminal block system. See example PLC I/O drawing for additional information. Engineer can provide on request if not available in plans.
4. Terminal Tags and Markers: Each terminal strip shall have a unique identifying alphanumeric code at one end (i.e.: TB1, TB2, etc.) or as shown in drawings.
5. Plastic marking tabs shall be provided to label each terminal block. These marking tabs shall have a unique number/letter for each terminal which is identical to the "elementary" and "loop" diagram wire designation. Numbers on these marking strip shall be machine printed and 1/8" high letters minimum.
6. Terminal blocks are grouped based upon purpose. The following terminal block designations shall be used to ensure uniformity of panels in all facilities:
 - a. • TB-1 24 VDC Power (+) Bus
 - b. • TB-2 24 VDC Common (-) Bus
 - c. • TB-3 120 VAC L1 Bus
 - d. • TB-4 120 VAC L2 Bus
 - e. • TB-5 Discrete Inputs
 - f. • TB-6 Discrete Outputs
 - g. • TB-7 Analog Inputs
 - h. • TB-8 Analog Outputs
 - i. • TB-9 110VAC Instrument Source Bus
 - j. • TB-10 UPS loads
7. Terminal blocks shall be physically separated into groups by the level of signal and voltage served an by PLC I/O card. Power and control wiring above 100 volts shall have a separate group of terminal blocks from terminal blocks for wiring below 100 volts, intermixing of these two types of wiring on the same group of terminal blocks is not allowed.
8. Terminal blocks shall be gray in color unless otherwise shown on the drawings.
9. Provide a ground terminal or connection point for each grounding conductor.
10. Provide a separate signal, common, and/or neutral terminal for every wire and PLC or remote device connection at minimum.

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- B. Terminal blocks shall be cage-clamp, screwless, DIN EN 50022 rail, 600 volt rating except for pull apart terminal blocks in MCC cubicles. Terminal blocks shall be Wago, Phoenix or equal:
1. Numbers shall be assigned to all blocks except grounding blocks. Fuse blocks shall be assigned unique tag numbers such as FU1, FU2. No two fuses shall be assigned the same tag number. Numbers shall be machine printed on WAGO plastic inserts. Fuse blocks shall also be provided with markers identifying the current rating of the fuse.
 2. Each terminal shall have a unique identifying alphanumeric code at one end (i.e.: 101, 102, etc.). Terminal numbers shall be assigned starting lowest number at one end, incrementing sequentially to higher numbers (i.e: 1,2,3,4....). These terminals shall have a unique number/letter for each terminal which is identical to the "elementary" and "loop" diagram wire designation. Numbers on this marking strip shall be machine printed on WAGO plastic inserts.
 3. Terminal blocks shall be physically separated into groups by the level of signal and voltage served. Power and control wiring above 100 volts shall have a separate group of terminal blocks from terminal blocks for wiring below 100 volts, intermixing of these two types of wiring on the same group of terminal blocks is not allowed.
 4. As a minimum, provide a ground terminal or connection point for the power system grounding conductor, for each terminal block group.
 5. Provide a separate common or neutral terminal for every two (maximum) inputs and/or outputs.
- C. MCC – Motor Starter Cubicle Terminal Blocks
1. MCC cubicle terminal blocks shall be pull apart as supplied standard by MCC manufacturer.
- D. Power – Power terminal Blocks
1. Backpan mounted termination blocks shall be rated for 600V (min). The power termination blocks shall be rated to accept Copper or Aluminum cable and rated as shown on Contract one-line diagrams. Termination blocks shall be insulated with molded plastic covering and finger safe cover. Each termination block shall be provided with quantity and size of primary and secondary cable connections as required per installation. The power termination blocks shall be Erico UD, UDJ, BD, TD, or SB series or equal.
 2. Unmounted termination blocks shall be constructed of aluminum and suitable for use with Aluminum and copper wire. Size and quantity of cable connections shall be as required for installation. Termination blocks shall be insulated with molded high-dielectric strength plastic covering and eliminate the need for tape insulation of electric connection. The termination block shall have removable access plugs over the wire entry and hex screw ports. Provide NSI Polaris IPL or

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IPLD Series terminal blocks or equal.

E. PANEL GROUND

1. Each electrical enclosure shall have a copper ground bus. Screw type fasteners shall be provided on all ground busses for connection of grounding conductors. Ground bus shall be a Challenger GB series, ILSCO CAN series or equal.
2. A 12ga. copper ground wire shall be attached between the ground bar and the panel enclosure, and between the ground bar and the mounting panels. The ground connection to the enclosure and panel shall be made by sanding the paint finish off a small area, drilling a hole for a 0.25 inch bolt and mounting a 0.25-20 bolt to the panel to serve as grounding stud. The grounding stud shall be attached with a nut and flat washers on both sides of the enclosure/panel, and with an inside tooth star lock washer next to the panel surface. The star lock washer shall be on the inside surface of the enclosure, and the front surface of the mounting panel. The grounding wire shall be secured to the stud with a nut and inside tooth star lock washer. These grounding points shall be located within 12 inches of the bottom to the grounding bar. Each terminal strip rail shall be individually grounded by means of a #12 AWG wire to the ground bus.
3. Components within the panel shall be grounded according to the manufacturer's recommendations.

2.05 POWER SUPPLIES

A. Uninterruptible Power Supply (UPS)

1. The UPS shall be installed within the control panel and power all process related 120 VAC devices and DC power supplies.
2. The UPS capacity/size shall be as shown in the contract Drawings. The battery capacity shall be such that it may provide nameplate power for 10 minutes (min) from a fully charged battery(s).
3. The UPS shall provide surge protection and filtering: 0.3% IEEE surge let-through, zero clamping response time to meet UL 1449. The inverter shall provide true sine wave output.
4. When the Utility power voltage is outside of a preset range (approx. $<100 < V < 130$ VAC) then the UPS shall power the load from storage batteries and a solid state inverter.
5. The power supply shall be wired into the control panel power circuit per the contract Drawings.
6. The UPS operating ambient temperature range shall be 32 deg F to 122 deg F minimum.
7. The inverter shall be self resetting and continuously on-line regardless

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of the Utility power existence. Configure the UPS to restart automatically upon restart of utility power without operator intervention. The rectifier/charger shall recharge and maintain float charge on the batteries automatically.

8. The UPS shall be of a readily available commercial manufacturer. Provide American Power Conversion Smart UPS, Marathon Vault Series, or equal.

B. DC Power Supply (PS)

1. The DC power supply shall utilize a switching power stage, rectifier and voltage regulator. The power supply case shall be DIN rail mountable.
2. The power supply shall operate on 120V AC and provide DC output voltage and current as shown in the Contract Drawings.
3. The power supply shall be wired and fused per manufacturer instructions and Contract Drawings. Power supply output shall include self resetting overcurrent protection.
4. Power supplies below 101 Watts output power shall be Class 2 rated.
5. The power supply shall provide 2% voltage regulation for a change of 10% load to 100% full load.
6. The DC power supply shall be IDEC PS5R Series, Phoenix Contact Quint Power, Genesis Automation GDA, or equal.

2.06 MISCELLANEOUS COMPONENTS

- A. Wireway: Manufactured from light gray rigid PVC suitable for continuous use at temperatures up to 50 deg C. Wireway shall be 2" height, width as required with 0.5" slot spacing with removable covers. Provide Panduit type "F" or equal.
- B. LED Strip Light: The LED light shall be an "under cabinet" style with multiple LED lamps and acrylic diffuser. Lamp shall be switched on/off from integral switch or PIR motion sensor. Light housing shall be capable of magnet mount to top or side of enclosure or will include mounting tabs for mounting to brackets. Lamp shall be powered from 120VAC or from 24~48 VDC or shown in the contract drawings. LED Strip Light shall be Stego 02540, or equal.
- C. Circulation Fans: The control panel temperature shall be maintained 10 deg. F below lowest internal device's temperature rating. The fans shall be 4" or 6" unless otherwise noted on Contract Drawings. The Contractor shall calculate the heat generation of all internal components and determine if the fans submitted will meet the cooling requirements of the internal components. Circulation fans shall include louver with filter and bug screen for outdoor installations.
- D. Forced Air Heater: The control panel temperature shall be kept above 50 deg. F through the use of a resistive forced air heater when the panel is

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located outdoors. The heater shall contain a fan, heating elements, and thermostat within a single self contained unit. The wattage of the heater shall be as calculated by the supplier using the manufacturers sizing method to meet the temperature requirements. The heater shall be Hoffman D-AH series, or equal.

- E. Thermostats: The air circulation fans shall be controlled by adjustable thermostat. The thermostat shall be mounted near the top of the panel and easily accessible by a technician. The thermostat shall be capable of control of a heater or cooling fan(s) by selecting the proper contact logic. The thermostat range shall be adjustable from 30 to 140 deg F. Thermostat shall be Hoffman A-TEMxx, or equal.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].

3.02 FABRICATION

- A. Equipment Mounting:

1. Mount all equipment using manufacturers mounting tabs/holes or brackets where possible. Where not possible, construct custom brackets to panel mount or backpan mount components as shown in the Contract Drawings.
2. Equipment or laptop shelves shall be provided where shown on the Contract Drawings. Equipment shown on shelves shall not be placed on the bottom of the panel after field installation.
3. All nuts, bolts, screws, washers and hinges used in the panel shall be stainless steel. All components shall be mounted using bolts or screw fasteners only which are drilled and tapped into the backpan. Pop rivets shall not be allowed within panel except for enclosure support arms.

- B. Environmental:

1. Control panel environmental accessories including fans, louvers, filters, bugscreens, air conditioners, etc. shall be provided as noted in the Drawings and as necessary for a complete environmental solution.
2. Panels environmental controls shall be designed during shop drawing submittal and fabricated to maintain temperatures 10 degrees F below lowest internal equipment maximum temperature rating.
3. Contractor shall provide [additional] fans, louvers, screens, sunshades, air conditioners, etc. as necessary to prevent equipment malfunction or premature failure. Provide associated wiring and thermostats as needed.

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4. Environments:

- a. NEMA 4X rated panels shall be cooled/heated with closed loop type conditioning systems to include air conditioners, internal panel circulation fans and resistive heaters.
- b. NEMA 3R rated outdoor panels shall be cooled/heated with open loop type conditioning systems to include air conditioners, exhaust fans and louvers, internal panel circulation fans and resistive heaters. All exhaust fans and louvers shall include filters and bugscreens.
- c. NEMA 12 or 1 rated indoor panels shall be cooled/heated with open loop type conditioning systems to include air conditioners, exhaust fans and louvers, internal panel circulation fans and resistive heaters. All exhaust fans and louvers shall include filters and bugscreens.

C. Wiring:

1. Panel Wiring: All wiring shall be installed in wireways between terminal blocks, PLC, and devices. Reference Contract Drawings for control panel power distribution diagram and control panel elementary diagrams.

3.03 INSTALLATION

A. Wiring:

1. Install all equipment per Electrical Specifications [Electrical General].
2. All internal and field wiring shall be per Electrical Specifications [Low Voltage Wire].
3. Panel Wiring: All wiring shall be installed in wireways between terminal blocks and devices. Reference Contract Drawings for Control panel power distribution diagram and control panel elementary diagrams.
4. Field Wiring: Wireways shall be provided for field wiring. Reference Contract Drawings for control panel power distribution diagram and control panel elementary diagrams.

B. Cleaning:

1. The Contractor shall clean the inside of the control panel of any dust or debris remaining at the completion of installation and testing.
2. The Contractor shall exercise care when using a vacuum cleaner or compressed air such as not to damage any component within the panel.
3. Many electrical and computer components are open for ventilation.

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Falling debris can penetrate the openings and cause equipment failure. Equipment with debris inside shall be removed, cleaned and/or replaced.

3.04 FIELD ASSISTANCE

- A. Provide testing as specified in Electrical Specifications [Factory and Field Testing].

3.05 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

3.06 FINAL ACCEPTANCE

- A. Final Acceptance per Electrical Specifications [Electrical General].

END OF SECTION

SECTION 16910

PLC HARDWARE

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Providing and installing Programmable Logic Controller (PLC) Hardware and all supporting hardware, wiring and devices as specified in Electrical Specifications.

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Low Voltage Wire and Data Cable]
- C. Electrical Specifications [PLC Application Programming]

1.03 SUBMITTAL REQUIREMENTS

- A. Provide submittals per Electrical Specifications [Electrical General, Submittal Requirements].
- B. Submit documentation showing the number and type of I/O modules required to meet the I/O requirements specified herein. Include complete manufacturer's part and model numbers.
 - 1. PLC I/O points are determined by the P&ID drawings. The Contractor shall count and total the PLC I/O points per PLC controller and per type of I/O required based on the P&ID diagrams. Provide 25% spare I/O points per I/O type per PLC.
- C. Submit calculations showing that the power supply meets the specified requirements and the requirements of the devices powered.
- D. Submit shop drawings showing physical backpan layout of equipment in Control Panel.
- E. Submit PLC communications block diagram showing I/O module order and slot location.
- F. Submit hardware Operations and Maintenance Manual per Electrical Specifications [Electrical General].

PART 2: PRODUCTS

2.01 GENERAL

- A. Provide PLC modules from a single family of products, using the same software and interchangeable I/O cards, that can be configured for a range of applications from small, uncomplicated sites to large, complex sites with a variety of equipment.

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- B. Size the PLC enclosure such that local I/O modules and supporting hardware required to meet the ultimate point count, as specified herein, will fit into the space of a single enclosure.

2.02 MECHANICAL

- A. Provide modular PLC consisting of I/O slot card cage, and plug-in processor, power supply, and I/O modules.
- B. Provide I/O modules with removable terminal strips so that I/O modules can be removed without disconnecting field wiring.

2.03 PLC COMPONENTS

- A. The following components (Modicon M340, no equal) shall be provided to complete the PLC systems. Only major components are listed. Multiples of some components are required - see Contract drawings.
 - 1. Processor Modbus Serial, Ethernet (M340 P34 2020)
 - 2. Flash Memory card Compact Flash 8Mb min (BMX RMS 008MP)
 - 3. USB Cordset Mini B USB port cable (BMX XCA USB H0••)
 - 4. Power Supply BMX CPS •0•0 as required
 - 5. Digital Input Module (16-DC) BMX DDI 1602
 - 6. Digital Output Module (16-DC) BMX DDO 1602
 - 7. Analog Input Module (4-20mA) BMX AMI 0810
 - 8. Analog Output Module (4-20mA) BMX AMO 0410
 - 9. Rack (12 slot) BMX XBP 1200
 - 10. Protective Covers BMXXEM010

2.04 ISOLATION/INTERFACE RELAYS

- A. Provide output isolation relays on all digital outputs that operate devices external to the control panel and on spare outputs or as otherwise shown in the drawings. The relay coil connection shall be on one side of the relay base and form-C output contacts on the other.
- B. Relays shall be 6A SPDT, coil voltage as required, indicating, plug in style as manufactured by Allen Bradley 700-HLT1U1 or equal. Provide jumper bars for common buss connections, Allen Bradley 700-TBJ20G, or equal.

2.05 ETHERNET SWITCH

- A. The unmanaged Ethernet switch shall have 8 ports with automatic uplink detection and OPC monitoring capability. Ports shall be auto-sensing 10/100/1000 Base-Tx with RJ-45, 8 pin female connectors, meeting IEEE 802.3 standards. Case shall be ventilated steel with provisions for wall or DIN rail mounting. Switch shall be suitable for power from 10 - 30 VDC. Switch shall be N-TRON 1008TX-N, no equal.
- B. The unmanaged fiber optic Ethernet switch shall have 2 SC fiber optic ports and 8 copper ports with automatic uplink detection. Ports shall be auto-sensing 10/100 Base-Tx with RJ-45, 8 pin female connectors, and one 10/100 base FX, meeting IEEE 802.3 standards. Case shall be ventilated steel with

provisions for wall or DIN rail mounting. Switch shall be suitable for power from 10 - 30 VDC. Switch shall be N-TRON 110FX2-SC, or equal.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].

3.02 INSTALLATION

- A. Fabrication
 - 1. Mount, wire and Ground PLC per manufacturer's recommendations.
 - 2. Organize equipment on control panel backpan per Backpan Layout detail in Contract drawings.
 - 3. Locate and install PLC(s) per Contract drawings.
- B. Wiring
 - 1. Terminate status, control and analog wiring on terminal blocks.
 - 2. Label and wire PLC to terminal blocks per Electrical Specifications [Wire, Fuses & Terminal Block] and Example I/O Wiring Diagram in the drawings.
 - 3. All spare I/O points shall be wired to terminal blocks.
 - 4. Install communication cables to connect the PLC to external devices.
 - 5. Bundle and tie down wires in a neat and orderly manner.
 - 6. Terminate drain wire of shielded cables at backpan terminal block only.

3.03 FIELD ASSISTANCE

- A. Provide testing as specified in Electrical Specifications [Factory and Field Testing].

3.04 WARRANTY

- A. Provide warranty per Electrical Specifications [Electrical General, Warranty].
- B. Perform the following services during the warranty period:
 - 1. Repair or replace damaged modules returned for service within 24 hours.
 - 2. Determine and report the cause of failure of modules returned for service.
 - 3. Resolve design or implementation problems discovered.

3.05 FINAL ACCEPTANCE

- A. Final Acceptance per Electrical Specifications [Electrical General].

END OF SECTION

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SECTION 16931
SECURITY SYSTEM

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. To be designed by Contractor similar to other City installations.
- B. Johnson Controls is preferred vendor.
- C. Work includes that specified in Electrical Specifications [Electrical General].

1.02 SUBMITTAL REQUIREMENTS

- A. Provide submittals and drawings as specified in Electrical Specifications [Electrical General, Submittal Requirements].
- B. Provide installation, operation and maintenance manuals.
- C. Provide programming manuals.

1.03 OPERATION AND MAINTENANCE INFORMATION

- A. Submit hardware Operations and Maintenance Manual per Electrical Specifications [Electrical General].

PART 2: PRODUCTS

2.01 SECURITY ALARM SYSTEM

- A. The Security Alarm Panel shall be surface wall-mounted, NEMA rated enclosure as shown in the electrical drawings and details and as specified herein.
- B. The security alarm system shall monitor alarm zone inputs and provide alarm locally and to remote reporting service upon breach of those inputs.
- C. The alarm system shall be enabled/disabled through Operator password input to the keypad.
- D. The security alarm panel shall consist of a base module, communications module, access module, zone alarm I/O modules, battery system, auxiliary relays, and remaining necessary panel components for system operation as described herein and shown in the plans.
- E. The security alarm panel shall supervise quantity of zones as defined in the P&IDs and shall be programmable by keypad. Each zone shall be programmable for latching or momentary conditions and have an LED status indicator.

- F. The security alarm panel shall be capable of dialing telephone number(s) to transmit alarms to a central operator.
- G. The Security Alarm Panel shall have the following minimum features:
 - 1. Have an assignable alarm zones for instant, delayed or motion alarms. Provide I/O capacity minimum to incorporate individual alarm I/O as shown in the electrical drawings and capability to expand to 64 alarm contacts minimum.
 - 2. The input power shall be 120 VAC, 60 Hz to a wall pack power supply. Providing a secondary voltage to the alarm mother board and auxiliary daughter boards. The panel shall contain backup battery power with battery charger and batteries. Batteries shall provide a minimum of 4 hours of backup power to the complete system.
 - 3. System shall provide status outputs (form C, 120 vac dry contact) defined as "alarm active" and "alarm set" for connection to the station control system.
 - 4. System shall accept a dry contact input from station control system for alarm toggle to turn the alarm on and off remotely through the station control system.
 - 5. Central station-based access control and reporting of alarm conditions, programming and monitoring of the security alarm system.
 - 6. Keypad display and operator interface.
- H. Provide Gemini X255 system or equal.

2.02 BASE MODULE

- A. The Base Module shall be the primary control unit for the security alarm system and shall interface with all other modules, devices, and provide communication with the central station-monitoring console.
 - 1. Arm/Disarm function that shall have the following features:
 - a. Up to 16 LCD and/or LED keypads, and automatic, automatic no-dial, or secure arming functions.
 - 2. Primary power shall be 120 Volts AC, 60 Hz, using 16.5 VAC, 50 VA, class 2 plug-in transformer. Backup battery power shall be a 12 VDC, 7 AH, sealed lead-acid rechargeable battery system with internal battery charger.
 - 3. Communications with Central Station includes Base Module RS-485 Port. The Base Module shall support alarm points which includes:
 - a. 16 total LCD and/or LED keypads.
 - b. Eight Expansion Modules.

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- c. Programmable alarm codes.
- d. Programmable access and arming.
- 4. Module shall have telephone line features such as dedicated and dial line settings, and RJ31X jack connection.
- 5. Annunciation shall include a local bell drive with 12 VDC at 1.25 Amp maximum, audible keypad beeper, and audio sensor annunciate Watch Mode & Entry/Exit.
- 6. Base Module shall be UL Listed and approved.
- 7. Base Module shall be Sonitrol to match Owner Standard.

2.03 ACCESS MODULE

- A. The Access Module shall add central station-based access control to the security alarm system. The Base Module shall interface and control the Access Module. The Access module shall have the minimum features:
 - 1. General features shall include:
 - a. Access control for up to 10,000 users, with 256 Access Levels.
 - b. 128 programmable Time Shifts & Time Periods per property.
 - c. Programmable outputs to control equipment, such as HVAC and lighting.
 - d. 8,000 event local buffer memory.
 - 2. There shall be 16 programmable (N.O., N.C. or both), supervised, hard-wired Alarm Loops featuring:
 - a. Four programmable door inputs.
 - b. 10 programmable, general-purpose alarm inputs.
 - c. One tamper input.
 - d. One global free-exit input (for fire evacuation).
 - e. Programmable alarm codes.
 - f. Assignable to any of eight separate arming zones.
 - 3. Auxiliary Outputs shall feature:
 - a. Six, 100mA, programmable hard-wired outputs.
 - b. One auxiliary output per access controlled door (four total).

- c. Two auxiliary outputs for general control.
4. Communications Access Module shall be RS-485 Port.
5. Access Module shall be UL Approved.
6. Access Module shall be Sonitrol to match Owner Standard.

2.04 SMART AUDIO MODULE

- A. The Smart Audio Module shall screen out common environmental sounds through the continuous scanning its audio channels. The Smart Audio Module shall analyze sounds according to a predetermined set of audio standards and when a noise is determined to be a possible intrusion, the central station shall be contacted. The Base Module shall interface and control up to eight SmartAudio or ListenIn Modules. The Audio Module shall be mounted locally inside Base module chassis.
 1. Audio functions shall feature:
 - a. Eight audio detection circuits.
 - b. Audio detectors assignable to any of eight separate arming zones.
 - c. Sensitivity adjustable from central station.
 - d. 16 audio sensor inputs (two per audio detection circuit).
 - e. Programmable audio sensor self-test at system arming and disarming.
 - f. Balanced audio output to Base Module.
 2. Communications Smart Audio Module shall be RS-485 Port.
 3. Smart Audio Module shall be Sonitrol Smart Audio Module to match Owner Standard.

2.05 LCD KEYPAD AND DISPLAY

- A. LCD keypad shall have the following minimum features:
 1. LCD type display with Wiegand or similar communication compatible with alarm system main control module.
 2. Operating temperature of 0 to 122 degrees F.
 3. Display shall be Alphanumeric LCD display with English description of alarm zone or other diagnostic information. Keypad shall have silicone rubber keys with numeric digits and shortcut keys for setting alarm and programming.

2.06 AUDIO SENSORS

- A. Determine all sensor placement locations, mounting necessary, and all environmental conditions that shall determine the working coverage area and distance for each audio sensor. Provide interface of sensors with the Smart Audio Module. The Audio Sensors shall have the following minimum features:
 - 1. Input power 12 VDC.
 - 2. Constructed with ABS plastic housing.
 - 3. Tamper switch rated to 500mA at 30 VDC.
 - 4. Coverage area shall be approximately 50 feet in front, 40 feet to each side and 15 feet to the rear.
- B. Audio Sensors shall be Sonitrol plus AudioSensor to match Owner Standard.

2.07 SECURITY DOOR SWITCHES

- A. Provide interface of all switches with the Smart Audio Module and determine all switch placement locations and all switch mounting as necessary.
- B. Security Door Switch
 - 1. Each security steel door switch shall have a wide gap magnetic sensor with S.P.D.T. contacts mounted an ABS in housing. Security door switch shall be Sentrol 1076 with color matching door.
 - a. Each security door switch shall be a recessed hermetically sealed magnetic reed switch with S.P.D.T. contacts. The reed shall be plotted in the contact housing with a polyurethane based compound and contact and magnet housing shall snap-lock into a $\frac{3}{4}$ " or 1" diameter hole. Contact and the magnet plastic housings shall be constructed from one piece of thick walled ABS plastic for maximum strength and durability. Housings shall be off-white in color. The magnet shall be made of Alnico
 - 1) The Rare Earth Magnet shall be made of neodymium iron boron.
 - b. Security door switches shall be designed for use in steel doors and shall have snap-lock insulation bushing for tight fit and maximum gap in steel. Magnetic switch shall be an A type contact, closed loop two wire suitable for security alarm systems, and shall be rated at 100 VAC, 0.5A maximum, 7.5 Watts maximum.
 - c. Security door switch shall be Sentrol R1078C series or equal.
- C. Overhead Door Magnetic Security Switch

1. Each overhead door security switch shall be designed specifically for panel or sectional style overhead doors. Contact shall have an integrated mounting bracket that is adjustable to fit most door channel widths. The contacts shall be constructed with a rugged extruded aluminum housing potted with a polyurethane potting compound, which shall make the unit corrosion resistant. Magnetic switch shall be an A type contact, closed loop two wire suitable for security alarm systems, and shall be rated at 100 VAC, 0.5A maximum, 7.5 Watts maximum.
2. Security overhead door switch shall be Sentrol 2315 series or equal.

2.08 ALARM SIREN

- A. Alarm siren shall meet the following requirements:
 1. 12 VDC, 1.9 Amps and with sound output of 112 dBA at 10 ft.
 2. Polycarbonate housing with rust proof screw, "potted" electronics condensation drainage holes making siren corrosion resistant.
 3. Alarm siren shall be protected against foam injection, removal of cover or prying from the wall, and provide a "hold-off" circuit which activates the siren from internal battery if external wiring is cut.
 4. Tone Module: Wail – Conventional Siren.
- B. Alarm Siren shall be Sentrol AS 395 series or equal.

2.09 SECURITY ALARM PANEL ZONES

- A. The sensors shall be connected to 16 distinct zones as submitted and approved.
- B. See Contract Drawing P5 for the Security Alarm System Block Diagrams.

2.10 CARD READER

- A. Card Reader shall be outdoor rated, compatible with door mullions. Reader shall recognize card formats up to 85 bits. Card reader shall be HID ProxPoint Plus to match Owner standard.

2.11 PROXIMITY DEVICE

- A. Handheld proximity device shall be small enough to fit on a key ring, contain a programmable ID number and be compatible with card reader. Provide thirty (30) HID ProxKey II devices to match Owner standard.

2.12 ELECTRIC STRIKE PLATE

- A. Electric strike shall be provided with 12/24V dual voltage solenoid, adjustable keeper and adjustable fail-safe/fail-serve. Electric Strike shall be Von-Duprin 5100 series to match Owner standard.

2.13 MOTION DETECTORS

- A. Motion detector shall suitable for indoor use and use dual technology to detect motion. Provide Gemini GEM-DT or equal.

2.14 LIGHT BEAMS

- A. Light beams shall detect the intruders by emitting a light from one unit to be received by a similar unit. In the event the beam of light between the devices is broken, the alarm output shall trigger.
- B. Features:
 - 1. Capable of outdoor ranges up to 500 ft with automatic gain control.
 - 2. Twin infrared transmitters and receivers to reduce the potential for alarms from small animals, blowing debris and falling leaves.
 - 3. Light beams operate by only triggering an alarm when both beams are broken simultaneously.
 - 4. Adjustable beam interruption time 50 to 500 mSec.
 - 5. Viewfinder and voltage meter jacks to aid in installation setup.
 - 6. Power input from 10.5 to 30 VDC, 50mA.
 - 7. Form C alarm output contact, 1 A, 30 VDC.
 - 8. Wall or pole mounting.
 - 9. Adjustable beam alignment up to +/- 10 degrees from horizontal.
 - 10. Suitable for outdoor installation in full sun with operational temperature range from -13 to 131 deg F.
- C. Light beams shall be Optex AX-500PLUS or equal.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].
- B. Requirements of Electrical Specifications Sections apply to design, documentation construction, configuration and testing and assembly the alarm systems.
- C. Perform work to remedy non-compliant installations after inspection.

3.02 INSTALLATION

- A. Wire control panels in field utilizing terminal blocks for all field connections in main panels.
- B. Make final connections at field devices and adjust for proper operation.
- C. Test entire system for operation. Each remote trip function shall be tested to produce alarm and be noted on display.
- D. See electrical symbols and abbreviations drawing for symbol definition.
- E. All work shall conform to local codes and 1999 National Electric Code.

3.03 FIELD ASSISTANCE

- A. Testing, checkout and start-up of the security system shall be performed under the technical direction of a factory trained authorized manufacturer representative.
- B. Document the setup and configuration of parameters within the security system for review and as-built documentation.
- C. Provide 1 hour of "System Setup" Training on operating and maintenance procedures.

3.04 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

END OF SECTION

SECTION 16932

ACCESS CONTROL SYSTEM

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Labor, materials, equipment, tools, safety gear, test equipment, incidentals, services, and transportation for a complete electro-mechanical installation as shown on the Drawings, included in these Specifications, or as can be reasonably implied from project descriptions.
- B. To be designed by Contractor similar to other City installations.
- C. Johnson Controls is preferred vendor.
- D. The Access Control System scope of work includes:
 - 1. Provide and install miscellaneous access control devices, conduits, junction boxes, field interconnection wiring, and associated hardware.
 - 2. Program, configure and test system for operation.
- E. The Access Control scope of work includes:
 - 1. Providing and installing Access Control of rating shown on Contract Drawings.
 - 2. Submittal data and drawings.
 - 3. Startup assistance.
 - 4. Field testing.
 - 5. Training
 - 6. Operation and maintenance manuals.
 - 7. Warranty of all components and technical support.
- F. Work includes that specified in Electrical Specifications [Electrical General].

1.02 SUBMITTAL REQUIREMENTS

- A. Provide submittals and drawings as specified in Electrical Specifications [Electrical General, Submittal Requirements].

1.03 OPERATION AND MAINTENANCE INFORMATION

- A. Submit hardware Operations and Maintenance Manual per Electrical Specifications [Electrical General].

PART 2: PRODUCTS

2.01 ACCESS CONTROL SYSTEM (ACS)

- A. General

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1. The ACS shall be capable of performing and integrating multiple security functions including the configuration, management and monitoring of cardholder access, hardware units (controllers), events, alarms, visitors, tenants, as well as real-time tracking and reporting.

B. System Architecture

1. The ACS shall be highly scalable and include provisions for future growth.
2. The ACS shall be based on an open architecture to support multiple access control hardware manufacturers. The ACS shall be able to integrate with multiple non-proprietary interface modules and controllers, access readers, and other third party applications.
3. The ACS shall be both a multi-user and a multi-tasking environment.
4. The ACS shall be an IP enabled solution. All communication between the hardware controllers shall be based on standard TCP/IP protocol.

C. System Design Guidelines

1. The ACS shall be compatible with multiple 32-bit operating systems. The ACS client and server modules shall run on Windows XP Professional with Service Pack 3 or Windows Server 2003 with Service Pack 1.
2. The ACS shall be designed using the latest and most advanced design tools.
 - a. The core client/server software shall be built using Microsoft .NET and the C# (C-Sharp) programming language.
 - b. The ACS database server(s) shall be built on Microsoft's SQL Server 2005, including SQL 2005 Express Edition.

D. System Scalability and Capacity

1. The ACS shall be capable of supporting a wide range of configurations. The ACS shall be capable of supporting small access control configurations that consist of a single door and one reader. The ACS shall also be highly scalable to support configurations consisting of a multitude of doors with facilities spanning multiple geographic areas.
2. The ACS shall be upgradeable one entity at a time, for example: 1 credential at a time, 1 door at a time, 1 cardholder at a time, etc.
3. The ACS shall support an unlimited number of Access Server modules. Each Access Server shall support several hundred hardware controllers.
4. The ACS shall support an unlimited number of logs and historical transactions with the maximum allowed being limited by the amount of

hard disk space available.

E. System Security and Encryption

1. Communication between the hardware controllers and server shall be encrypted. The encryption method shall use a 128-bit AES encryption algorithm (at a minimum).

2.02 SERVER SOFTWARE

A. Overview

1. The SSM shall be responsible for receiving, processing and responding to requests from the CSA. The SSM shall consist of a Configuration Server and an Access Server. Several Access Server modules shall be supported per Configuration Server.
2. The SSM shall automatically launch at computer startup, irrespective of whether a user is logged onto the machine or not.

B. Configuration

1. The Configuration Server shall be the central database that contains all the system information and component configuration.
2. The Configuration Server shall support the configuration and management of the following components.
 - a. Door Controllers (hardware units)
 - b. Input and Output (IO) modules (hardware units)
 - c. Doors
 - d. Elevators
 - e. Areas
 - f. Dynamic Graphical Maps
 - g. Cameras
 - h. Schedules
 - i. Access rules
 - j. Cardholders and cardholder groups
 - k. Credentials
 - l. Events/Actions
 - m. Alarms
 - n. Users and user groups
 - o. Security Partitions
 - p. Macros
 - q. Scheduled tasks
 - r. Custom events
 - s. Custom output behavior
 - t. Input – Output (IO) linking
 - u. Custom fields
3. At system startup, the Configuration Server shall download all the configuration information to each Access Server under its control.

4. The Configuration Server shall authenticate users and give access to the ACS based on predefined user access rights or privileges.
5. The Configuration Server shall continuously monitor the following:
 - a. Server application connections
 - b. Controller connections

C. Access

1. The Access Server shall be the server that synchronizes all hardware units under its control. The Access Server shall also be able to validate and log all access activities and events when the controllers are online.
2. The Access Server shall maintain the communication link with the hardware controllers under its control. It shall also continuously monitor whether the controllers are online or offline.
3. Synchronization of hardware units shall be transparent to users and shall occur in the background.
4. The Access Server shall support doors and controllers located within one or more facilities.
5. The Access Server shall download information on the following entities to make the appropriate access decisions:
6. Hardware door controllers and IO Modules
 - a. Doors
 - b. Elevators
 - c. Zones (input points)
 - d. Areas
 - e. Cardholders
 - f. Cardholder groups
 - g. Credentials
 - h. Access rules
 - i. Schedules
7. The Access Server shall store all access events associated with the doors, areas, zones (input points), elevators, and controllers under its direct control.
8. When the information available is not sufficient to make a decision, e.g. the cardholder is unknown; the Access Server shall automatically send a request to the Configuration Server for an update.

D. Monitoring

1. In the event of a malfunction or failure, the Server Monitoring Service shall restart the failed service. As a last resort, the Server Monitoring Service shall reboot the PC should it be unable to restart the service. It

shall also offer the capability to manually start and/or stop one or more of the hardware units.

2. The Server Monitoring Service user interface (UI) shall be accessible from the system tray. The Server Monitoring Service UI shall provide the user with the following:
 - a. A real-time list of hardware units running on a PC
 - b. The status of the hardware units (started or stopped)
 - c. A log of status-related events and associated timestamps
 - d. Telnet console to log onto a hardware unit

E. Web Client

1. The Web Client shall allow users and operators to perform configuration, management, and reporting activities.
2. Web Client shall be accessible through Microsoft Internet Explorer.
3. The Web Client shall be a truly thin client. It shall not require the download of any ACS-specific files or executable on the client workstation.
4. Functionality available through the web client includes.
 - a. Configuration and management of cardholders and cardholder groups
 - b. Configuration and management of credentials
 - c. Configuration and management of access rules
 - d. Badge printing over the network
 - e. Assignment of access rules to doors and areas
 - f. Visitor management including visitor check-in and check-out and reporting
 - g. Advanced reporting

F. Software Compatibility List (SCL)

1. The ACS shall interface with IP-enabled hardware access controllers, interface modules, and IO modules.
2. The ACS shall have an open architecture that supports the integration of third party IP-based door controllers. Through these door controllers, the ACS shall interface with industry standard access control readers.

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3. The ACS shall have an open architecture that supports the integration of third party IP-based IO hardware modules. Through IO modules, the ACS shall interface with multiple input points and connect to multiple output relays.
4. The ACS shall simultaneously support mixed configurations of access control hardware from multiple vendors.
5. The ACS shall support multiple types of hardware devices:
 - a. Single-reader controllers
 - b. 2-reader controllers
 - c. 1- to 64-reader controllers
 - d. Integrated readers and door controllers
 - e. Power-over-Ethernet (PoE) enabled door controllers
6. The ACS shall support multiple hardware configurations:
 - a. IP edge devices (door controllers and IO modules)
 - b. Multidrop configuration using the RS-485 configuration protocol
7. The ACS shall support a minimum of the following IP-enabled controllers. For a description of the capabilities of the controller, refer to the controller's A&E specification, or equal.
 - a. Specialty Sensors Technologies Inc.
 - 1) ACIM102A door controller
 - 2) ACIM102B door controller
 - 3) ION168 IO module
 - b. HID Corporation
 - 1) VertX V2000 reader interface/network gateway
 - 2) iCLASS EdgeReader integrated reader and controller (PoE)
 - 3) iCLASS EdgePlus door controller (PoE)
 - 4) VertX V1000 network gateway
8. The ACS shall support most industry standard card readers that output card data using the Wiegand protocol.
9. The ACS shall support HID Clock-and-Data readers.

G. Hardware

1. System shall be installed on SCADA Historical Data Server or other as defined during construction.

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PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].
- B. Requirements of Related Electrical Sections apply to design, documentation construction and assembly of Access Control System.
- C. Perform work to remedy non-compliant installations after inspection.

3.02 INSTALLATION

- A. All work shall conform to local codes and National Electric Code.

3.03 FIELD ASSISTANCE

- A. Provide 1 hour of "System Setup" Training on operating and maintenance procedures.

3.04 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

END OF SECTION

SECTION 16933

VIDEO MONITORING SYSTEM

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Providing and installing video monitoring and control system.
- B. To be designed by Contractor similar to other City installations.
- C. Johnson Controls is preferred vendor.

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Low Voltage Wire & Data Cable]
- C. Electrical Specifications [Control Panel]

1.03 SUBMITTAL REQUIREMENTS

- A. Provide submittals per Electrical Specifications [Electrical General, Submittal Requirements].
- B. Computer with recording device.
- C. Cameras, software, cabling, special installation requirements.
- D. Camera communications block diagram.

1.04 OPERATION AND MAINTENANCE INFORMATION

- A. Submit hardware Operations and Maintenance Manual per Electrical Specifications [Electrical General].

PART 2: PRODUCTS

2.01 VIDEO CAMERA

- A. Video camera shall be 5.0 MP high-quality, Ethernet IP POE, high-resolution color video camera with a manual variable focus lens and auto-iris, gain and white balance. It shall provide quality video in a wide variety of lighting conditions.
 - 1. Camera shall be suitable for outdoor pole mounting with rain and sunshield protection.
 - 2. 13 image/sec at full resolution
 - 3. 3-9 mm Lens with 28 – 84 degree field of view.
 - 4. Pole mounting bracket and junction box.
- B. Aviglon HD Bullet Camera 5.0-H3-BO1-IR or equal.

2.02 NETWORK VIDEO RECORDER NVR SYSTEM

- A. Provide NVR system meeting the following minimum requirements.
 - 1. 8 video input channels with RJ-45 POE connectors

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2. 8 channel license with 5 viewing clients.
 3. 10MB/s Recording Rate
 4. 4TB minimum hard drive
 5. Continuous 1080P recording on all channels minimum up to 10MB/s aggregate.
 6. Rack mountable bracket
- B. Avigilon HD Video Appliance VMA-AS1-8P4, or equal.
- 2.03 NETWORK VIDEO SYSTEM ACCESSORIES
- A. Keyboard: USB with 10 ft cord.
 - B. Mouse: Optical wheelmouse.
 - C. Video Monitor, 24" 1080p resolution, HDMI.
 - D. HDMI cable as required
- 2.04 SECURITY DESK
- A. The security desk shall be made from sheet steel and painted gray with oven dried enamel paint.
 1. Slanted writing surface with 4 compartment organizer above that can hold monitor.
 2. Adjustable legs from 36" to 42.5" height.
 3. Dimensions: 30" D x 36" W top surface.
 - B. Acceptable products: Uline H-2058 or equal.
- 2.05 CAMERA POLES
- A. The camera poles shall be as shown in the contract document details.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. All work in this Section shall conform to the codes and standards specified in Electrical Specifications [Electrical General, Workmanship].

3.02 FABRICATION

- A. Install Computer loaded with camera monitoring software prior to shipment to project site.
- B. Mount, wire and ground computer, power supplies, hubs, etc to survive shipping and installation. Remove computer and other devices for shipment as necessary for security or physical protection reasons as deemed required by manufacturer.

- C. Organize equipment on control panel backpan per Backpan Layout detail in Contract drawings.
- D. Locate and install control panel per Contract drawings.

3.03 WIRING

- A. Terminate CAT 5 cabling using RJ-45 plug connectors.
- B. Terminate RG6 cabling with BNC type or appropriate connectors.
- C. Terminate power cabling above grade using wire nuts within the pole.
- D. Label and wire terminal blocks per Electrical Specifications [Wire, Fuses & Terminal Blocks].
- E. Bundle and tie down wires in a neat and orderly manner.

3.04 INSTALLATION

- A. Install camera poles per installation details.
- B. Install equipment per Electrical Specifications [Electrical General, Installation].

3.05 FIELD ASSISTANCE

- A. Factory test camera system prior to shipment to project site (un-witnessed).
- B. Configure system per Owner Representative's requirements after installation.
- C. Confirm video storage and retrieval of historical archive.

3.06 TRAINING

- A. Provide 2 hours training on use, configuration, set-up and troubleshooting of the cameras and systems.

3.07 WARRANTY

- A. Provide warranty per Electrical Specifications [Electrical General, Warranty].
- B. Perform the following services during the warranty period:
 - 1. Repair or replace damaged modules returned for service within 24 hours.
 - 2. Determine and report the cause of failure of modules returned for service.
 - 3. Resolve design or implementation problems discovered.

3.08 FINAL ACCEPTANCE

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- A. Final Acceptance per Electrical Specifications [Electrical General].

END OF SECTION

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SECTION 16940

INSTRUMENTATION

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. The major components in the instrumentation scope of work are:
 - 1. Furnish, configure, test, commission, and warrant instrumentation as shown in the P&IDs, plans, and/or listed in specification section.
 - 2. Include necessary piping, valves, pressure reducers, mounting brackets or flanges, supports, and anchors to complete installation.
 - 3. Provide sunshades for instrumentation for all instruments that are exposed to direct sunlight.
- B. System Integrator selection of instrumentation shall be per manufacturer's recommendation for the application and per specifications. If a manufacturer's recommendation or installation instructions are inconsistent with the Contract installation details or specifications, then the Contractor shall submit an RFI describing the inconsistency. If the inconsistency is due to substitution from the first named equipment, then the responsibility of coordination and any additional cost shall be borne by the Contractor.
- C. Provide all devices, valves, tubing, fittings, wiring, terminal blocks, calibration consumables, initial calibration equipment, accessories, sunshades and enclosures as specified herein and as shown on Contract Drawings.
- D. The Contractor shall furnish all tools, calibration equipment, calibration materials, specialized parts and incidentals necessary to integrate the instrument to the application.
- E. Contractor shall furnish labor for installation, verification, start-up, calibration, testing and commissioning. Contractor shall prove proper function of instrument prior project completion.

1.02 REFERENCES

- A. Electrical Specifications [Electrical General]
- B. Electrical Specifications [Factory and Field Testing]

1.03 SUBMITTALS AND DRAWINGS

- A. Submit shop documents and drawings for approval in accordance with this subsection and as specified in Electrical Specifications [Electrical General, Submittal Requirements].
- B. Submit Operating Instructions (O&M Manuals) for each instrumentation device prior to equipment installation.

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1.04 OPERATING AND MAINTENANCE INFORMATION

- A. Provide operating instructions as specified in Electrical Specifications [Electrical General, Operating and Maintenance Instructions].

PART 2: PRODUCTS

2.01 QUALITY

- A. Electrical Specifications [Electrical General, Quality].
- B. All equipment shall be designed and constructed so that in the event of a power interruption, the equipment specified hereunder shall resume normal operation without requiring a manual reset.
- C. Signal transmission from remote or field electric and electronic devices shall be 4-20 mA, sourced by a 24 VDC supply internal to the instrument or from a 24 VDC power supply located within the panel that is to receive the signal. Nonstandard transmission methods such as impulse duration, pulse rate, and voltage regulated will not be permitted except where specifically noted.
- D. Transmitters or devices located in Class 1, Division 1 hazardous areas shall be rated for hazardous location installations per NEC and UL. Explosion proof enclosures and raceways or current/spark limiting devices located inside or outside of the classified area shall be furnished to comply with code requirements.
- E. Outputs of equipment that are not of the standard signals as outlined, shall have the output immediately converted to 4-20 mA signals for remote transmission.

2.02 INSTRUMENT IDENTIFICATION

- A. All major instrumentation and equipment items or systems specified in this Division and/or on the P&IDs are identified by tag numbers. Tag field equipment with assigned instrumentation tag number and functional description.
- B. Tags shall be laminated phenolic material having engraved letters approximately 3/16 inch high extending through the black face into the white layer; firmly secured to panels.
- C. Attach tags to equipment with a 4" long, 20-gage stainless steel wire leash for small devices, or two stainless steel screws for larger instruments; however, such permanent attachment shall not be on an ordinarily replaceable part or in an area that will be subject to unintended overuse fatigue. Make the tag plainly visible.

2.03 LEVEL COMPONENTS

- A. Ultrasonic Level Transmitter:
 - 1. The ultrasonic level transmitter shall utilize non-contacting ultrasonic

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signal reflection technology to provide level monitoring for up to 50 ft range.

2. The transmitter shall feature advanced echo processing algorithms that can be configured to ignore selected echos.
3. The transmitter shall be capable of controlling two pumps in a lead/lag configuration or using outputs for high and low level alarm outputs.
4. The transducer level element (LE) shall have the following features:
 - a. Corrosion resistant plastic body, completely submergence rated.
 - b. Rated for Class 1, Div. 1 hazardous atmospheres.
 - c. Operating temperature of -40 to 200 deg F.
 - d. Beam angle (degrees) as required for the application and to avoid obstructions.
 - e. Beam range as required for the application.
5. The level indicating transmitter (LIT) shall have the following features:
 - a. NEMA 4X / IP65 enclosure.
 - b. Ground isolated 4-20 mA output, max load of 750 ohm.
 - c. Two 5 amp at 120V AC, SPDT relays.
 - d. Integral 4 button keypad for configuring parameters.
 - e. Integral 1.5" x 4" (min) backlit LCD display.
 - f. Operating temperature range from -40 to 140 deg. F.
6. The calibration of the level transmitter and cable length shall be as shown in the instrument schedule.
7. Provide one hand held or integral programming interface with each transmitter provided.
8. The ultrasonic level/flow transmitter shall be Endress and Hauser Prosonic S FMU90, Siemens Hydromat 200, or equal

B. Float Switch

1. Tilting float level switches shall be a mercury free float switch, whose specified weight is less than that of the process liquid displaced, to actuate switches as the level changes. The non-mercury hermetically sealed snap action switch is actuated by a steel ball rolling back and forth within a switching tube in plastic float housing. The SPDT switch shall be rated 16A at 250 VAC shall be integrally mounted in the float and connected to a control box by a PVC jacketed waterproof electric cable with three finely stranded No.17 conductors. The weight shall be integrally mounted so that no metals shall contact the process liquid. Tilting type level switch shall be MJK Model 7030, or equal.

C. Chemical Leak Sensor

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1. Non-tilting level switch vertical buoyancy sensor shall consist of a hermetically sealed reed switch that is approximately 1" diameter x 2.1" high. The entire switch shall be submersible rated. The switch shall be actuated by magnets mounted inside the float cylinder. The float shall be non-tilting and shall detect liquid level changes without any movement of the switch housing. The switch shall be cord-hung and fabricated of polypropylene. The switch shall be rated for 0.25 amp at 120 VAC and shall be capable of normally open or normally closed contact configuration simply by rotating the cylindrical float end for end. The float switch shall be Omega LVN-140, Gems or equal.

2.04 PRESSURE COMPONENTS

A. Gauge, Absolute, or Differential Pressure Transmitter:

1. The pressure indicating transmitter shall be a loop powered, two wire, 4-20 mA signal transmitting device with signal derived from the applied sensor pressure. Transmitter shall be capable of driving 0 to 500 ohm loads with 24 VDC supply.
2. The transmitter shall have the following features:
 - a. Programmable 4-digit Liquid Crystal Display (LCD) process indicator.
 - b. HART programming with programming selections for square root extraction, output calibration, and adjustable dampening 0.0 to 36.0 seconds, minimum.
 - c. Integral microprocessor based circuitry with RFI filtering and shielding.
 - d. The transmitter shall have accuracy of +/- 0.1% of span over a range of minimum 10 to 1 turndown. Elevated zero setting capable of 0-30% upper calibration limit.
 - e. Operating temperature range shall be -40 to 185°F (minimum). Process wetted materials shall be compatible with fluid being measured with minimum hastalloy or ceramic diaphragm and 316 stainless steel wetted parts.
 - f. Process connection shall be as follows:
 - 1) Low solids content - 1/2" MNPT with calibration valve.
 - 2) High solids content - 1-1/2" or 2" flange with flushing ring and valve.
 - 3) And as required per installation detail.
 - g. The transmitter shall be scaled as shown in the instrument schedule.

3. Provide mounting bracket per mounting requirements shown in Contract drawings.
4. The gauge pressure transmitter shall be Endress and Hauser Cerabar M PMC 71, Rosemount Smart 3051, or equal.

B. Calibration Valve:

1. Calibration valve for use with gauge transmitters shall have the following features:
 - a. Stainless steel body with integral blocking valve and calibration valve and port.
 - b. Calibration port shall be 1/4" FNPT with 1/4" MNPT x 1/2" FNPT adapter.
 - c. Valve shall have a non-rotating stem tip and a fully backseated bonnet.
 - d. Process and transmitter connections shall be 1/2" MNPT. Include 1/2" stainless steel close nipple as required.
2. Calibration valve shall be Hex HB59, Anderson Greenwood, or equal.

C. Pressure Switch:

1. Each pressure switch shall be SPDT rated minimum of 15 amps @ 120VAC. Pressure switch shall consist of a pressure sensing mechanism and the switch itself enclosed in a NEMA rated housing. Pressure switch shall be diaphragm type with stainless steel wetted parts and mechanical snap action switch. Switch shall have two setpoint adjustments (trip & reset setpoints) with setpoint indicator calibrated in engineering units. Pressure switch shall be UL listed. The pressure switch shall be Static-O-Ring 66 Series, Ashcroft B series; ASCO or equal.

D. Pressure Gauge:

1. The pressure gauge shall be 1% accurate with C-type bourdon tube. The bourdon tube, socket and connection tube of the gauge shall be 316 stainless steel. The case and bezel ring shall be constructed of type 304 stainless steel. The dial shall be 3-1/2" in diameter with a black pointer and a white gauge face with black print. The gauge shall be filled with liquid glycerin. A bottom mount process connection shall include a snubber as a separate component. The process connection shall be 1/2" stainless steel. The pressure gauge shall be Ametek gauge model 1535, Ashcroft 1009, or equal.

2.05 FLOW COMPONENTS

A. Magnetic Flow Meter:

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1. The magnetic flow meter shall consist of a flow tube FE and a converter FIT, complete with interconnecting cables.
2. The magnetic flow meter shall be of the low frequency electromagnetic induction type and shall produce a DC pulse signal directly proportional and linear to the flow rate, with the duration not less than 100 milliseconds. Complete zero stability shall be an inherent characteristic of the metering system. Meters requiring field zero adjustment will not be acceptable. The meter accuracy shall not be affected by changes in fluid pressure, temperature, viscosity, or conductivity.
3. Accuracy
 - a. The maximum error of the complete metering system including flow element and flow indicating transmitter shall be 0.30% of actual flowrate (in specified units) and readout over the range of full scale velocity settings from 1 to 30 feet per second. Variations in temperature, voltage, and frequency within the ranges listed herein shall not affect the overall measuring accuracy.
 - b. The flow meter shall not require more than three diameters of straight pipe length from the center of the meter to upstream or downstream obstructions to obtain specified accuracies.
 - c. Lack of straight pipe or obstructions to straight length pipe requirements shall not cause overall flowmeter inaccuracies to exceed more 0.5% of actual flowrate over the range of full scale settings from 1 to 30 feet per second.
4. Flow Element (FE)
 - a. The flow element shall be based on a pipe spool with ANSI class 150 flange connections or be flangeless construction as required by mechanical drawings. Class 300 flanges shall be provided where shown or when the pressure and temperature of the process fluid exceeds the rating of a 150 lb flange. The flow element size shall be as shown in the mechanical drawings and listed in the Instrumentation Schedule. Flange type and bolt pattern shall be coordinated with the mechanical Contractor prior to submittal.
 - b. The flow element shall have Hastalloy C4 coil and grounding electrodes.
 - c. Stainless steel grounding rings shall be provided at both ends of the flow element for all flowmeter applications. Grounding rings shall be manufactured from stainless steel, 2 mm thickness with grounding tab for electrical wire connection, and fit within the flange bolt circle. Grounding ring shall be self centering within pipe.

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- d. The flow element internal liner material shall be Teflon, polyurethane or hard rubber, unless recommended otherwise by the manufacturer for the application and approved.
 - e. Nema rating as defined in the Instrumentation Schedule.
5. Flow Indicating Transmitter (FIT)
- a. The electronic flow indicating transmitter shall be mounted remotely from flow tube as shown on Contract drawings.
 - b. The electronic transmitter shall be provided in a NEMA rated enclosure per the Instrumentation Schedule.
 - c. The transmitter shall be interchangeable with all sizes of flow elements and shall be field replaceable (without replacing flow element) in the event of transmitter failure.
 - d. The transmitter shall be microprocessor controlled, utilizing digital signal processing with automatic zero correction to provide a linear 4-20 mA signal proportional to flow rate.
 - e. The transmitter shall incorporate a high impedance amplifier of 100,000 Megohms or greater, eliminating the need for electrode cleaning systems.
 - f. The transmitter shall contain a self test mode to allow the operator to manually simulate the output 4-20 mA signal to any value between 0% and 100% to check out any driven devices in the loop.
 - g. Rate indicator and totalizer: An alphanumeric LCD backlit display shall be provided to continuously display the flowrate and totalizer with units and all programming functions.
 - h. All programming configuration of the Flowmeter shall be completed through the transmitter's pushbutton interface. A communication device shall not be necessary to configure the flow transmitter.
 - i. PC based software shall be available and included for configuration and troubleshooting. Connection to flowmeter shall be via computer USB port and include interface cables as required.
 - j. The transmitter shall be designed for operation from a power source of 120 volts AC, with a power consumption of less than 20 watts. The flow element shall be powered from the transmitter.
 - k. The transmitter shall operate continuously without fault in an ambient temperature range from 14 to 140 °F. The flowmeter shall be suitable for operation in direct sunlight without the use

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of a sunshade. If a sunshade becomes required after installation for any operational reason, one shall be furnished and installed free of charge.

I. The following configurable parameters shall be provided at a minimum:

- 1) Field adjustable flow signal dampening.
- 2) Low flow cutoff (forces zero flow signal) between 0.0-5.0% of full scale rate.
- 3) Empty pipe detection (forces zero flow signal) if the pipe is not full.
- 4) Selection for forward/reverse/both flow directions.

6. Flow Indicating Transmitter (FIT) I/O Interface

a. Network Communication

- 1) The transmitter output(s) shall be integral to the magnetic flowmeter transmitter electronics; and must be located within the transmitter housing. Using an external signal converter is not acceptable.
- 2) Protocols
 - i Ethernet Schneider Automation Modbus TCP
 - ii No equal.
- 3) The transmitter output selected must be supported by add-on instructions (AOI), add-on profiles (AOP), that can be imported to the Programmable Logic Controller specified in the is project. AOIs and AOPs include device drivers, instructions and pre-engineered PLC code.

b. Flow Signal: 4-20 mA signal proportional to the flow. The signal shall be field configurable for the flow calibration specified and others within the flow tube accuracy range. The flow signal shall be capable of measurement for forward and reverse flows combined by offsetting zero to mid scale (12 mA).

7. If the flow indicating transmitter (FIT) is shown in the Contract drawings to be mounted remotely from the flow element (FE), the manufacturer shall provide all cabling between flow element and flow indicating transmitter.

8. All mounting hardware and/or devices necessary to complete the installation shall be provided by the manufacturer at no additional cost to the Owner.

9. The meter shall be hydraulically calibrated at a facility located in the United States and the calibration shall be traceable to the National Bureau of Standards. A certified copy of the calibration test results shall be submitted to the Owner prior to shipment of the meter.
10. The magnetic flowmeter shall be Endress and Hauser Promag 400L, or equal.

B. Flow Switch:

1. The flow switch shall be vane operated to actuate 5A SPDT snap action switch. Motion of the vane shall actuate the switch by action of a magnet linked to the switch inside the sealed stainless steel switch body. Flow switch shall be W.E. Anderson Dwyer Flowtect V4 or equal.

2.06 ANALYTICAL ELEMENTS

A. Chlorine Residual:

1. Description: Direct sensing chlorine analyzer to monitor a continuous flow of process water to determine free chlorine residual level.
2. The microprocessor based analyzer shall continuously display the chlorine residual with range as shown on the Instrumentation Schedule.
3. The measuring cell shall provide continuous on-line measurement of residual levels from 0-5 mg/l to 0-20 mg/l. The display shall be capable of 0.01 mg/l resolution (min) for the lower scale range.
4. Operating temperature: 32° F to +122° F. Provide sunshade when exposed to direct sunlight.
5. Analyzer Electronics.
 - a. The analyzer shall be controlled by microprocessor based electronics powered from 120 VAC. Analyzer shall be protected from voltage fluctuations commonly found in water/wastewater applications. Additional external noise filtering shall be provided as necessary for a robust and operational system. System lock-ups or microprocessor malfunctions will be grounds for rejection throughout the warranty period.
 - b. Analyzer electronics shall be enclosed in a NEMA 4X polycarbonate enclosure.
 - c. User interface shall include a membrane keypad and backlit LCD display.
 - d. Alarm conditions shall be identified through the display.
 - e. The system shall have one isolated 4-20 mA output which represents chlorine residual and scaled by the user during

commissioning from a selected list of ranges from 0-0.1 to 0-50 mg/l. Output signal shall be configurable to desired span without recalibration of the sensor

- f. Three (3) user configurable alarm relays shall be provided for low residual, high residual and diagnostic conditions.

- 1) Relay contacts shall be rated 5 amperes at 110 V.

6. Probe

- a. Membraned aperometric sensor probe with electrolyte fill liquid. Maximum pressure or flow at probe shall not be exceeded.
- b. The probe shall include temperature sensor for temperature compensation in chlorine measurement.
- c. The pH sensor shall include the flow thru cell and sensor for online measurement.
- d. Include flow cell and associated valves, pressure regulators, tees, strainers and piping for complete installation in the intended location. Installation of flow cell piping shall maintain liquid on probe surface even when flow is shut off.

7. Spare Parts.

- a. One year supply of consumable materials as recommended by manufacturer.
- b. On spare electrode, complete unit with plug-in to transmitter.

- 8. Chlorine Analyzer shall be Hach CLF10sc with flowcell and SC200 controller to match existing.

2.07 TEMPERATURE DEVICES

A. Room Temperature Transmitter:

- 1. The temperature indicating transmitter shall provide display of temperature and provide linear output signal derived from the temperature of the integral or remote RTD measuring sensor.
- 2. Temperature Transmitter
 - a. Loop powered, two wire, 4-20 mA, capable of driving 0 to 500 ohm loads from 24 VDC supply.
 - b. 3-1/2 digit, 0.37"H, Light Emitting Diode (LED) display.
 - c. Zero and span adjustments for display and temperature transmitter.

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- d. The transmitter shall have accuracy of +/- 0.5% of span over an operating temperature range of 0 to 150°F.
- e. Furnish remote RTD for outdoor temperature measurement as required per plan.

3. The wall mount transmitter shall be Devar Model RTTI(-R) or equal.

2.08 EVENT, STATE OR POSITION DEVICES

A. Position Switch:

- 1. Door switch – door intrusion switch shall have a wide gap magnetic sensor with S.P.S.T. contacts mounted in an aluminum housing with integral jacketed cable for wiring to a junction box. Switch contacts shall have 0.1A at 120VAC minimum capability. When attaching to a ferrous metal surface, space sensor components away from metal by minimum ¼" using plastic spacer in order to maintain magnetic gap. Intrusion door switches shall be Sentrol 151-6Z-12K or equal.
- 2. Overhead door switch – door intrusion switch shall have a wide gap magnetic sensor with S.P.D.T. contacts mounted in an aluminum housing with integral 3 foot stainless steel armored cable for wiring to a junction box. Switch contacts shall have 0.5A at 120VAC minimum capability. When attaching to a ferrous metal surface, space sensor components away from metal by minimum ¼" using plastic spacer in order to maintain magnetic gap. Intrusion door switches shall be Seco-Larm SM Series or equal.
- 3. Hatch or Vault – hatch or vault intrusion switch shall include a pre-wired factory sealed 5 foot cable for wet applications. Roller level switch shall be 316 stainless steel with roller and 1.19" to 3" radius adjustable lever arm. Switch shall have two independent sets of contacts that actuate with clockwise or counter clockwise lever movement. Tank hatch switch shall be Allen-Bradley Model 802MC-AY5 with 802MC-W2B lever or equal.
- 4. Valve Limit Switch – The valve mechanical position indicator shall to actuate the position limit switch(s). The limit switch shall have a rotating steel arm with end roller or plunger that can be adjusted to actuate the switch at the fully open or closed position of the valve. The switch shall have 10 amp S.P.D.T. contacts mounted in a water-tight housing. The limit switch shall be Allen Bradley 802T with 1.19" to 3" radius adjustable lever arm, or equal.

B. Smoke Detector:

- 1. General
 - a. The smoke detector shall detect smoke produced by fire and signal an alarm system. The detector shall be housed in a flame retardant plastic housing and shall be unaffected by vibration. Detector shall be sealed against dirt, insects and

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back pressure

- b. Detector shall utilize photoelectronic sensor technology.
 - c. The detector/base shall be 120V, four-wire operation with built-in Form A and Form C dry contacts. Form A contact shall be rated for 2.0A at 30VAC/DC. Form C contact shall be rated for 2.0A at 30VAC/DC and 1.0A at 120VAC.
 - d. The detector shall have an operating temperature 32 to 120°F and an operating humidity of 10 to 93% relative humidity.
 - e. The detector shall have built-in test switch (magnetic proximity actuation) and 360 degree view angle of built-in alarm LEDs.
 - f. The detector shall be approved by UL and Factory Mutual and meet requirements of NFPA 72.
2. The fire alarm smoke detector shall be photoelectric type. The smoke detector shall be System Sensor 100 Series model 2151 with B114LP base, Gentex 8000 Series with 120VAC base, or equal.

2.09 MOTOR OR EQUIPMENT PROTECTION DEVICES

A. Vibration Sensor / Transmitter:

- 1. Solid state, loop powered vibration transmitter providing a 4-20 mA output that is proportional to overall vibration in terms of velocity. The unit shall continuously monitor machinery health by sensing vibration and transmit signal into a PLC for trending, alarm and/or machine shutdown.
- 2. Installation: Mount the sensor into a tapped hole in the bearing housing or machine case using a stainless steel threaded 1/4"-28 UNF stud with Loctite 222. Prepare surface by grinding smooth and applying a machine oil coupling fluid. Connect electrical conduit directly to the top 3/4" NPT fitting and connect two wires into a 4-20 mA loop.
- 3. Specifications:
 - a. Dynamic Output: 4-20 mA proportional to full scale velocity
 - 1) 0-0.5 Inches per Second peak
 - b. Frequency Response: 2 Hz to 2,000 Hz
 - c. Buffered Output: Acceleration, 100 mV/g
 - d. Accuracy: ±5%
 - e. Two wire loop power: + 20 to + 30 Vdc
 - f. Maximum Load: 600 Ohms resistive
 - g. Grounding: Case Isolated

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- h. Environmental Operating Temperature: -20° C to +80° C
 - i. Sealed Epoxy Encapsulated 316L SS, NEMA 4, 4X, 12
 - j. Mounting: 1/4"-28 UNF Stud Mounted
 - k. Weight: 8 oz.
4. The Vibration sensor transmitter shall be Robert Shaw 570B, Hardy Instruments HI5701-VT, STI CMCP-420VT, or equal.

2.10 INSTRUMENTATION SUN PROTECTION

A. Instrument Sunshade

- 1. Provide wall mount bracket or pole mounted sunshade where instruments are exposed to direct sunlight. Sunshades shall be fabricated from stainless steel. Sunshade shall be custom manufactured for the instrument protected and sized such that there is 3" free space around sides and front of instrument.

- B. Instruments shall be oriented facing either North or East to minimize direct sunlight exposure where ever possible.

2.01 INSTRUMENTATION SCHEDULE

- A. The Instrumentation Schedule spreadsheet (located at the end of this section) is intended to be a summary of instrumentation equipment required for this project. Not all instrumentation details are shown on the schedule. Some requirements may be shown in the Instrumentation Schedule such as enclosure rating and instrument span that are not described in the specifications. Both are required for a complete specification.
- B. If an instrument is shown in the P&IDs or on the site plan, then the device shall be provided whether or not it is shown on the Instrumentation Schedule.

PART 3: EXECUTION

3.01 WORKMANSHIP

- A. Instrumentation work shall conform to workmanship standards specified in Electrical Specifications [Electrical General, Workmanship].
- B. The Contractor shall employ personnel who are skilled and experienced in the installation and connection of equipment defined in this section. Contractor qualifications are specified in Electrical Specifications [Electrical General].
- C. Verify that all equipment and materials fit properly.
- D. All instrumentation configuration, programming and calibration shall be completed prior to the start of field tests.
- E. Equipment without approved submittals shall not be installed.
- F. All equipment shall be properly stored indoors while awaiting installation.

Protect installed equipment from construction debris or mishaps. The Contractor will replace any equipment that is not in new condition at the time of installation and/or start-up.

- G. Perform work to remedy non-compliant installations after inspection.

3.02 INSTALLATION

- A. Install and supply all products necessary to provide an operational instrumentation system. This shall include the following:

1. Contract Drawings are intended to show the basic functional requirements of the instrumentation system. Insufficient detail does not relieve the Contractor from the responsibility to provide a complete and functioning system. If additional detail or clarification is required, the Contractor shall request such information prior to installation.
2. Provide relays, signal converters, isolators, boosters, power conditioners, circuit cards, and other miscellaneous devices as required for the compatible and functional interface.
3. Provide analog loop isolators where required to eliminate "ground loops."
4. The instrumentation and accessory equipment shall be installed in accordance with the manufacturer's instructions and located as shown on the Drawings or as approved. When manufacturer's installation literature specifies a particular location or orientation in a process line due to measurement accuracy considerations, the installation shall be in conformance with the manufacturer's instructions.

- B. Instrument installation methods.

1. Install instruments at the location shown on the Plans or approved. Instruments enclosures shall be NEMA rated for the installed location.
2. Install level and plumb.
3. All instruments shall be provided with floor stands or wall brackets as shown in installation details or as required for functional installation.
4. Mounting stands shall be custom manufactured of aluminum channel with base plate unless otherwise noted in installation detail.
5. Mounting channels (unistrut), and spacers shall be galvanized steel above ground outdoors and stainless steel below ground (wetwell), unless otherwise noted in installation details.
6. All screws, bolts and anchors shall be stainless steel.

- C. Wiring and raceway installation methods:

1. Terminal blocks shall be provided at all instrument cable junctions and

all wires shall be identified at such junctions.

2. Instrumentation wiring shall be run without splices between instruments, terminal boxes, or panels.
- D. Wiring, grounding, and shielding: The following practices shall be observed unless modified by manufacturer's standards.
1. Each electronic equipment chassis shall be grounded to power ground.
 2. Shielded twisted pair, shielded triad, or manufacturer supplied cables only shall be used for analog signals and communications signals.
 3. Drain wire of shielded cables used for analog inputs to the PLC shall be connected at the PLC unit only. Shield shall be isolated from ground at all other termination points including transmitters.
 4. Drain wire of shielded cables used for analog outputs from the PLC shall be connected at signal receiving device only. Shield shall be isolated from ground at all other termination points.
 5. If electrical interference noise is imposed on DC status and alarm signals, then they shall be re-routed or wire changed to shielded twisted pair cables.
 6. Each shield drain wire which is not connected to ground shall be cut off covered with a heat shrink insulating boot at cable jacket end. Shields shall be connected together at each transition from one cable to another for an effectively continuous shield circuit.

3.03 SUPPLIER SERVICES

- A. The Contractor shall be responsible for each supplier of equipment to provide the following minimum services for each type of instrument supplied. Each supplier shall provide a qualified instrumentation field technician to perform services listed herein. Contractor shall supply all calibration materials necessary to commission unit and shall not use any consumable materials that are intended to be furnished for the first period of use.
1. Advise and instruct Contractor on proper installation requirements.
 2. Inspect, calibrate, test, and place equipment in operation. Calibrate instruments to values as shown in the instrument index or as noted herein. If instrument spans are required to change (within instrument range) during startup for process reasons, the Contractor shall change them as directed by the Engineer.
 3. Programmable devices shall be programmed and tested prior to startup. Programming shall be adjusted or changed as directed by the Engineer at any time prior to final acceptance.
 4. Perform testing in the presence of Engineer.

5. Visit the project site as often as required and spend as much time as necessary to ensure accurate and operational instrumentation.
 6. Provide training as specified in FIELD ASSISTANCE.
- B. The Contractor shall coordinate with each supplier of instrumentation to confirm that primary elements are provided in a timely manner, meeting critical path scheduling. The Contractor shall coordinate process connection size, equipment size, and material type when applicable and oversee the installation, calibration, and acceptance testing.

3.04 FIELD ASSISTANCE

- A. The instrument supplier shall provide a minimum of one (1) hour of field training to instruct Owner's personnel in the use, operation, calibration, programming, and maintenance on each type of "field" instrument.

3.05 SPARE PARTS

- A. Provide spare parts as described in each products section herein and specified in Electrical Specifications [Electrical General, Spare Parts].
- B. Contractor shall supply all calibration materials necessary to commission unit and shall not use any consumable materials that are intended to be handed over to the Owner as defined in the instrument specifications.

3.06 WARRANTY

- A. Provide warranty as specified in Electrical Specifications [Electrical General, Warranty].

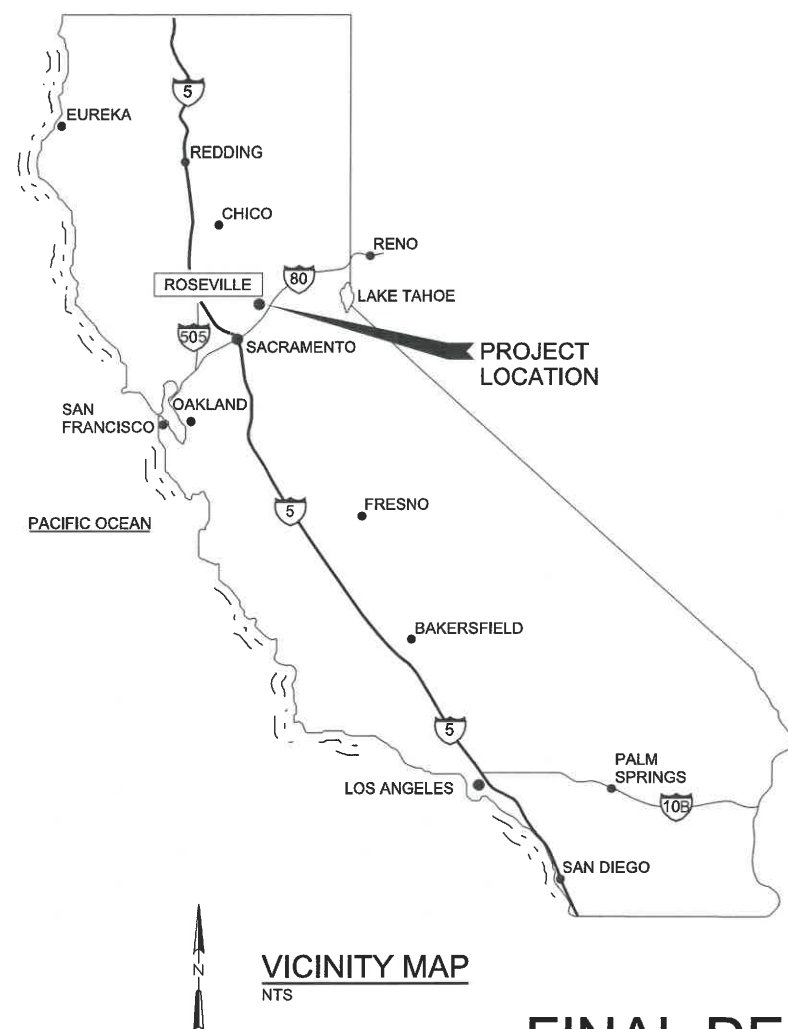
3.07 FINAL ACCEPTANCE

- A. Final Acceptance per Electrical Specifications [Electrical General].

END OF SECTION

CITY OF ROSEVILLE

CONTRACT DOCUMENTS FOR DESIGN-ASSIST AND CONSTRUCTION OF WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) 4501 WESTPARK DRIVE ROSEVILLE, CA 95747 VOLUME 4 OF 4 : DRAWINGS



APPROVAL
RECOMMENDED BY:

Janice Gainey
JANICE GAINNEY, P.E.
SENIOR ENGINEER
DEPARTMENT OF ENVIRONMENTAL UTILITIES
CITY OF ROSEVILLE

DATE: 11/15/19

APPROVED BY:

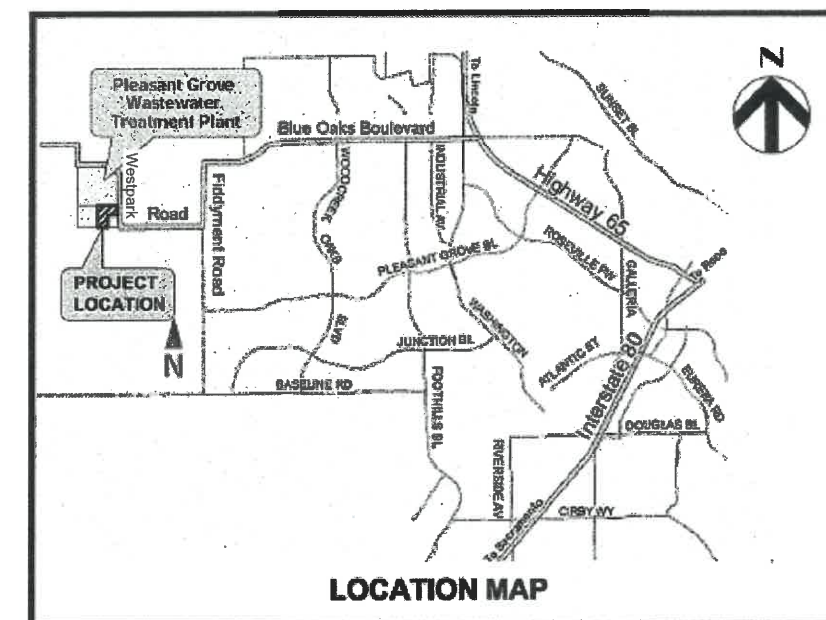
Sean Bigley
SEAN BIGLEY
ACTING WATER UTILITY MANAGER
DEPARTMENT OF ENVIRONMENTAL UTILITIES
CITY OF ROSEVILLE

DATE: 11/15/19

SUBMITTED BY:

Michael J. Fisher
MICHAEL J. FISHER, P.E.
SENIOR CIVIL ENGINEER
WATER WORKS ENGINEERS, LLC.

DATE: 11/15/2019



NOVEMBER 2019
FINAL DESIGN SUBMITTAL - NOT FOR CONSTRUCTION



WATERWORKS
ENGINEERS

INDEX TO DRAWINGS

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FOR PROPOSAL
PURPOSES ONLY,
NOT FOR
CONSTRUCTION



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CITY OF
ROSEVILLE
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WATERWORKS

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CITY OF ROSEVILLE

WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)

ROSEVILLE, CALIFORNIA

GENERAL

INDEX TO DRAWINGS

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-G-002

SHEET NUMBER
2

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GENERAL NOTES:		GENERAL NOTES CONT:		GENERAL NOTES CONT:			
1. ALL WORK SHALL COMPLY WITH APPLICABLE STATE, FEDERAL, AND LOCAL CODES, AND ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT ITS EXPENSE, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS. 2. DEVIATION FROM THESE PLANS WITHOUT THE PRIOR WRITTEN CONSENT OF THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE UNACCEPTABLE. 3. IN THE EVENT OF A CONFLICT BETWEEN THE AGREEMENT, ITS EXHIBITS, OR THE CONSTRUCTION DOCUMENTS (PLANS AND SPECIFICATIONS) THE AGREEMENT CONTROLS, FOLLOWED BY ITS EXHIBITS. 4. ALL PIPE LENGTHS AND DISTANCES BETWEEN STRUCTURES ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE ALONG A HORIZONTAL PLANE UNLESS OTHERWISE STATED OR SHOWN. 5. ELEVATIONS FOR THE PROPOSED PIPELINE ARE TO THE INVERT OF THE PIPE AS SHOWN ON PROFILE. 6. MINOR CHANGES IN THE HORIZONTAL AND VERTICAL ALIGNMENT OF THE PIPELINES MAY BE PROPOSED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL TO FACILITATE CONSTRUCTION AND AVOID FIELD CONFLICTS. 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS OR MARKERS DURING CONSTRUCTION. 8. LOCATIONS OF EXISTING SHOWN UTILITIES ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE SIZE, DEPTH, ORIENTATION, MATERIAL AND LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION AND SUBMIT THIS INFORMATION TO THE ENGINEER. THE CONTRACTOR SHALL TAKE WHATEVER STEPS ARE NECESSARY TO PROVIDE FOR THE PROTECTION OF EXISTING UTILITIES. THE ENGINEER HAS ATTEMPTED TO LOCATE AND INDICATE ALL EXISTING FACILITIES ON THE PLANS; HOWEVER, THIS INFORMATION IS SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE ENGINEER OR CITY OF ROSEVILLE ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN. CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED BY CALLING "UNDERGROUND SERVICE ALERT" ("USA") 1-800-227-2600 TWO (2) DAYS MINIMUM TO FOURTEEN (14) DAYS MAXIMUM BEFORE BEGINNING ANY EXCAVATION. THE CONTRACTOR SHALL CONTACT ANY UTILITY COMPANY WHOSE UTILITIES ARE NOT LOCATED BY "USA" FOR EXACT LOCATION OF THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND/OR REPLACE ANY AND ALL DAMAGE MADE TO UTILITIES BY THE CONTRACTOR TO EXISTING CONDITIONS AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL COORDINATE WORK WITH CONFLICTING UTILITIES AND PROVIDE FOR REMOVAL, RELOCATION AND REPLACEMENT AS NECESSARY FOR INSTALLATION OF THE PROPOSED UTILITIES. UTILITY COORDINATION SHALL BE INCLUDED IN THE PROJECT SCHEDULE AND IT IS THE EXPLICIT RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT THE PROJECT SCHEDULE INCLUDES THE NECESSARY RELOCATION. THE CONTRACTOR SHALL NOT BE PAID ADDITIONALLY FOR THIS COORDINATION OR ANY RELOCATION. 9. BURIED TELEPHONE, GAS AND CATV CABLES (FIBER OPTICS AND CONVENTIONAL) ARE KNOWN TO VARY IN DEPTH AND LOCATION DUE TO INSTALLATION TECHNIQUES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANY TO DETERMINE SPECIFIC UTILITY LOCATIONS AND NOTIFYING THE ENGINEER OF THE EXACT LOCATION (HORIZ & VERT) OF THE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH LOCATING. COORDINATION FOR RELOCATION OR REPAIR OF BURIED CABLES AND GAS ALONG THE PIPELINE ALIGNMENT. 10. EXISTING OVERHEAD ELECTRIC AND TELEPHONE TRANSMISSION LINES IN THE PROJECT AREA MAY BE NOT SHOWN ON DRAWINGS. EXTREME CAUTION SHALL BE USED WHEN WORKING IN THE VICINITY OF OVERHEAD UTILITIES SO AS TO PREVENT INJURY TO WORKERS OR DAMAGE TO THE UTILITIES. 11. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS. 12. THE CONTRACTOR SHALL NOTIFY ROSEVILL ELECTRIC PRIOR TO EXCAVATING CLOSER THAN TEN FEET TO AN EXISTING UTILITY POLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY ADDITIONAL SUPPORT OF EXISTING POWER POLES AS REQUIRED FOR TRENCH EXCAVATION. ALL COSTS OF SUCH WORK SHALL BE PAID BY THE CONTRACTOR. 13. THE CONTRACTOR SHALL INSTALL ALL TEMPORARY AND PERMANENT SIGNS AS REQUIRED BY THE CITY OF ROSEVILLE. IN ACCORDANCE WITH TRAFFIC CONTROL PLANS PROVIDED BY THE CONTRACTOR AND APPROVED BY THE AGENCY OR JURISDICTION. 14. THE CONTRACTOR SHALL INSTALL PROJECT DESCRIPTION TEMPORARY SIGNS AS REQUIRED BY PERMIT CONDITIONS . CONTRACT DOCUMENTS, ENGINEER OR CITY OF ROSEVILLE. 15. MINIMUM PIPE COVER FOR ALL UTILITIES SHALL BE AS SHOWN ON THE PLANS BUT NO LESS THAN 3 FEET UNLESS LESS COVER IS SPECIFICALLY APPROVED BY THE ENGINEER OR SHOWN ON PLANS. 16. THE CONTRACTOR SHALL REMOVE AND REINSTALL ALL EXISTING FENCE AS REQUIRED FOR FACILITIES INSTALLATION. ANY ADDITIONAL FENCE MATERIALS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PRIVATE PROPERTY OWNERS OR CITY OF ROSEVILLE. REPLACED FENCE SHALL MATCH EXISTING FENCE TYPE. 17. CARE SHALL BE TAKEN TO PROTECT EXISTING PLANTS, SHRUBS, TREES, LAWN, LANDSCAPE AREAS AND IRRIGATION SYSTEMS. ANY ITEMS REMOVED OR DAMAGED SHALL BE REPLACED. ALL ITEMS WHICH REQUIRE REMOVAL OR ARE DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPLACED TO ORIGINAL CONDITION AND TO THE APPROVAL OF THE ENGINEER AND AT CONTRACTOR COST.		18. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL DEVELOP AND SUBMIT TO THE ENGINEER AN EXCAVATION AND SHORING PLAN. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SHEETING, SHORING AND BRACING REQUIRED FOR THE INSTALLATION OF THE UTILITY. ALL EXCAVATIONS SHALL BE KEPT WITHIN THE BOUNDARIES OF DESIGNATED EASEMENTS. 19. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL DEVELOP AND SUBMIT TO THE ENGINEER, A TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL COMPLY WITH THE APPROVED TRAFFIC CONTROL PLAN AT ALL TIMES. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR FURNISHING, INSTALLING AND MAINTAINING ALL WARNING SIGNS AND DEVICES NECESSARY TO SAFEGUARD THE GENERAL PUBLIC AND THE WORK, AND TO PROVIDE FOR THE PROPER AND CONTINUOUS SAFE ROUTING OF VEHICULAR AND PEDESTRIAN TRAFFIC DURING THE PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO WORKING HOURS. THE USE OF FLAGGERS, BARRICADES AND CONSTRUCTION SIGNING SHALL COMPLY WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CMUTCD), LATEST EDITION. 20. ALL MATERIAL CLEARED AND GRUBBED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK, SUCH AS TREES, VEGETATION, FENCING, ETC., SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE AT AN APPROVED DISPOSAL SITE. 21. THE CONTRACTOR SHALL MAINTAIN A SAFE MEANS FOR VEHICULAR AND PEDESTRIAN INGRESS/EGRESS AT ALL TIMES. 22. THE CONTRACTOR SHALL PROVIDE ALL CONSTRUCTION SURVEYING. 23. ALL CONSTRUCTION ACTIVITY SHALL BE LIMITED TO STREET RIGHTS-OF-WAY, CITY OF ROSEVILLE PROPERTY, AND TEMPORARY CONSTRUCTION EASEMENTS OR LICENSE AREA AS SHOWN ON PLANS. 24. THE CONTRACTOR SHALL RESTORE ALL ACCESS ROADS AND STREETS WITHIN THE CONSTRUCTION LIMITS TO PRE-CONSTRUCTION CONDITIONS OR BETTER WITH THE EXCEPTION OF IMPROVEMENTS AS SHOW ON THE CONTRACT DRAWINGS. 25. ALL TRENCHING AND BACKFILL SHALL BE IN ACCORDANCE WITH CITY OF ROSEVILLE STANDARDS AND AS MODIFIED IN THE CONSTRUCTION DETAILS ELSEWHERE IN THE PLANS AND TECHNICAL SPECIFICATIONS. TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED. ALL TRENCHES SHALL BE CLOSED OR COVERED SECURELY WITH STEEL TRENCH PLATES AT THE END OF THE WORK DAY. 26. FOR ALL TRENCHING EXCAVATIONS 5 FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE DIVISION OF INDUSTRIAL RELATIONS PRIOR TO BEGINNING ANY EXCAVATION. A COPY OF THIS PERMIT SHALL BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES. 27. THE CONTRACTOR SHALL ONLY ACCESS THE CONSTRUCTION AREAS VIA ROUTES DESIGNATED AS "CONSTRUCTION ACCESS" ON THE PLANS. ACCESS TO CONSTRUCTION AREAS VIA ALTERNATE ROUTES IS PROHIBITED, UNLESS CONTRACTOR RECEIVES APPROVAL FROM PROPERTY OWNER IN WRITING. CONTRACTOR SHALL PROVIDE CITY OF ROSEVILLE A COPY OF THE SIGNED AGREEMENT BEFORE USING THE ALTERNATE ACCESS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CITY / STATE / COUNTY / ENVIRONMENTAL PERMITTING FOR ALT ENTRANCES. 28. THE CONTRACTOR SHALL CONDUCT ALL WORK WITHIN THE AREAS DESIGNATED AS "CONSTRUCTION LIMITS" ON THE PLANS. 29. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES. 30. STRUCTURES NOTED IN THE PLANS AS EXISTING SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND ANY DISCREPANCIES NOTED SHALL BE REPORTED TO THE ENGINEER. 31. TYPICAL DETAILS AND SCHEDULES INDICATED MAY NOT BE SPECIFICALLY REFERENCED ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE WHERE EACH TYPICAL DETAIL OR SCHEDULE APPLIES. IF LOCATIONS ARE FOUND WHERE NO TYPICAL DETAIL, TYPICAL SCHEDULE, OR SPECIFIC DETAIL APPLIES, THE ENGINEER SHALL BE NOTIFIED. 32. OBSERVATION VISITS (SITE VISITS) BY REPRESENTATIVES OF CITY OF ROSEVILLE DO NOT INCLUDE INSPECTION OF CONSTRUCTION MEANS AND METHODS. SITE VISITS DURING CONSTRUCTION ARE NOT CONTINUOUS AND DETAILED INSPECTION SERVICES ARE TO BE PERFORMED BY OTHERS. OBSERVATIONS ARE PERFORMED SOLELY FOR THE PURPOSE OF DETERMINING IF THE CONTRACTOR UNDERSTANDS DESIGN INTENT SHOWN IN THE CONTRACT DRAWINGS. OBSERVATIONS DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND ARE NOT TO BE CONSTRUED AS SUPERVISION, THE VERIFICATION OF CONSTRUCTION, OR ACCEPTANCE OF THE WORK. 33. ALL SPECIFICATIONS AND CODES NOTED SHALL BE THE LATEST APPROVED EDITIONS AND REVISIONS BY THE AGENCY HAVING JURISDICTION OVER THIS PROJECT. 34. DISPOSAL OF ALL EXISTING MATERIALS NOTED TO BE DEMOLISHED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. 35. CONSTRUCTION AT THE SITE MUST COMPLY WITH APPLICABLE PROVISIONS OF THE CALIFORNIA FIRE CODE CHAPTER 33 "FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION" AND STANDARD DETAIL AND SPECIFICATION SI-7. 36. CONTRACTOR SHALL MONITOR, RECORD AND REPORT GROUND WATER / STORM WATER DISCHARGE FOR ALL DISCHARGE PER SPEC 01140.		37. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF ROSEVILLE STANDARD SPECIFICATIONS, DESIGN & CONSTRUCTION STANDARDS, AND THE SPECIAL PROVISIONS. 38. THE CITY OF ROSEVILLE IS A MEMBER OF THE UNDERGROUND SERVICE ALERT (USA) ONE-CALL SYSTEM. 39. THE CONTRACTOR SHALL MARK IN THE WHITE PAINT ALL AREAS TO BE EXCAVATED PRIOR TO CONTACTING USA. ANY AREAS NOT MARKED WILL NOT BE SUBJECT TO USA, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM EXCAVATION. 40. THE CONTRACTOR SHALL TAKE EXTREME CARE TO PROTECT EXISTING SITE AND ADJACENT IMPROVEMENTS FROM THE DAMAGE. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR OR REPLACE ALL CRACKS AND/OR DAMAGE MADE TO PRE-EXISTING PUBLIC IMPROVEMENTS ALONG THE FRONTAGE OF THE PROJECT SITE AND ANY DAMAGE OF PRE-EXISTING FACILITIES RESULTING FROM CONSTRUCTION, TO CURRENT CITY STANDARDS AND AT THEIR OWN EXPENSE. THE EXTENT OF THE REPAIRS SHALL BE DETERMINED BY THE DEVELOPMENT SERVICES CONSTRUCTION INSPECTOR AND SHALL BE COMPLETED PRIOR TO THE CITY'S ACCEPTANCE OF THE IMPROVEMENTS. 41. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING WATER, SEWER AND/OR DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL THE PROPOSED IMPROVEMENTS ARE IN PLACE AND FUNCTIONING. 42. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS ON THE JOB SITE. CONTRACTOR SHALL NOTIFY ENGINEER WHERE THE WORK MIGHT CAUSE SURVEY MONUMENTS TO BECOME DISTURBED OR DESTROYED. CONTRACTOR SHALL PROVIDE A LICENSES LAND SURVEYOR TO SET REFERENCES AND RESTORE SURVEY MONUMENTS IN ACCORDANCE WITH COUNTY AND CITY STANDARDS. 43. CONTRACTOR SHALL COORDINATE AND NOTIFY THE CONSTRUCTION MANAGER WHEN WORK IS READY FOR INSPECTIONS. PRESENCE OR ABSENCE OF INSPECTOR WILL NOT RELIEVE CONTRACTOR OF FULL RESPONSIBILITY FOR PROPER PERFORMANCE ON WORK. 44. CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL MATERIALS THAT ARE TO BE REMOVED FROM THE SITE INCLUDING, SURPLUS EXCAVATION MATERIALS AND DEBRIS. CONTRACTOR SHALL MAINTAIN THE SITE IN A SAFE, NEAT AD ORDERLY CONDITION. CONTRACTOR SHALL DELIVER MATERIALS OR EQUIPMENT TO BE SALVAGED AND RETURNED TO THE OWNER AT THE LOCATION TO BE DETERMINED BY THE ENGINEER. 45. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS AND SECURITY, INCLUDING PROTECTION OF PUBLIC AND PRIVATE PROPERTY ADJACENT TO THE PROJECT SITE DURING THE CONSTRUCTION OF THE PROJECT. 46. ALL EXISTING FACILITIES NOT DESIGNATED FOR REMOVAL/DEMOLITION DURING CONSTRUCTION OF NEW FACILITIES TO BE PROTECTED IN PLACE RE REPLACED IN KIND AT THE CONTRACTORS OWNERS EXPENSE. 47. ALL PAVEMENT, INCLUDING ASPHALT CONCRETE (AC) AND PORTLAND CEMENT (PCC) PAVING SHALL BE SAW CUT TO A NEAT STRAIGHT LINE AND THE EXPOSED EDGE SHALL BE TACKED WITH EMULSION PRIOR TO PAVING. THE EXPOSED BASE MATERIAL SHALL BE GRADED, RECOMPACTED AND RESEALED PRIOR TO PAVING. 48. COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES RELATING TO SAFETY AND CHARACTER OF WORK, EQUIPMENT AND LABOR COMPLIANCE. THIS SHALL INCLUDE, BUT NOT LIMITED TO, SHORING OF TRENCHES, AND VENTILATION OF CONFINED SPACES. 49. CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE COMMENCING WORK. 50. WHEN EXCAVATION IS REQUIRED AROUND EXISTING UTILITIES THOSE UTILITIES SHALL BE SUPPORTED USING STEEL BEAMS OR OTHER SUITABLE SUPPORTS. 51. ALL CONCRETE TO BE USED IN CURBS AND SIDEWALKS SHALL BE MINOR CONCRETE AS DEFINED IN THE CORDCS. 52. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN THAT SHALL BE APPROVED BY ENGINEERING DIVISION BEFORE START OF WORK IN RIGHT-OF-WAY AND SHALL BE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE MUTCD WITH ALL APPLICABLE CALIFORNIA SUPPLEMENTS 7 AMENDMENTS. AT LEAST ONE LAGE IN EACH DIRECTION SHALL REMAIN OPEN TO TRAFFIC UNLESS OTHERWISE SHOWN ON THE PLANS. TRAFFIC CONTROL HOURS ARE SUBJECT TO LIMITATION BY THE CITY. TRAFFIC CONTROL WITH LANE CLOSURES THAT AFFECT TRAFFIC FLOW MAY REQUIRE NIGHT WORK. IF, AS A PART OF TRAFFIC CONTROL MEASURES, A ROADWAY CLOSURE HAS BEEN APPROVED, THE CONTRACTOR SHALL NOTIFY ENGINEERING DIVISION 72 HOURS IN ADVANCE OF SETTING UP THIS CLOSURE.		53. CONTRACTOR SHALL COMPLY WITH ALL ENVIRONMENTAL POLLUTION CONTROL RULES, REGULATIONS, ORDINANCES AND STATUTES WHICH APPLY TO ANY WORK PERFORMED PURSUANT TO THE CONTRACT, INCLUDING ANY WATER POLLUTION CONTROL RULES, REGULATIONS AND STATUTES SPECIFIED BY THE MOST CURRENT STATE OF CALIFORNIA NPDES GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATES WITH CONSTRUCTION ACTIVITY. (REFER TO GENERAL CONDITIONS SECTION 5, FOR ADDITIONAL REQUIREMENTS). IN THE EVENT OF ANY VIOLATIONS THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL FINES, CITATIONS, PENALTIES AND ALL OTHER JUDGEMENTS THAT SHALL BE IMPOSED. 54. THE CONTRACT DOCUMENTS SHALL CONSTITUTE THESE PLANS, THE TECHNICAL SPECIFICATIONS, THE GENERAL CONDITIONS, THE SUPPLEMENTARY CONDITIONS, AND ALL REFERENCE DOCUMENTS INCLUDING THE MOST RECENT VERSION OF THE CITY OF ROSEVILLE DESIGN AND CONSTRUCTION STANDARDS.	
FOR PROPOSAL PURPOSES ONLY, NOT FOR CONSTRUCTION DESIGNED M FISHER DRAWN J MARTIN CHECKED S KADER APPROVED M FISHER CITY OF ROSEVILLE WATERWORKS ENGINEERS 2280 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-765-2888 CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA GENERAL NOTES DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-G-003 SHEET NUMBER 3							

ABBREVIATIONS

A	AIR	CFS	CUBIC FEET PER SECOND	ESA	ENVIRONMENTALLY SENSITIVE AREA	HSS	HIGH PRESSURE STREAM, HOLLOW	OPNG	OPENING	SE	SOUTHEAST
@	AT	CJ	CONSTRUCTION JOINT,	EVC	END OF VERTICAL CURVE	HWY	HIGHWAY	OPP	OPPOSITE	SEC	SECONDARY
AB	ANCHOR BOLT, AGGREGATE BASE		CONTRACTION JOINT	EVCE	END VERTICAL CURVE ELEVATION	HYD	HYDRANT	OSHA	OCCUPATIONAL SAFETY & HEALTH ADMIN.	SECT	SECTION
AC	ASPHALTIC CONCRETE, ASBESTOS CEMENT	CL	CENTERLINE	EVCS	END VERTICAL CURVE STATION			OZ	OUNCE	SHC	SODIUM HYPOCHLORITE
ACI	AMERICAN CONCRETE INSTITUTE	CL2	CHLORINE	EVMWD	ELSINORE VALLEY MWD	IA	INSTRUMENT AIR			SH	SHEET
ACU	AIR CONDITIONING UNIT	CLDIP	CEMENT-LINED DUCTILE IRON PIPE	EW	EACH WAY	I&C	INSTRUMENTATION & CONTROL	PA	PROCESS AIR	SIM	SIMILAR
ADD	ADDITIONAL	CLG	CEILING	EWEF	EACH WAY, EACH FACE	ID	INSIDE DIAMETER	PC	POINT OF CURVE	SL	SLUDGE
ADH AB	ADHESIVE ANCHOR BOLT	CLR	CLEAR, CLEARANCE	EXP	EXPOSED, EXPANSION	IF	INSIDE FACE, INTERMEDIATE PRESSURE	PE	PLAIN END, POLYETHYLENE, PERMANENT	SLG	SLUDGE
ADJ	ADJACENT, ADJUSTABLE	CLSM	CONTROLLED LOW STRENGTH MATERIAL	EXP JT	EXPANSION JOINT		FEEDWATER		EASEMENT	SLMH	SLUDGE MANHOLE
AE	ANALYZER ELEMENT	CML, CSP	CONCRETE MORTAR LINED AND COATED	EXST	EXISTING	IMLR	INTERNAL MIXED LIQUOR RETURN	PENT	PENETRATION	SLP	SLOPE
AFF	ABOVE FINISH FLOOR		STEEL PIPE			IN	INCH	PI	POINT OF INTERSECTION	SMP	SAMPLE
AFG	ABOVE FINISH GRADE	CMLS	CEMENT MORTAR LINED STEEL PIPE			INFL	INFLUENT	PJF	PREMOLDED JOINT FILLER	SOLN	SOLUTION
AHP	AIR: HIGH PRESSURE	CMP	CORRUGATED METAL PIPE	FA	FOUL AIR	INST	INSTRUMENTATION	PL	PLATE, PROPERTY LINE	SOW	SLIP ON WELD
AIR	COMPRESSED AIR	CMU	CONCRETE MASONRY UNIT	FB	FLAT BAR	INSJL	INSULATE, INSULATION	PLC	PROGRAMMABLE LOGIC CONTROLLER	SP	SPACE OR SPACES
AISC	AMERICAN INSTITUTE OF STEEL	CO	CLEANOUT	FBE	FUSION BONDED EPOXY	INV	INVERT	PLYWD	PLYWOOD	SPD	SUMP PUMP DRAIN
	CONSTRUCTION	COL	COLUMN	FC	FLEXIBLE COUPLING	IP	IRON PIPE	PNL	PANEL	SPEC	SPECIFICATIONS
AIT	ANALYZER INDICATOR/TRANSMITTER	COM	COMMUNICATION	FCA	FLANGED COUPLING ADAPTER	IR	IRON ROD	POB	POINT OF BEGINNING	SPLY	SUPPLY
AL, ALUM	ALUMINUM	COMB	COMBINED	FCO	FLOOR CLEAN OUT	IRR	IRRIGATION	POC	POINT OF CONNECTION	SQ FT	SQUARE FOOT
ALP	AIR LOW PRESSURE	CONC	CONCRETE	FDA	FLOOR DRAIN W/INTEGRAL TRAP	IS	INTERMEDIATE PRESSURE STREAM	POE	POINT OF ENDING, PLAIN ONE END	SQ IN	SQUARE INCH
ALTN	ALTERNATE	CONN	CONNECTION	FDN	FOUNDATION	IW	INJECTION WATER	PP, P&P	PLAN AND PROFILE, POWER POLE	SS	SANITARY SEWER
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	CONT	CONTINUOUS, CONTINUATION	FES	FLARED END SECTION			PPM	PARTS PER MILLION	SSH	SAFETY SHOWER
APPROX	APPROXIMATE	COORD	COORDINATE	FEXT	FIRE EXTINGUISHER	JT	JOINT	PRC	POINT OF REVERSE CURVE	SSMH	SANITARY SEWER MANHOLE
APVD	APPROVED	CPLG	COUPLING	FF	FINISH FLOOR			PRCST	PRECAST	ST	SAMPLE TAP, STEAM TURBINE
APWA	AMERICAN PUBLIC WORKS ASSOCIATION	CT	COPPER TUBING	FG	FINISH GRADE, FUEL GAS	KIP	THOUSAND POUNDS	PREFAB	PREFABRICATED	SST	STAINLESS STEEL
AR	AERATION	CTRD, CTD	CENTERED	FHY	FIRE HYDRANT	KW	KILOWATT	PRESS	PRESSURE	STA	STATION
ARCH, A	ARCHITECTURAL	CTR	CENTER	FI	FLOW INDICATOR			PRC	POINT OF REVERSE CURVE	STD	STANDARD
ARV	AIR RELEASE VALVE	CU	COPPER	FIG	FIGURE	L	LEFT, ANGLE, LENGTH	PRI	PRIMARY	STIF	STIFFENER
ASTM	AMERICAN SOCIETY FOR TESTING AND	CU FT	CUBIC FOOT	FIL	FILTRATE	LAE	LABORATORY	PROP	PROPERTY	STL	STEEL, STEEL PIPE
	MATERIALS	CU IN	CUBIC INCH	FL	FLOOR, FLOW LINE	LATL	LATERAL	PR	PRESSURE	STLS	STEEL PIPE (SPECIAL)
AUTO	AUTOMATIC	CU YD	CUBIC YARD	FLG	FLANGE	LB	POUNDS	PS	PUMP STATION	STR	STRAIGHT
AUX	AUXILIARY	CULV	CULVERT	FLH	FLAT HEAD	LB/CU FT	POUNDS PER CUBIC FOOT	PSF	POUNDS PER SQUARE FOOT	STRL	STRUCTURAL
AV	AIR/VACUUM ASSEMBLY	CWTP	CIRCULATING WATER	FLL	FLOW LINE	LE	LEVEL ELEMENT	PSI	POUNDS PER SQUARE INCH	STRUCT	STRUCTURE
AVE	AVENUE	CWTP	CHAPARRAL WATER TREATMENT PLANT	FM	FLOW METER	LF	LINEAR FEET	PSIG	POUNDS PER SQUARE INCH, GAUGE	SUEFL	SUBFLOOR
AWG	AMERICAN WIRE GAGE	CV	CHECK VALVE	FNSH	FINISH	LIT	LEVEL INDICATOR/TRANSMITTER	PT	POINT OF TANGENCY	SUP	SUPERNATANT, SUPPLY
AWWA	AMERICAN WATER WORKS ASSOCIATION	°C	CELSIUS	FO	FUEL OIL	LONG	LONGITUDINAL	P.U.E.	PUBLIC UTILITY EASEMENT	SUSP	SUSPEND
				FOC	FACE OF CONCRETE	LP	LOW POINT	PV	PLUG VALVE	SW	SOUTHWEST, SERVICE WATER
B	BORING	DBA	DEFORMED BAR ANCHOR	FRP	FIBERGLASS REINFORCED PLASTIC	LR	LONG RADIUS	PVC	POLYVINYL C-ILORIDE PLASTIC, POINT OF	SYMM	SYMMETRICAL
BAV	BALL VALVE	DBL	DOUBLE	FS	FINISHED SURFACE, FLOW SWITCH	LS	LOW PRESSURE STREAM		VERTICAL CURVE		
BC	BEGIN CURVE, BOTTOM OF CURB	DEC	DECANT	FT	FOOT OR FEET	LT	LEVEL TRANSMITTER	PVCGS	POLYVINYL C-ILORIDE PLASTIC-GRAVITY	T	TANGENT, TELEPHONE LINE, TOP
BD	BLOW DOWN	DET	DETAIL	FTG	FOOTING	LSH	LEVEL SWITCH HIGH		SEWER TYPE	T&B	TOP AND BOTTOM
BF	BLIND FLANGE, BOTTOM FACE	DF	DOUGLAS FIR/LARCH	FWD	FORWARD	LSL	LEVEL SWITCH LOW	PVCW	POLYVINYL C-ILORIDE PLASTIC-	T&G	TONGUE AND GROOVE
BFD	BUTTERFLY VALVE DAMPER	DI	DROP INLET, DUCTILE IRON	°F	DEGREE FAHRENHEIT	LVC	LENGTH VERTICAL CURVE		WATER DISTRIBUTION SERVICE TYPE	T, T	THICKNESS
BFV	BUTTERFLY VALVE	DIA	DIAMETER			LWL	LOW WATER LEVEL	PVMT	PAVEMENT	TBC	TUBING
BLDG	BUILDING	DIAG	DIAGONAL	G	GAS			PVI	POINT OF VERTICAL INTERSECTION	TDH	TOTAL DYNAMIC HEAD
BLK	BLACK	DICL	DUCTILE IRON CEMENT LINED	GA	GAGE			PVT	POINT OF VERTICAL TANGENCY, PRIVATE	TECH	TECHNICAL
BLM	BUREAU OF LAND MANAGEMENT	DIL	DILUTE	GAC	GRANULAR ACTIVATED CARBON	MAX	MAXIMUM	PW	POTABLE WATER, PROCESS WATER	TEL	TELEPHONE
BM	BENCH MARK, BEAM	DIM	DIMENSION	GAL	GALLON	MCC	MOTOR CONTROL CENTER			TEMP	TEMPORARY, TEMPERATURE
BO	BLOW OFF	DIMJ	DUCTILE IRON MECHANICAL JOINT	GALV	GALVANIZED	MCJ	MASONRY CONTROL JOINT	R, RAD	RADIUS	TF	TOP FACE
BOC	BACK OF CURB	DIP	DUCTILE IRON PIPE	GB	GRADE BREAK	MECH	MECHANICAL	RBW	RECLAIMED BACKWASH	TG	TOP OF GRATE
BOG	BACK OF GUTTER	DIPPL	DUCTILE IRON PIPE, POLYETHYLENE LINED	GC	GROOVED COUPLING	MFR	MANUFACTURER	RC	REINFORCED CONCRETE	THK	THICK
BOO	BOTTOM OF OPENING	DIR	DIRECTION	GCO	GRADE CLEAN OUT	MGD	MILLION GALLONS PER DAY	RCP	REINFORCED CONCRETE PIPE	THK	TANK
BOT	BOTTOM	DIST	DISTANCE	GCF	GROOVED COUPLING FITTING	MIN	MINIMUM, MINUTE	RDCR	REDUCER	TOC	TOP OF CURB, TOP OF CONCRETE
BRG	BEARING	DN	DOWN	GD	GENERAL DRAINAGE	MISC	MISCELLANEOUS	REF	REFER, REFERENCE	TOW	TOP OF WALL
BVC	BEGINNING OF VERTICAL CURVE	DR	DRAIN	GE	GROOVED END	MJ	MECHANICAL JOINT	REINF	REINFORCED, REINFORCING, REINFORCE	TOW	TOP OF FOOTING
BVCE	BEGIN VERTICAL CURVE ELEVATION	do	DITTO	GL	GLASS	MPH	MILES PER HOUR	REQD	REQUIRED	TP	TURNING POINT, TEST PIT
BVCS	BEGIN VERTICAL CURVE STATION	DPT	DIFFERENTIAL PRESSURE TRANSMITTER	GPD	GALLONS PER DAY	MSE	MECHANICALLY STABILIZED EARTH	RJ	RESTRAINED JOINT	TRANS	TRANSITION
BWD	BACKWASH DISPOSAL	DWG	DRAWING	GPH	GALLONS PER HOUR	MSNRY	MASONRY	RLS	RUBBER LINED STEEL	TRANSV	TRANSVERSE
BWI	BACKWASH IN			GRTG	GRATING	MSP	MILL STEEL PIPE, MANUAL OF STANDARD	RM	ROOM	TST	TOP OF STEEL
BWO	BACKWASH OUT	EA	EACH	GSP	GALVANIZED STEEL PIPE	MTL	MATERIAL	RFCA	RESTRAINED FLANGED COUPLING ADAPTER	TT	THRUST TIE
BYP	BYPASS	EC	END CURVE	GT	GAS TURBINE	MWS	MAXIMUM WATER SURFACE	RMJ	RESTRAINED MECHANICAL JOINT	TURB	TURBIDITY
		ECC	ECCENTRIC	GV	GATE VALVE			RO	ROUGH OPENING, REVERSE OSMOSIS	TW	TOP OF WALL
C to C, CC	CENTER TO CENTER	EE	ELECTRICAL	GVL	GRAVEL	N	NORTH	RP	RADIUS POINT	TWS	TRACER WIRE STATION
C	CHANNEL (BEAM)	EF	EACH FACE, EXHAUST FAN	GW	GROUND WATER	NC	NORMALLY CLOSED	R/R	REMOVE AND REPLACE	TYP	TYPICAL
CAV/ARV	COMBINATION AIR ADMISSION/	EFL	EFFLUENT			NE	NORTHEAST	RST	REINFORCING STEEL		
CARV	AIR RELEASE VALVE	EG	EXISTING GRADE	HD	HUB DRAIN	NEMA	NATIONAL ELECTRICAL	RT	RIGHT	UBC	UNIFORM BUILDING CODE
CATH	COMBINATION AIR RELEASE VALVE	EJ	EXPANSION JOINT	HDPE	HIGH DENSITY POLYETHYLENE PIPE		MANUFACTURERS ASSOCIATION	RTN	RETURN WATER	UD	UNDERDRAIN
	CATHODIC PROTECTION	EL	ELEVATION	HDR	HEADER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	RV	ROOF VENT	UG	UNDERGROUND
CATV	CABLE TELEVISION	ELB, ELL	ELBOW	HDW	HARDWARE	NH	AMMONIA	RW	RAW WATER	UH	UNIT HEATER
CB	CATCH BASIN	ELC	ELECTRICAL LOAD CENTER	HF	HIGH PRESSURE FEEDWATER	NIC	NOT IN CONTRACT	R/W	RIGHT-OF-WAY	UNK	UNKNOWN
CCP	CONCRETE CYLINDER PIPE	ELEC	ELECTRIC, ELECTRICAL	HGL	HYDRAULIC GRADE LINE	NO	NUMBER, NUMBERING			UNO	UNLESS NOTED OTHERWISE
CCS	CENTRAL CONTROL SYSTEM	EM	EMISSION MEASUREMENT	HGT	HEIGHT	NTS	NOT TO SCALE	S	I-BEAM, SOUTH SLOPE		
CE	CONDENSATE	EMR	EMERGENCY	HM	HOLLOW METAL	NW	NORTHWEST	S =	SLOPE EQUALS	V	VENT, VOLT, VALVE
CF	CUBIC FEET	ENGR	ENGINEER	HORIZ	HORIZONTAL			SA	SERVICE AIR	VAC	VACUUM
CFM	CUBIC FEET PER MINUTE	EO	EMERGENCY OVERFLOW	HP	HORSEPOWER	OC	ON CENTER	SAT	SUSPENDED ACOUSTIC TILE	VAR	VENT ACID RESISTANT
CHEM	CHEMICAL	EP	EDGE OF PAVEMENT	HPT	HIGH POINT	OD	OUTSIDE DIAMETER, OVERFLOW DRAIN	SC	SCUM	WSP	VERTICAL CURVE
CI	CAST IRON	EQ	EQUALIZATION	HR	HANDRAIL	OF	OUTSIDE FACE, OVERFLOW	SCFH	STANDARD CUBIC FEET PER HOUR	VERT	VERTICAL
CIGC	CAST IRON GROOVED COUPLING	EQ SP	EQUALLY SPACED	HSS	HIGH PRESSURE STREAM, HOLLOW	OFR	OVERFLOW RETURN	SCFM	STANDARD CUBIC FEET PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE
CIMJ	CAST IRON MECHANICAL JOINT	EQPT	EQUIPMENT		STRUCTURE STEEL	OG	ORIGINAL GROUND	SCH	SCHEDULE	VPI	VERTICAL POINT OF INTERSECTION
CIP	CAST IRON PIPE	ERW	EFFLUENT REUSE WATER	HV	HOSE VALVE	OHE	OVERHEAD ELECTRIC	SD	STORM DRAIN	VPS	VEENER PLASTER SYSTEM
CIRJ	CAST IRON RESTRAINED JOINT	ESC	EROSION SEDIMENT CONTROL	HWL	HIGH WATER LEVEL	OMRF	ORDINARY MOMENT RESISTING FRAME	SCH	SCHEDULE		
CISP	CAST IRON SOIL PIPE	EMR	EMERGENCY	HR	HANDRAIL	O TO O	OUT TO OUT	SDS	SECONDARY DIGESTED SLUDGE	XMFR	TRANSFORMER
										Y	YARD

NOTES

1. FOR ELECTRICAL AND INSTRUMENTATION ABBREVIATIONS, SEE ELECTRICAL AND INSTRUMENTATION DRAWINGS.

2. CONTACT THE ENGINEER FOR ABBREVIATIONS NOT LISTED.
3. THIS IS A STANDARD LEGEND SHEET. THEREFORE, SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET AND MAY NOT BE UTILIZED ON THIS PROJECT.

DESIGNED
M. FISHER

DRAWN
J. MARTIN

CHECKED
S. KADER

APPROVED
M. FISHER

CITY OF ROSEVILLE
ENGINEERS

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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)

ROSEVILLE, CALIFORNIA

GENERAL

ABBREVIATIONS

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-G-004

SHEET NUMBER
4

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NOT FOR
CONSTRUCTION

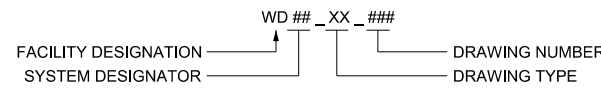
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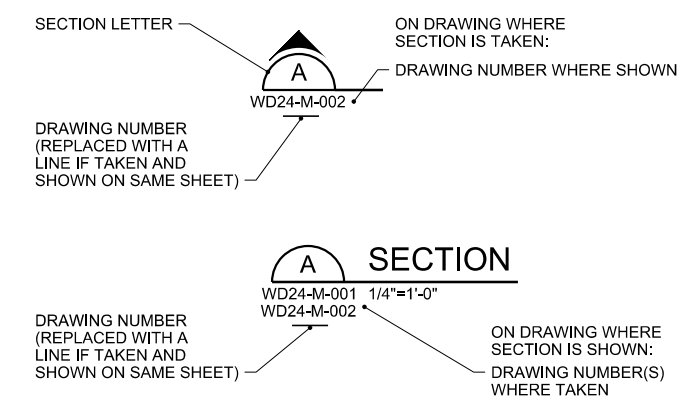
ABBREVIATION	DRAWING TYPE
G	GENERAL
C	CIVIL
GS	GENERAL STRUCTURAL
S	STRUCTURAL
SM	STRUCTURAL/MECHANICAL
GA	GENERAL ARCHITECTURAL
A	ARCHITECTURAL
AS	ARCHITECTURAL/STRUCTURAL
GM	GENERAL MECHANICAL
M	MECHANICAL
GH	GENERAL HVAC
H	HVAC
GE	GENERAL ELECTRICAL
E	ELECTRICAL
GI	GENERAL INSTRUMENTATION
I	INSTRUMENTATION
GN	GENERAL PIPING AND INSTRUMENTATION
N	PIPING AND INSTRUMENT DIAGRAM

DRAWING NUMBER FORMAT

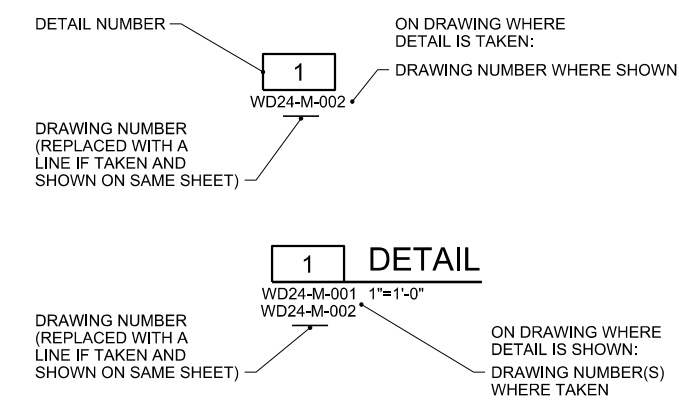


* SEE DEVICE TAGGING STANDARD FOR TABLE OF APPROVED DESIGNATIONS

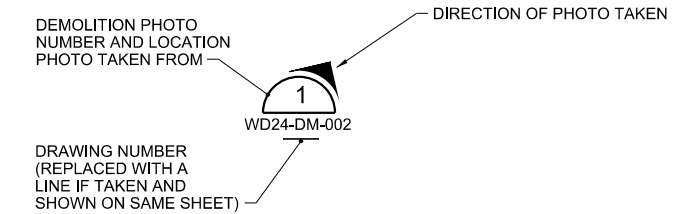
SECTION



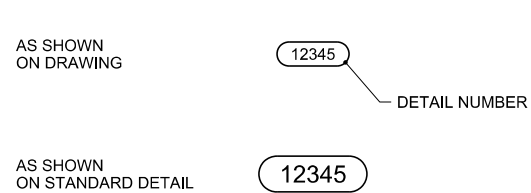
DETAIL



DEMOLITION PHOTO



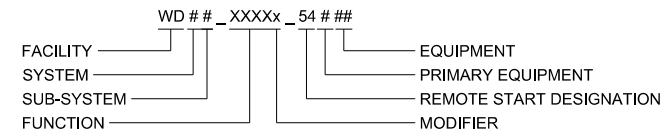
STANDARD DETAIL



NOTES:

- STANDARD DETAIL CALLOUTS ARE SHOWN TO INDICATE DETAIL REQUIRED AT SPECIFIC LOCATIONS. DETAILS ARE NOT CALLED OUT AT ALL LOCATIONS. WHERE A STANDARD DETAIL CALLOUT IS NOT SHOWN, THE CONTRACTOR SHALL USE THE STANDARD DETAIL MOST APPLICABLE AND CONSISTENT WITH OTHER WORK UNDER THIS CONTRACT.

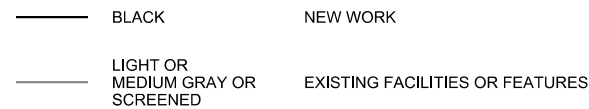
EQUIPMENT, VALVE AND DEVICE DESIGNATIONS



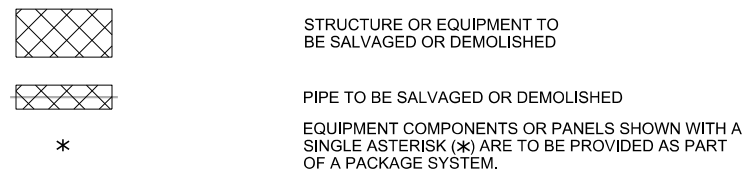
NOTES:

- SEE CITY OF ROSEVILLE DEVICE TAGGING STANDARDS FOR COMPLETE DESIGNATION DESCRIPTIONS.
- COORDINATE WITH ENGINEER FOR EQUIPMENT, VALVES, AND DEVICE DESIGNATIONS NOT SHOWN ON THE DRAWINGS.

LINE TYPE APPEARANCE



GENERAL SYMBOLOGY



FOR PROPOSAL PURPOSES ONLY, NOT FOR CONSTRUCTION



DESIGNED M FISHER	DRAWN J MARTIN	CHECKED S KADER	APPROVED M FISHER
WATERWORKS ENGINEERS 2280 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-785-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL GENERAL DESIGNATIONS			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-G-005			
SHEET NUMBER 5			

1		2		3		4		5		6	
CIVIL LEGEND		CIVIL LEGEND (CONTINUED)						NOTES:		DESIGNED M FISHER	
		SPOT ELEVATION				BEDROCK		1. EXISTING PIPING, EQUIPMENT, AND TOPOGRAPHY IS SHOWN SCREENEDAND/OR LIGHT-LINED. NEW PIPING, EQUIPMENT, STRUCTURE, AND FINISHED GRADE IS SHOWN HEAVY-LINED.		DRAWN J MARTIN	
		CONTOUR LINE				ROCKS OR RIPRAP		2. THIS IS A STANDARD LEGEND SHEET. SOME SYMBOLS MAY APPEAR ON THIS SHEET AND NOT BE USED ON THE PLANS.		CHECKED S KADER	
		CUT SLOPE (HORIZ:VERT)				SAND				APPROVED M FISHER	
		EMBANKMENT - FILL SLOPE (HORIZ:VERT)				AGGREGATE BASE					
		DRAINAGEWAY OR DITCH				NATURAL SOIL					
		DIRECTION OF FLOW				COMPACTED SOIL					
		CENTER LINE, BUILDING, ROAD				CONCRETE					
		PROPERTY LINE				GROUT					
		RIGHT OF WAY, EASEMENT OR SETBACK				CONTROLLED LOW STRENGTH MATERIAL (CLSM)					
		STAGING OR WORK AREA LIMITS				PAVEMENT					
		STRUCTURE, BUILDING OR FACILITY LOCATION POINT COORDINATES				GRATING					
		STRUCTURE, BUILDING OR FACILITY									
		RETAINING WALL									
		CONCRETE CURB									
		ARCHITECTURAL FENCE									
		GUARD RAIL/BARRICADE									
		CHAIN LINK FENCE WITH 3 STRAND BARBED WIRE TOPPING									
		ARCHITECTURAL FENCE									
		CHAIN LINK FENCE									
		BARBED WIRE									
		SINGLE SWING GATE									
		DOUBLE SWING GATE									
		SLIDING GATE									
		CULVERT									
		FIRE HYDRANT									
		WALL									
		BRUSH/TREE LINE									
		TREE									
		DEMOLITION									
		ABANDON IN PLACE									
		AUTOMATIC AIR RELEASE VALVE									
		MANUAL AIR RELEASE VALVE									
		WATER SURFACE									
		GRADE BREAK									
								</			

FOR PROPOSAL
PURPOSES ONLY,
NOT FOR
CONSTRUCTION



	ACTIVE INACTIVE INDICATES PAIR OF DOORS
	DIRECTION SHOWN EXTERIOR OR INTERIOR WALL ELEVATION ELEVATION NUMBER
	ROOM DESIGNATION
	DOOR DESIGNATION
	LOUVER DESIGNATION
	WINDOW DESIGNATION
	● FEXT-1 FIRE EXTINGUISHER
	DOOR, HATCH, OR WINDOW HINGE LOCATION HINGE SIDE
	WALL TYPE DESIGNATION
	NFPA SIGN
	SIGN DESIGNATION
	S201

	CONCRETE
	CMU PLAN
	CMU SECTION
	GYPSUM WALLBOARD
	RIGID INSULATION
	BATT INSULATION
	PLYWOOD
	METAL STUD WALL
	WOOD SECTION
	STEEL
	ACOUSTICAL TILE
	CARPET

1. UNLESS OTHERWISE NOTED, PLAN DIMENSIONS ARE TO NOMINAL SURFACE OF MASONRY, FACE OF STUDS AND FACE OF CONCRETE WALLS.
2. REPETITIVE FEATURES ARE NOT DRAWN IN THEIR ENTIRETY AND SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.
3. CONTRACTOR SHALL VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT PROVIDED IN THIS CONTRACT, OR BY OTHERS.
4. REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER CATEGORIES OF DRAWINGS FOR ADDITIONAL NOTES.
5. VERIFY SIZE AND LOCATION OF, AND PROVIDE: ALL OPENINGS THROUGH FLOORS AND WALLS, ACCESS DOORS, FURRING, CURBS, ANCHORS AND INSERTS. PROVIDE ALL BASES, BLOCKING REQUIRED FOR ACCESSORIES, MECHANICAL, ELECTRICAL AND OTHER EQUIPMENT.

1. THE NON-RESIDENTIAL PROVISIONS OF THE 2016 CALGREEN CODE OUTLINE PLANNING, DESIGN AND DEVELOPMENT METHODS THAT INCLUDE ENVIRONMENTAL RESPONSIBLE SITE SELECTION, BUILDING DESIGN, BUILDING SITTING AND DEVELOPMENT TO PROTECT, RESTORE AND ENHANCE THE ENVIRONMENTAL QUALITY OF THE SITE AND RESPECT THE INTEGRITY OF ADJACENT PROPERTIES; ESTABLISHES THE MEANS OF CONSERVING WATER USED INDOORS, OUTDOORS AND IN WASTEWATER CONVEYANCE; OUTLINES MEANS OF ACHIEVING MATERIAL CONSERVATION AND RESOURCE EFFICIENCY; AND OUTLINES MEANS OF REDUCING THE QUANTITY OF AIR CONTAMINANTS.
2. SWPPP: DEVELOP A SWPPP COMPLIANT WITH STATE STORM WATER NPDES CONSTRUCTION PERMIT OR LOCAL ORDINANCE, WHICHEVER IS STRICTER PER CALGREEN 5.106.1.
3. GRADING AND PAVING: SITE GRADING AND DRAINAGE SYSTEM SHALL SLOPE AWAY FROM THE BUILDING PER THE CONSTRUCTION DRAWINGS AND CALGREEN 5.106.10.
4. WEATHER PROTECTION: PROVIDE A WEATHER-RESISTANT EXTERIOR WALL AND FOUNDATION ENVELOPE AS SHOWN IN THE CONSTRUCTION DRAWINGS AND AS REQUIRED BY CALIFORNIA BUILDING CODE SECTION 1403.2 AND CALIFORNIA ENERGY CODE SECTION 150, MANUFACTURER'S INSTALLATION INSTRUCTIONS OR LOCAL ORDINANCE, WHICHEVER IS MORE STRINGENT PER CALGREEN 5.407.1.
5. CONSTRUCTION WASTE MANAGEMENT: RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 65% OF NONHAZARDOUS CONSTRUCTION AND DEMOLITION DEBRIS OR MEET LOCAL ORDINANCE, WHICHEVER IS MORE STRINGENT PER CALGREEN 5.408.1.
6. CONSTRUCTION WASTE MANAGEMENT PLAN: WHERE A LOCAL JURISDICTION DOES NOT HAVE A CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE THAT IS MORE STRINGENT, SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN PER CALGREEN 5.408.1.1.
7. WASTE MANAGEMENT COMPANY: UTILIZE A WASTE MANAGEMENT COMPANY THAT CAN PROVIDE VERIFIABLE DOCUMENTATION THAT THE PERCENTAGE OF CONSTRUCTION AND DEMOLITION WASTE MATERIAL DIVERTED FROM THE LANDFILL COMPLIES WITH THE CONSTRUCTION WASTE MANAGEMENT. THE OWNER OR CONTRACTOR SHALL MAKE THE DETERMINATION IF THE CONSTRUCTION AND DEMOLITION WASTE MATERIAL WILL BE DIVERTED BY A WASTE MANAGEMENT COMPANY PER CALGREEN 5.408.1.2.
8. DOCUMENTATION: PROVIDE TO THE ENFORCING AGENCY WHICH DEMONSTRATES COMPLIANCE WITH CALGREEN SECTION 5.408.1.1 THROUGH 5.408.1.3. THE WASTE MANAGEMENT PLAN SHALL BE UPDATED AS NECESSARY AND SHALL BE ACCESSIBLE DURING CONSTRUCTION FOR EXAMINATION BY THE ENFORCING AGENCY PER CALGREEN 5.408.1.4.
9. EXCAVATED SOIL AND LAND CLEARING DEBRIS: 100 PERCENT OF TREES, STUMPS, ROCKS AND ASSOCIATED VEGETATION AND SOILS FROM LAND CLEARING SHALL BE REUSED OR RECYCLED PER CALGREEN 5.408.3.
10. TESTING AND ADJUSTING: TESTING AND ADJUSTING OF SYSTEMS SHALL BE REQUIRED FOR NEW BUILDINGS LESS THAN 10,000 SQUARE FEET OR NEW SYSTEMS TO SERVE AN ADDITION OR ALTERATION SUBJECT TO CALGREEN SECTION 303.1 PER CALGREEN SECTION 5.410.4.
11. SYSTEMS: DEVELOP A WRITTEN PLAN OF PROCEDURES FOR TESTING AND ADJUSTING SYSTEMS. SYSTEMS TO BE INCLUDED FOR TESTING AND ADJUSTING SHALL INCLUDE, AS APPLICABLE TO THE PROJECT HVAC AND LIGHTING AND CONTROLS PER CALGREEN 5.410.4.2.
12. PROCEDURES: PERFORM TESTING AND ADJUSTING PROCESS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, MANUFACTURER'S SPECIFICATIONS AND CALGREEN 5.410.4.3.
13. REPORTING: AFTER COMPLETION OF TESTING, ADJUSTING, AND BALANCING, PROVIDE A FINAL REPORT OF TESTING SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PERFORMING THE SERVICES PER CALGREEN 5.410.4.4.
14. O & M MANUAL: PROVIDE THE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING AND MAINTENANCE INSTRUCTIONS AND COPIES OF GUARANTIES/WARRANTIES FOR EACH SYSTEM. O & M INSTRUCTIONS SHALL BE CONSISTENT WITH THE PROJECT SPECIFICATIONS, OSHA REQUIREMENTS IN CCR, TITLE 8 SECTION 5142, AND CALGREEN 5.410.4.5. INCLUDE A COPY OF ALL INSPECTION VERIFICATIONS AND REPORTS REQUIRED BY THE ENFORCING AGENCY.

15. COVERING OF DUCT OPENING AND PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION: AT THE TIME OF ROUGH INSTALLATION OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING AND COOLING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST OR DEBRIS WHICH MAY COLLECT IN THE SYSTEM PER CALGREEN 5.504.3.
16. ADHESIVES, SEALANTS, CAULKS: ADHESIVES AND SEALANTS USED ON THE PROJECT SHALL MEET THE REQUIREMENTS OF THE FOLLOWING STANDARDS PER CALGREEN 5.504.4.1:
 - a. ADHESIVES, ADHESIVE BONDING PRIMERS, ADHESIVE PRIMERS, SEALANTS, SEALANT PRIMERS, AND CAULKS SHALL COMPLY WITH LOCAL OR REGIONAL AIR POLLUTION CONTROL OR AIR QUALITY MANAGEMENT DISTRICT RULES WHERE APPLICABLE, OR SCAQMD RULE 1168 VOC LIMITS, AS SHOWN IN CALGREEN TABLES 5.504.4.1 AND 5.504.4.2.
 - b. AEROSOL ADHESIVES, AND SMALLER UNIT SIZES OF ADHESIVES, AND SEALANT OR CAULKING COMPOUNDS (IN UNITS OF PRODUCT, LESS PACKAGING, WHICH DO NOT WEIGH MORE THAN ONE POUND AND DO NOT CONSIST OF MORE THAN 16 FLUID OUNCES) SHALL COMPLY WITH STATEWIDE VOC STANDARDS AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS, OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION 94507.
17. PAINTS AND COATINGS: ARCHITECTURAL PAINTS AND COATINGS SHALL COMPLY WITH CALGREEN TABLE 5.504.4.2 UNLESS MORE STRINGENT LOCAL LIMITS APPLY PER CALGREEN 5.504.4.3.
18. AEROSOL PAINTS AND COATINGS: AEROSOL PAINTS AND COATINGS SHALL MEET THE PWMIR LIMITS FOR ROC IN SECTION 94522(A)(3) AND OTHER REQUIREMENTS, INCLUDING PROHIBITIONS ON USE OF CERTAIN TOXIC COMPOUNDS AND OZONE DEPLETING SUBSTANCES IN SECTIONS 94522(C)(2) AND (D)(2) OF CALIFORNIA CODE OF REGULATIONS, TITLE 17, COMMENCING WITH SECTION 94520 PER CALGREEN 5.504.4.3.1.
19. VERIFICATION: VERIFICATION OF POLLUTANT CONTROL SHALL BE PROVIDED AT THE REQUEST OF THE ENFORCING AGENCY. DOCUMENTATION MAY INCLUDE, BUT IS NOT LIMITED TO, THE MANUFACTURER'S PRODUCT SPECIFICATION OR FIELD VERIFICATION OF ON-SITE PRODUCT CONTAINERS PER CALGREEN 5.504.4.3.2.
20. INDOOR MOISTURE CONTROL: BUILDINGS SHALL MEET OR EXCEED THE PROVISIONS OF CBC, CCR, TITLE 24, PART 2, SECTIONS 1203 (VENTILATION) AND CHAPTER 14 (EXTERIOR WALLS) PER CALGREEN 5.505.1.
21. OUTSIDE AIR DELIVERY: FOR MECHANICALLY OR NATURALLY VENTILATED SPACES IN BUILDINGS, MEET THE MINIMUM REQUIREMENTS OF SECTION 120.1 OF THE 2013 CEC, OR THE APPLICABLE LOCAL CODE, WHICHEVER IS MORE STRINGENT, AND DIVISION 1, CHAPTER 4 OF CCR, TITLE 8 PER CALGREEN 5.506.1.
22. CFCS: INSTALL HVAC AND REFRIGERATION EQUIPMENT THAT DOES NOT CONTAIN CFCS PER CALGREEN 5.508.1.1.

DOOR SCHEDULE						
DOOR NUMBER	DOOR DIMENSION	LITES	SILL DETAIL	EXIT DEVICE	WALL	CLOSURE
1	5'-8" x 7'-2"	G	8110, TYPE B	R	CMU	R
2	3'-0" x 7'-2"	G	8110, TYPE B	NR	CMU	R
3	3'-0" x 7'-2"	G	8111	R	CMU	NR
4	5'-8" x 7'-10"	-	8110, TYPE B	R	CMU	R

1. INSTALL DOORS AND FRAMES IN ACCORDANCE WITH THE STEEL DOOR INSTITUTE'S RECOMMENDATIONS. PROVIDE TRIM AND JOINT SEALANT AROUND FRAMES TO INSURE A WEATHERTIGHT BARRIER.
2. SEE SPEC SECTION 08700 - DOOR HARDWARE FOR ALL DOOR HARDWARE INCLUDING EXIT DEVICES AND PRIVACY LATCHES. PROVIDE CLOSERS ONLY ON EXTERIOR DOORS.
3. R = REQUIRED, NR = NOT REQUIRED, NP = NOT PERMITTED, G = HALF GLASS, N = NARROW LITE



CITY OF
ROSEVILLE
CALIFORNIA



WATERWORKS
E N G I N E E R S
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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

GENERAL

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD00-G-007
SHEET NUMBER	7

DESIGN CRITERIA:

1. APPLICABLE CODE: 2016 CALIFORNIA BUILDING CODE (2015 INTERNATIONAL BUILDING CODE (IBC), AS AMENDED BY THE STATE OF CALIFORNIA).
2. REFER TO THE SPECIFICATIONS FOR ADDITIONAL AND SPECIFIC STRUCTURAL LOADINGS AND REQUIREMENTS.
3. ROOF LOAD:
- MINIMUM LIVE LOAD 20 psf
4. FLOOR LOAD:
- LIGHT MANUFACTURING 125 psf
 - STAIRS AND EXITS 100 psf
5. WIND LOAD:
- BASIC WIND SPEED (ASCE 7-10) 115 mph
 - EXPOSURE CATEGORY C
 - DESIGN METHOD DIRECTIONAL PROCEDURE
6. SEISMIC LOAD:
- RISK CATEGORY IV
 - IMPORTANCE FACTOR I_e 1.5
 - S_s : 0.538 S_{os} : 0.491
 - S_1 : 0.260 S_{o1} : 0.326
 - SITE CLASS D
 - SEISMIC DESIGN CATEGORY D
7. LATERAL FORCE RESISTING SYSTEM:
- FACILITY 20 TREATMENT BUILDING
 - SPECIAL REINFORCED MASONRY SHEAR WALLS
 - $V = C_s W$
 - $C_s = 0.148$
 - $R = 5$
 - ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE
 - FACILITY 40 PARTIALLY BURIED CONCRETE TANK
 - $R_c = 1.0$
 - $R_t = 3.25$
 - $V = \text{SQRT}[(P_1 + P_2 + P_3)^2 + P_4^2 + P_{EG}^2]$
 - ANALYSIS PROCEDURE = AWWA D110-13, ACI 350.3-06, and ASCE 7-10

GENERAL INFORMATION:

1. ALL CONSTRUCTION SHALL CONFORM TO THE 2016 EDITION OF THE BUILDING CODE.
2. DESIGN DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO ALL SIMILAR SITUATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE KEYED IN EACH LOCATION. CONSULT THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
3. VERIFY ALL OPENING DIMENSIONS IN WALLS, SLABS, AND DECKS WITH THE ARCHITECTURAL, MECHANICAL, HVAC AND ELECTRICAL DRAWINGS.
4. FOR NUMBER, TYPE, SIZE, ARRANGEMENT, AND/OR LOCATION OF EQUIPMENT PADS AND OPENINGS SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, HVAC AND PLUMBING DRAWINGS. COORDINATE ALL OPENINGS AND EQUIPMENT PADS WITH OTHER DISCIPLINES AND EQUIPMENT SUPPLIERS PRIOR TO PLACING SLABS, WALLS AND FOUNDATIONS.
5. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPES, DUCTS, ETC UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.

FOUNDATIONS:

1. IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT #11801.103 BY BAJADA GEOSCIENCES INC., FOUNDATIONS HAVE BEEN DESIGNED FOR THE FOLLOWING VALUES:
- ALLOWABLE BEARING CAPACITY:
 - PRESTRESSED CONCRETE TANK 4,000 psf
 - ALL OTHER FACILITIES 2,000 psf
 - MINIMUM FOOTING EMBEDMENT 18 INCHES
 - LATERAL EARTH PRESSURES (DRAINED):
 - ACTIVE 40 pcf
 - AT-REST 55 pcf
 - LATERAL EARTH PRESSURE (UNDRAINED):
 - ACTIVE 81 pcf
 - AT-REST 90 pcf
 - PASSIVE RESISTANCE 350 pcf
 - SLIDING FRICTION COEFFICIENT:
 - NATIVE SOILS 0.30
 - AT THE PRESTRESSED CONC TANK 0.40
2. NO BACKFILL SHALL BE PLACED BEHIND CANTILEVERED, FREE TOP WALLS UNTIL THE CONCRETE HAS ATTAINED 100% OF ITS SPECIFIED COMPRESSIVE STRENGTH.
3. GRADE TO DRAIN AWAY FROM STRUCTURES A MINIMUM GRADE OF 5% FOR A MINIMUM OF 10'-0" FROM STRUCTURE PERIMETER.
4. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AT LEAST 48 BUSINESS HOURS NOTICE FOLLOWING EXCAVATION FOR FOUNDATIONS AND PRIOR TO THE PLACEMENT OF FORMWORK, REINFORCING STEEL AND CONCRETE.

FORMWORK, SHORING AND BRACING:

1. THE STRUCTURES SHOWN ON THE DRAWINGS HAVE BEEN DESIGNED FOR STABILITY UNDER FINAL CONDITIONS ONLY. THE DESIGN SHOWN DOES NOT INCLUDE THE NECESSARY COMPONENTS OR EQUIPMENT FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION. THE CONTACTOR IS RESPONSIBLE FOR ALL WORK RELATING TO CONSTRUCTION ERECTION METHODS, BRACING, SHORING, RIGGING, GUYS SCAFFOLDING, FORMWORK, AND OTHER WORK AIDS REQUIRED TO SAFELY PERFORM THE WORK SHOWN. CONSTRUCTION OF SHORING AND BRACING OF FORMWORK SHALL BE IN ACCORDANCE WITH ACI 347 "GUIDE TO FORMWORK FOR CONCRETE".

CONCRETE:

1. STRUCTURAL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AND 5,000 PSI AS SPECIFIED IN SECTION 03300 - CAST-IN-PLACE CONCRETE. NONSTRUCTURAL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI
2. THE CONTRACTOR SHALL SUBMIT THE CONCRETE MIX DESIGNS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO USE.
3. HORIZONTAL CONSTRUCTION JOINTS SHALL BE PREPARED TO EXPOSE CLEAN, SOLIDLY EMBEDDED AGGREGATE OVER THE ENTIRE JOINT INTERFACE.
4. PLACEMENT OF PIPES, CONDUITS OR OTHER EMBEDDED ITEMS IN THE CONCRETE SHALL BE IN ACCORDANCE WITH THESE DRAWINGS OR SHALL BE APPROVED BY THE ENGINEER.
5. NO ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.
6. CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.
7. THE REQUIREMENTS FOR CONCRETE MIXES, PLACING, TESTING AND CURING ARE CONTAINED IN THE PROJECT SPECIFICATIONS.
8. PORTLAND CEMENT SHALL CONFORM TO ASTM C150 TYPE II, AGGREGATE SHALL CONFORM TO ASTM C33.
9. CONTINUOUS WATERSTOP, AS SPECIFIED, SHALL BE INSTALLED IN ALL EXPANSION, CONTRACTION, CONTROL AND CONSTRUCTION JOINTS IN WALLS AND SLABS OF WATER HOLDING BASINS, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
10. THE CONCRETE JOINTS IN SLABS AND WALLS, AS SHOWN, ARE MINIMUM REQUIREMENTS. CONTRACTOR MAY SUBMIT ALTERNATE CONSTRUCTION JOINT LAYOUT DRAWINGS, SUBJECT TO SPECIFIED REQUIREMENTS, TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
11. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AT LEAST 48 BUSINESS HOURS NOTICE PRIOR TO THE PLACEMENT OF CONCRETE TO ALLOW SUFFICIENT TIME FOR INSPECTIONS AND SCHEDULING OF TESTING SERVICES.

CONCRETE REINFORCING:

1. CLEARANCE FOR REINFORCEMENT BARS, UNLESS SHOWN OTHERWISE, SHALL BE: CAST AGAINST EARTH = 3", CONCRETE SURFACES OF WATER BEARING STRUCTURES = 2", ALL OTHER CONCRETE SURFACES: #5 BAR OR SMALLER = 1 1/2", #6 BAR OR LARGER = 2".
2. REFER TO WALL CORNER AND WALL INTERSECTION REINFORCING DETAIL 3303. WALL CORNER REINFORCING SIZES AND SPACINGS SHALL BE AS SHOWN ON THE DRAWINGS AND REFERENCED TO THIS DETAIL. TYPICAL HORIZONTAL WALL REINFORCING SHALL LAP WITH THE CORNER HORIZONTAL REINFORCING.
3. PROVIDE A MINIMUM OF TWO VERTICAL WALL BARS WITH MATCHING DOWELS AT WALL ENDS, CORNERS AND INTERSECTIONS WITH SIZE TO MATCH TYPICAL VERTICAL REINFORCING STEEL AS SHOWN. VERTICAL WALL BARS SHALL BE LAPPED WITH DOWELS FROM BASE SLABS AND EXTENDED INTO THE TOP FACE OF ROOF SLABS AND LAPPED WITH TOP SLAB REINFORCEMENT.
4. ALL BENDS, UNLESS OTHERWISE SHOWN, SHALL BE 90 DEGREE ACI 318 STANDARD HOOKS.
5. ALL REINFORCING BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:
- | CONCRETE DESIGN STRENGTH = 4,000 PSI # | | GRADE 60 REINFORCED STEEL | | | | | | |
|--|--|---------------------------|-------|-------|--------|-------|--------|-------|
| BAR SIZE | | #4 | #5 | #6 | #7 | #8 | #9 | #10 |
| LAP SPLICE LENGTH | | | | | | | | |
| TOP BAR * | | 2'-8" | 3'-4" | 4'-0" | 5'-10" | 6'-8" | 7'-7" | 8'-6" |
| OTHER BAR | | 2'-1" | 2'-7" | 3'-1" | 4'-6" | 5'-2" | 5'-10" | 6'-7" |
- * TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.
- # WHERE 3,000 PSI CONCRETE IS USED, INCREASE ABOVE LENGTHS BY 16%.

STRUCTURAL STEEL:

1. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS AND CODE OF STANDARD PRACTICE.
2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATION:
- HOLLOW STRUCTURAL SECTIONS: A500 GRADE B MINIMUM $F_y = 46$ ksi
 - PIPE: A53 GRADE B MINIMUM $F_y = 35$ ksi
 - WIDE FLANGE SECTIONS: A992 MINIMUM $F_y = 50$ ksi
 - PLATES, ANGLES, AND CHANNELS: A36 MINIMUM $F_y = 36$ ksi
3. OPENINGS SHALL NOT BE PLACED IN STEEL MEMBERS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL PLANS.
4. STRUCTURAL STEEL SHALL BE FREE OF EXCESSIVE RUST, MILL SCALE OR GREASE.
5. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND SHALL CONFORM TO THE REQUIREMENTS OF CBC SECTION 2204 AND THE AMERICAN WELDING SOCIETY (AWS), LATEST EDITION, AS FOLLOWS:
- D1.1, STRUCTURAL WELDING CODE – STEEL
 - D1.2, STRUCTURAL WELDING CODE – ALUMINUM
 - D1.6, STRUCTURAL WELDING CODE – STAINLESS STEEL
6. WELDING ELECTRODES SHALL BE THE FOLLOWING TYPES: E70XX.
7. ALL FILLET WELDS SHALL BE AISC MINIMUM AND BUTT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) UNLESS INDICATED OTHERWISE.
8. ALL BOLTS SHALL BE HIGH-STRENGTH ASTM A325X UNLESS NOTED OTHERWISE. ASTM F1852 HIGH-STRENGTH BOLTS SHALL BE USED FOR TWIST-OFF BOLTS. ALL HIGH-STRENGTH BOLTED CONNECTIONS SHALL BE ASSUMED TO BE SNUG-TIGHTENED JOINTS. SLIP CRITICAL CONNECTIONS SHALL BE NOTED AS A325X-SC, UNLESS NOTED OTHERWISE.
9. DISTANCE FROM EDGE OF PLATE TO CENTER OF BOLT SHALL BE 1 1/2" UNO.
10. INSTALLATION AND INSPECTION OF HIGH STRENGTH BOLTS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST AISC SPECIFICATION, SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS (RCSC).
11. THE STRUCTURAL STEEL FABRICATOR/CONTRACTOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL FOR ENGINEERS REVIEW AND APPROVAL PRIOR TO FABRICATION.

FOR PROPOSAL
PURPOSES ONLY,
NOT FOR
CONSTRUCTION



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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)

ROSEVILLE, CALIFORNIA

GENERAL

STRUCTURAL NOTES

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-G-008

SHEET NUMBER
8

PREFABRICATED OPEN WEB METAL JOISTS:

1. JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE AISC AND THE STEEL JOIST INSTITUTE.
2. DESIGN OPEN WEB STEEL JOISTS FOR THE FOLLOWING LOADS:
- ROOF LIVE LOAD 20 psf
 - SUPERIMPOSED ROOF DEAD LOAD 15 psf
 - FASCIA 200 lb CONCENTRATION AT OVERHANGS
 - MECH/ELEC/PIPING 300 lb POINT LOAD AT ANY PANEL POINT (BTM CHORD)
 - NET WIND UPLIFT, TYPICAL JOIST 18 psf OUTWARD
 - ROOF OVERHANGS 27 psf OUTWARD
 - AXIAL TOP CHORD DRAG FORCE 2.41 k (ASD, TENSION AND COMPRESSION)
3. LOADS INDICATED ABOVE ARE MINIMUM DESIGN LOADS AND SHALL NOT BE CONSTRUED TO BE ALL LOADS APPLICABLE TO THE DESIGN OF THE OPEN WEB METAL JOISTS. DEAD LOADS INFERRED BY THE DRAWINGS WHICH WOULD BE INCLUDED IN COMMON PRACTICE, INCLUDING EQUIPMENT LOADS AND CONSTRUCTION LOADS, SHALL BE INCLUDED IN THE DESIGN.
4. VERIFY AND COORDINATE EQUIPMENT WEIGHTS, LOCATIONS, AND ATTACHMENT REQUIREMENTS PRIOR TO JOIST FABRICATION. EQUIPMENT SUPPLIER SHALL BE RESPONSIBLE FOR THE DESIGN OF THE VERTICAL AND LATERAL SUPPORT OF THEIR EQUIPMENT. JOIST MANUFACTURER SHALL PROVIDE ADDITIONAL DIAGONAL WEB MEMBERS AT CONCENTRATED LOAD LOCATIONS.
5. WIND ANALYSIS FOR THE JOISTS SHALL USE THE PROVISIONS OF THE 2016 CBC AND ASCE 7-10 FOR COMPONENTS AND CLADDING.
6. JOIST SIZES AND CHORD SIZES INDICATED ON THE PLANS ARE MINIMUM ONLY. DESIGN BY THE JOIST MANUFACTURER MAY RESULT IN A LARGER SIZE. JOISTS SHALL HAVE DOUBLE ANGLE CHORDS.
7. PROVIDE CALCULATIONS, PRODUCT DATA, MATERIAL PROPERTIES, CONNECTION DETAILS, ETC. FOR ALL TYPES OF JOISTS. CALCULATIONS SHALL BE STAMPED AND SIGNED BY AN ENGINEER REGISTERED IN THE SAME STATE AS THE PROJECT.
8. JOIST BRIDGING, BOTTOM CHORD BRACING, AND OTHER ACCESSORIES SHALL BE PER THE MANUFACTURER'S STANDARDS AND AS INDICATED ON THE DRAWINGS. BRACING SHALL EXTEND TO WALLS.
9. JOIST ENDS SHALL BE DESIGNED WITH A SLOPED SEAT FOR THE LEVEL BEARING SURFACE.

MASONRY:

1. SOLID GROUT ALL CELLS UNLESS INDICATED OTHERWISE.
2. MORTAR SHALL CONFORM TO ASTM C270, TYPE S, HYDRATED AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 1,900 PSI.
3. GROUT SHALL CONFORM TO ASTM C476 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2,000 PSI CONTAINING NO MASONRY CEMENT.
4. CONCRETE BLOCK UNITS SHALL BE MEDIUM WEIGHT AND CONFORM TO ASTM C90 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 1,900 PSI. LINEAR SHRINKAGE SHALL NOT EXCEED 0.065 PERCENT.
5. PLACE COURSES IN RUNNING BOND PATTERN, UNLESS SPECIFICALLY INDICATED OTHERWISE.
6. REINFORCING STEEL FOR MASONRY SHALL CONFORM TO ASTM A615, GRADE 60 FOR DEFORMED BARS. LAP VERTICAL REINFORCING 48 BAR DIAMETERS WITH DOWELS AT BUILDING WALLS. LAP ALL OTHER VERTICAL BARS 72 BAR DIAMETERS. LAP VERTICAL BARS IN CANTILEVER WALLS 72 BAR DIAMETERS. STAGGER ADJACENT LAP SPLICES BY 24 INCHES, WHEN SEPARATED BY 3 INCHES OR LESS. REFERENCE STANDARD DETAIL 4002 - REINFORCED CMU WALL.
7. HORIZONTAL REINFORCING BARS SHALL BE CONTINUOUS AROUND WALL CORNERS AND THROUGH WALL INTERSECTIONS AND HOOKED AT WALL ENDS AS SHOWN IN THE DETAILS.
8. VERTICAL REINFORCING SHALL BE PLACED AT CORNERS, EACH SIDE OF OPENINGS, END WALLS (INCLUDING EACH SIDE OF CONTROL JOINTS), AT A MAXIMUM SPACING INDICATED IN THE DRAWINGS, AND CONTINUOUS FROM FOUNDATION TO TOP OF WALL.
9. CMU REINFORCING AT WALL INTERSECTIONS AND CORNERS SHALL BE AS INDICATED IN STANDARD DETAIL 4001 - CMU WALL CORNERS, UNLESS INDICATED OTHERWISE.
10. CMU REINFORCING AT ALL WALL ENDS, JAMBS AND DOOR OPENINGS, WINDOW LINTELS, LOUVERS AND PENETRATIONS SHALL BE INDICATED IN STANDARD DETAIL 4004 - CMU OPENINGS GREATER THAN 3'-0" OR STANDARD DETAIL 4003 - CMU OPENINGS LESS THAN 3'-0", UNLESS INDICATED OTHERWISE.
11. CMU WALL CONTROL JOINTS SHALL BE LOCATED WHERE SHOWN ON THE DRAWINGS, AND SHALL RUN CONTINUOUS FROM THE TOP OF FOUNDATION TO TOP OF WALL OR PARAPET. ALL HORIZONTAL NON-STRUCTURAL BARS SHALL BE TERMINATED IN A STANDARD HOOK EACH SIDE OF JOINT. STRUCTURAL BARS SHALL BE CONTINUOUS THROUGH CONTROL JOINTS.

COLD-FORMED STEEL:

1. ALL MEMBERS AND ACCESSORIES SHALL BE ASTM A570 OR A446, WITH MINIMUM YIELD OF 33ksi FOR 18ga & 20ga, 50ksi FOR 14ga & 16ga, HAVING SECTION PROPERTIES AND GAUGE AS NOTED ON THE DRAWINGS.
2. FRAMING HARDWARE NOTED IS SIMPSON STRONG-TIE AND SHALL BE INSTALLED WITH CONNECTIONS SPECIFIED FOR EACH SPECIFIC DEVICE BY THE MANUFACTURER'S CURRENT CATALOG. EQUIVALENT DEVICES APPROVED BY THE ENGINEER MAY BE SUBSTITUTED.
3. INSTALLATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AS MODIFIED BY NOTES ON THE DRAWINGS.
- STAINLESS STEEL:**
1. STAINLESS STEEL MEMBERS SHALL CONFORM TO ASTM SPECIFICATIONS:
- PLATES: A240
 - BARS AND SHAPES: A276
 - FASTENERS AND FITTINGS: A320
 - DEFORMED AND PLAIN BARS: A955
2. ALL COMPONENTS SHALL BE STAINLESS STEEL TYPE 316, UNLESS SHOWN OTHERWISE.
3. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWS D1.6. WELDERS SHALL HOLD VALID CERTIFICATES ISSUED BY AN ACCEPTED TESTING AGENCY WITHIN THE LAST 12 MONTHS.
4. ALL FILLET WELDS SHALL BE AWS MINIMUM AND BUTT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP), UNLESS INDICATED OTHERWISE.
5. WELDERS SHALL SUBMIT PRE-QUALIFIED WELDS AND WELDING PROCEDURES FOR REVIEW AND TO BE AVAILABLE ON PREMISES FOR REVIEW.
6. OPENINGS SHALL NOT BE PLACED IN STAINLESS STEEL MEMBERS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL PLANS.
7. THE STAINLESS STEEL FABRICATOR/CONTRACTOR SHALL FURNISH SHOP DRAWINGS OF ALL STAINLESS STEEL FOR ENGINEER'S REVIEW AND APPROVAL PRIOR TO FABRICATION.

ALUMINUM:

1. ALUMINUM CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ALUMINUM CONSTRUCTION MANUAL OF THE ALUMINUM ASSOCIATION.
2. UNLESS OTHERWISE INDICATED, STRUCTURAL ALUMINUM MEMBERS SHALL BE ALLOY 6061-T6.
3. WHERE ALUMINUM IS IN CONTACT WITH CONCRETE OR MASONRY SURFACES, CONTACT SURFACES SHALL BE COATED WITH HEAVY ALKALI-RESISTANT BITUMINOUS PAINT.
4. GRATING AND CHECKERED PLATE SHALL BE ALUMINUM, UNLESS NOTED OTHERWISE. PROVIDE FULLY BANDED ALUMINUM GRATING WITH NON-SKID SURFACE OVER AREAS INDICATED ON THE DRAWINGS. MATERIAL SHALL BE 6061-T6 OR 6063-T6 PROVIDED WITH AN ANODIZED FINISH AND MEET THE STRENGTH AND DEFLECTION REQUIREMENTS.
5. THE ALUMINUM FABRICATOR/CONTRACTOR SHALL FURNISH SHOP DRAWINGS OF ALL ALUMINUM MEMBERS AND GRATING FOR ENGINEERS REVIEW AND APPROVAL PRIOR TO FABRICATION.

ADHESIVE ANCHORS:

1. THE ADHESIVE ANCHOR SYSTEM USED FOR POST-INSTALLED ANCHORAGE TO CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENTLY PUBLISHED ACI 308.4, ACCEPTANCE CRITERIA FOR QUALIFICATION OF POST-INSTALLED ADHESIVE ANCHORS IN CONCRETE AND COMMENTARY. THE ANCHOR SYSTEM SHALL BE ONE OF THE FOLLOWING:
- HILTI HIT-HY 200.
 - SIMPSON SET-XP.
2. ADHESIVE ANCHORS SHALL BE SUPPLIED AS AN ENTIRE SYSTEM INCLUDING, BUT NOT LIMITED TO, THE NEW ADHESIVE CARTRIDGE, A CLEAN MIXING NOZZLE, EXTENSION TUBE, A DISPENSING GUN, AND ALL MANUFACTURER RECOMMENDED SUPPLIES FOR PROPERLY CLEANING THE DRILLED HOLE.
3. ALL-THREAD ROD TO BE USED IN ADHESIVE ANCHOR ASSEMBLIES SHALL CONFORM TO ASTM A36, A193 (GR B7), A307, OR F1554. STAINLESS STEEL ANCHOR RODS SHALL BE TYPE 316. NUTS, WASHERS, AND OTHER HARDWARE USED WITH AN ALL-THREAD SHALL HAVE A MATERIAL OR ALLOY DESIGNATION THAT MATCHES THE ALL-THREAD MATERIAL / ALLOY.
4. REINFORCING BARS SHALL BE ASTM A615 OR A706.
5. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT THE TIME OF ADHESIVE ANCHOR INSTALLATION. CONCRETE SHALL HAVE A MINIMUM AGE OF 21 DAYS AT THE TIME OF ADHESIVE ANCHOR INSTALLATION.
6. CONCRETE TEMPERATURE AT THE TIME OF ADHESIVE ANCHOR INSTALLATION SHALL BE AT LEAST 50°F.
7. EMBEDMENT DEPTH AND ANCHOR PROJECTION FROM THE CONCRETE SURFACE SHALL BE AS SHOWN ON THE DRAWINGS FOR THE PARTICULAR ANCHOR OR GROUP OF ANCHORS BEING INSTALLED. ABSENT ANY INFORMATION, THE MINIMUM EMBEDMENT DEPTH SHALL BE 12d WHERE "d" IS THE ANCHOR DIAMETER.
8. ADHESIVE ANCHORS SHALL BE INSTALLED BY QUALIFIED PERSONNEL TRAINED TO INSTALL ADHESIVE ANCHORS IN ACCORDANCE WITH THE SPECIFICATIONS. POST-INSTALLED ADHESIVE ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
9. INSTALLATION OF ADHESIVE ANCHORS HORIZONTALLY OR UPWARDLY INCLINED TO SUPPORT SUSTAINED TENSION LOADS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM. THESE ANCHORS ARE DESIGNATED WITH A (CERT) AFTER THE ANCHOR CALL-OUT.
10. THE INSTALLER'S QUALIFICATIONS SHALL BE SUBMITTED AND APPROVED IN ACCORDANCE WITH SECTION 05051 OF THE SPECIFICATIONS.
11. WHEN DRILLING HOLES IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR.
12. SPECIAL INSPECTION IS REQUIRED PER CBC SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORT. THE SPECIAL INSPECTOR MUST BE PERIODICALLY ON THE JOBSITE DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE, ANCHOR SPACING, AND CONCRETE THICKNESS.
13. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS SHALL BE CONTINUOUSLY INSPECTED DURING INSTALLATION BY AN INSPECTOR SPECIALLY APPROVED FOR THAT PURPOSE BY THE BUILDING OFFICIAL.

EXPANSION ANCHORS:

1. EXPANSION ANCHORS SHALL BE STAINLESS STEEL HILTI KWIK BOLT TZ OR SIMPSON STRONG-BOLT 2, UNLESS NOTED OTHERWISE. INSTALL ANCHORS IN CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS AND ICC REPORT.
2. SPECIAL INSPECTION IS REQUIRED PER CBC SECTION 1705 AND THE REQUIREMENTS OF THE ICC REPORT.
3. CONTRACTOR SHALL VERIFY MINIMUM EDGE DISTANCES, SPACING AND THICKNESSES ARE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS PRIOR TO INSTALLING ANCHORS.
4. WHEN DRILLING HOLES IN EXISTING CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. MAINTAIN A REASONABLE CLEARANCE BETWEEN REINFORCEMENT AND THE DRILLED-IN ANCHOR.
5. THE SPECIAL INSPECTOR MUST BE PRESENT ON THE JOB SITE DURING ANCHOR INSTALLATION TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, HOLE CLEANLINESS, EMBEDMENT DEPTH, CONCRETE TYPE, DRILL BIT DIAMETER, HOLE DEPTH, EDGE DISTANCE, ANCHOR SPACING, AND CONCRETE THICKNESS.

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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)

ROSEVILLE, CALIFORNIA

GENERAL

STRUCTURAL NOTES

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-G-009

SHEET NUMBER
9

DEFERRED SUBMITTALS:

1. PER 2016 CBC 107.3.4.1 THE FOLLOWING ITEMS, DRAWINGS AND CALCULATIONS, SHALL BE STAMPED BY AN ENGINEER REGISTERED IN THE STATE OF THE PROJECT. ITEMS SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FOR REVIEW AND APPROVAL. FOLLOWING APPROVAL BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE, THE CONTRACTOR SHALL SUBMIT THE ITEMS TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE STRUCTURE. THE CONTRACTOR SHALL NOT START FABRICATION OR ERECTION PRIOR TO REVIEW AND APPROVAL BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL TIME AND EFFORT REQUIRED TO OBTAIN A BUILDING OFFICIAL REVIEW/PERMIT FOR THE FOLLOWING PREFABRICATED STRUCTURAL COMPONENTS:
- HANDRAIL AND GUARDRAIL
 - PIPE SUPPORT SYSTEM
 - OPEN WEB STEEL JOISTS
 - ANCHORAGE OF EQUIPMENT OVER 400 POUNDS

STRUCTURAL OBSERVATION:

1. STRUCTURAL OBSERVATION SHALL BE IN ACCORDANCE WITH THE 2016 CBC SECTION 1704.6 TOGETHER WITH LOCAL AND STATE AMENDMENTS.
2. THE OWNER SHALL EMPLOY A REGISTERED DESIGN PROFESSIONAL TO PERFORM STRUCTURAL OBSERVATIONS FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS. STRUCTURAL OBSERVATION DOES NOT WAIVE THE RESPONSIBILITY FOR ANY REQUIRED SPECIAL INSPECTIONS OR INSPECTIONS BY THE BUILDING OFFICIAL.
3. ONSITE STRUCTURAL OBSERVATION SHALL BE PERFORMED AT LEAST ONCE A MONTH, PLUS AT COMPLETION, FOR EACH SEISMIC FORCE OR WIND FORCE RESISTING SYSTEM IDENTIFIED, INCLUDING FOUNDATIONS AND CONNECTIONS.
4. AT THE CONCLUSION OF CONSTRUCTION, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES WHICH, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.
5. STRUCTURAL OBSERVATION SHALL INCLUDE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM FOR EACH STRUCTURE CONTAINED IN THE WORK. THE CONTRACTOR SHALL SCHEDULE AND FACILITATE STRUCTURAL OBSERVATION INCLUDING THE FOLLOWING:
- FOUNDATION REINFORCING STEEL, WATERSTOPS, EMBEDS, AND SIMILAR ITEMS PRIOR TO CONCRETE PLACEMENT.
 - WALL TO FOUNDATION CONNECTIONS PRIOR TO FORM CLOSURE FOR ALL MATERIALS.
 - ELEVATED CONCRETE SLABS PRIOR TO CONCRETE PLACEMENT.
 - MASONRY WALL REINFORCING STEEL PRIOR TO GROUTING AND PRIOR TO CLOSING OF CLEANOUTS.
 - SYSTEM CONNECTION EMBEDS PRIOR TO GROUT OR CONCRETE PLACEMENTS.
 - CONCRETE WALL TO ROOF CONNECTIONS PRIOR TO FORM CLOSURE OR OTHER COVER.
 - STEEL DECK CONNECTIONS PRIOR TO INSTALLATION OF ROOFING.

STATEMENT OF SPECIAL INSPECTIONS:

1. SPECIAL INSPECTION IS IN ADDITION TO THE INSPECTIONS REQUIRED BY SECTION 110 OF THE CBC. THE OWNER SHALL EMPLOY A SPECIAL INSPECTOR DURING CONSTRUCTION ON THE TYPES OF WORK INDICATED BELOW.
2. SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT QUALIFIED PERSON WHO IS ACCEPTABLE TO THE ENGINEER AND BUILDING DEPARTMENT. THE INSPECTORS FOR EACH SYSTEM AND MATERIAL WILL BE ICC CERTIFIED OR OTHERWISE APPROVED BY THE BUILDING OFFICIAL. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONTRACT DOCUMENTS AND SUBMIT RECORDS OF INSPECTION.
3. INSPECTION RECORDS AND TESTING REPORTS SHALL BE SUBMITTED TO THE ENGINEER, OWNER, AND BUILDING OFFICIAL WITHIN ONE WEEK OF INSPECTION OR WITHIN ONE WEEK OF TEST COMPLETION.
4. AT THE CONCLUSION OF CONSTRUCTION, A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF DISCREPANCIES SHALL BE SUBMITTED.
5. PERIODIC SPECIAL INSPECTION IS DEFINED AS SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS INTERMITTENTLY PRESENT WHERE THE WORK TO BE INSPECTED HAS BEEN OR IS BEING PERFORMED
6. SPECIAL INSPECTION IS REQUIRED PER CHAPTER 17 OF THE CBC FOR THE FOLLOWING ITEMS:
- SOILS (BY CONTRACTOR PER SPECIFICATION SECTION 02300)
 - CONCRETE CONSTRUCTION
 - MASONRY CONSTRUCTION
 - STEEL CONSTRUCTION
 - OPEN-WEB STEEL JOISTS

REQUIRED VERIFICATION AND SPECIAL INSPECTION OF SOILS					
VERIFICATION AND INSPECTION		CONTINUOUS	PERIODIC	REFERENCED STANDARD	2016 CBC REFERENCE
1.	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	-	X	SECTION 02300 - EARTHWORK	1705.6, 1804
2.	VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	-	X	SECTION 02300 - EARTHWORK	1705.6
3.	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	-	X	SECTION 02300 - EARTHWORK	1705.6
4.	VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	-	SECTION 02300 - EARTHWORK	1705.6
5.	PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	-	X	SECTION 02300 - EARTHWORK	1705.6

REQUIRED SPECIAL INSPECTION OF CONCRETE CONSTRUCTION					
VERIFICATION AND INSPECTION		CONTINUOUS	PERIODIC	REFERENCED STANDARD	2016 CBC REFERENCE
1.	INSPECTION OF REINF STEEL AND PLACEMENT	-	X	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
3.	INSPECTION OF ANCHORS CAST IN CONCRETE	-	X	ACI 318: 17.8.2	-
4.a.	INSPECTION OF ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	X	-	ACI 318: 17.8.2.4	-
4.b.	INSPECTION OF MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	-	X	ACI 318: 17.8.2	-
5.	VERIFYING USE OF REQUIRED DESIGN MIX	-	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6.	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM: C172, C31 ACI318: 26.4, 26.12	1908.10
7.	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8.	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	-	X	ACI 318: 26.5.3-26.5.5	1908.9
9.	INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES	X	-	ACI 318: 26.10	-
11.	VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS	-	X	ACI 318: 26.11.2	-
12.	INSPECTION FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	-	X	ACI 318: 26.11.1.2(b)	-

REQUIRED SPECIAL INSPECTION OF MASONRY CONSTRUCTION, LEVEL C, RISK CATEGORY IV					
INSPECTION TASK		CONTINUOUS	PERIODIC	REFERENCE STANDARD: ACI 530/ASCE 5	REFERENCE STANDARD: ACI 530.1/ASCE 6
1.	VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS	-	X	-	Art. 1.5
2.	VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
2a.	PROPORTIONS OF SITE-PREPARED MORTAR AND GROUT	-	X	-	Art. 2.1, 2.6 A
2b.	GRADE, TYPE, AND SIZE OF REINF AND ANCHOR BOLTS	-	X	Sec. 1.16	Art. 2.4, 3.4
2c.	PLACEMENT OF MASONRY UNITS AND CONSTRUCTION OF MORTAR JOINTS	-	X	-	Art. 3.3 B
2d.	PLACEMENT OF REINF AND CONNECTORS	X	-	Sec. 1.16	Art. 3.2 E, 3.4, 3.6 A
2e.	GROUT SPACE PRIOR TO GROUTING	X	-	-	Art. 3.2 D, 3.2 F
2f.	PLACEMENT OF GROUT	X	-	-	Art. 3.5
2g.	SIZE AND LOCATION OF STRUCTURAL ELEMENTS	-	X	-	Art. 3.3 F
2h.	TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION	X	-	Sec. 1.16.4.3, 1.17.1	-
2i.	WELDING AND REINFORCING BARS	X	-	Sec. 2.1.7.7.2, 3.3.3.4 (c), 8.3.3.4 (b)	-
2j.	PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER OR HOT WEATHER	-	X	-	Art. 1.8 C, 1.8 D
3.	OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	X	-	-	Art. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4
REQUIRED MINIMUM TESTS:					
1.	VERIFICATION OF fm PRIOR TO CONSTRUCTION	-	X	-	Art. 1.4 B
2.	VERIFICATION OF PROPORTIONS OF MATERIALS IN PREMIXED OR PREBLENDED MORTAR, GROUT, AND GROUT OTHER THAN SELF-CONSOLIDATING GROUT AS DELIVERED TO THE PROJECT SITE				
3.	VERIFICATION OF SLUMP FLOW AND VSI AS DELIVERED TO THE SITE FOR SELF-CONSOLIDATING GROUT	-	X	-	Art. 1.5 B.1.b.3

REQUIRED SPECIAL INSPECTION OF OPEN-WEB STEEL JOISTS			
VERIFICATION AND INSPECTION		CONTINUOUS	PERIODIC
1.a.	END CONNECTIONS - WELDED OR BOLTED	-	X
1.b.	BRIDGING - HORIZONTAL OR DIAGONAL	-	X
1.b.1	STANDARD BRIDGING	-	X
1.b.2	BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATIONS LISTED IN SECTION 2207.1	-	X

FOR PROPOSAL PURPOSES ONLY, NOT FOR CONSTRUCTION



STATEMENT OF SPECIAL INSPECTIONS CONTINUED:

REQUIRED SPECIAL INSPECTION OF STEEL CONSTRUCTION (ANSI/AISC 360-10)		
QUALITY CONTROL (QC) INSPECTION TASKS SHALL BE PERFORMED BY THE FABRICATOR'S OR ERECTOR'S QUALITY CONTROL INSPECTOR (QCI). QUALITY ASSURANCE (QA) INSPECTION OF FABRICATED ITEMS SHALL BE MADE AT THE FABRICATOR'S PLANT. QA INSPECTION OF ERECTED STEEL SYSTEMS SHALL BE MADE AT THE PROJECT SITE. THE QUALITY ASSURANCE INSPECTOR (QAI) SHALL REVIEW THE MATERIAL TEST REPORTS AND CERTIFICATIONS FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. O = OBSERVE THESE ITEMS ON A RANDOM BASIS. P = PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER.		
INSPECTION TASKS PRIOR TO WELDING	QC	QA
1. WELDING PROCEDURE SPECIFICATIONS AVAILABLE	P	P
2. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	P	P
3. MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O
4. WELDER IDENTIFICATION SYSTEM	O	O
5. FIT-UP OF GROOVE WELDS	O	O
JOINT PREPARATION		
DIMENSIONS		
CLEANLINESS		
TACKING		
BACKING TYPE		
6. CONFIGURATION AND FINISH OF ACCESS HOLES	O	O
7. FIT-UP OF FILLET WELDS	O	O
DIMENSIONS		
CLEANLINESS		
TACKING		
8. CHECK WELDING EQUIPMENT	O	-
INSPECTION TASKS DURING WELDING	QC	QA
1. USE OF QUALIFIED WELDERS	O	O
2. CONTROL AND HANDLING OF WELDING	O	O
PACKAGING		
EXPOSURE CONTROL		
3. NO WELDING OVER CRACKED TACK WELDS	O	O
4. ENVIRONMENTAL CONDITIONS	O	O
WIND SPEED WITHIN LIMITS		
PRECIPITATION AND TEMPERATURE		
5. WPS FOLLOWED		
SETTINGS ON WELDING EQUIPMENT	O	O
TRAVEL SPEED		
SELECTED WELDING MATERIALS		
SHIELDING GAS TYPE/FLOW RATE		
PREHEAT APPLIED		
INTERPASS TEMPERATURE MAINTAINED	O	O
PROPER POSITION		
6. WELDING TECHNIQUES		
INTERPASS AND FINAL CLEANING		
EACH PASS WITHIN PROFILE LIMITATIONS	O	O
EACH PASS MEETS QUALITY REQUIREMENTS		
INSPECTION TASKS AFTER WELDING	QC	QA
1. WELDS CLEANED	O	O
2. SIZE, LENGTH AND LOCATION OF WELDS	P	P
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA	P	P
CRACK PROHIBITION		
WELD/BASE METAL FUSION		
CRATER CROSS SECTION		
WELD PROFILES		
WELD SIZE		
UNDERCUT		
POROSITY		
4. ARC STRIKES	P	P
5. k-AREA	P	P
6. BACKING AND WELD TABS REMOVED	P	P
7. REPAIR ACTIVITIES	P	P

8. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P
INSPECTION TASKS PRIOR TO BOLTING	QC	QA
1. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O
3. PROPER FASTENERS SELECTED FOR THE JOINT DETAIL IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE	O	O
4. PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O
6. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	O
7. PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	O	O
INSPECTION TASKS DURING BOLTING	QC	QA
1. FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	O	O
2. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	O	O
3. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
4. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O
INSPECTION TASKS AFTER BOLTING	QC	QA
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P

FOR PROPOSAL
PURPOSES ONLY,
NOT FOR
CONSTRUCTION



DESIGNED
J. KELLOGG

DRAWN
J. MARTIN

CHECKED
S. KADER

APPROVED
M. FISHER

CITY OF ROSEVILLE
CALIFORNIA

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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

GENERAL
STRUCTURAL LEGEND
SPECIAL INSPECTION TABLES

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-G-011

SHEET NUMBER
11

1 PIPING SYMBOLS			2 PUMPS			3 ACTUATORS			4 MISC FITTING SYMBOLS			5 PIPING DESIGNATIONS			6 GENERAL																																																																																																																																																																																																																				
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MIXER</td></tr><tr><td></td><td>WAFER STATIC MIXER</td></tr></table>			SYMBOL	MIXER TYPE		MIXER		STATIC MIXER		WAFER STATIC MIXER	DOUBLE LINE PIPES SINGLE LINE PIPES VALVE DESIGNATIONS NOTES: - MOTORIZED VALVE SHOWN, MANUAL VALVE SIMILAR. NOTES: - ONLY FLANGED END CONNECTIONS ARE SHOWN HERE FOR DOUBLE LINE FITTINGS. FITTINGS WITH OTHER END PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS. ALSO SEE PIPING SPECIFICATIONS AND THE PIPING SCHEDULE. - SYMBOLS SHOWN HERE FOR SINGLE LINE FITTINGS ARE GENERIC ONLY. REFER TO PIPING SPECIFICATIONS FOR SPECIFIC END CONNECTIONS FOR SINGLE LINE PIPE AND FITTINGS. GENERAL PIPING NOTES: - LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS. MINIMUM COVER SHALL BE 36 INCHES UNLESS OTHERWISE SHOWN. - SIZE OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE. - LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN IS ONLY APPROXIMATE. FINAL SUPPORT REQUIREMENTS SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. MAXIMUM SPACING SHALL BE AS SPECIFIED. - APPROPRIATE STANDARD WALL PIPE DETAIL SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO BACKFILL, AS NOTED ON DRAWINGS OR APPROVED BY ENGINEER. - ALL FLEXIBLE CONNECTORS OR FLANGED COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST TIES, BLOCKS, OR ANCHORS, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED. - SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE DRAWINGS, WHEREVER APPLICABLE. ALL OF THE VARIOUS APPLICATIONS ARE NOT NECESSARILY USED IN THE PROJECT. - ALL PIPING SPECIFIED TO BE PRESSURE TESTED, EXCEPT FLANGED, WELDED, GROOVED END, OR SCREWED PIPING, SHALL BE PROVIDED WITH TRUST PROTECTION AT ALL DIRECTION CHANGES, UNLESS OTHERWISE NOTED. SEE THRUST DETAILS AND NOTES ON DRAWINGS. - NUMBER AND LOCATION OF UNIONS SHOWN ON DRAWINGS ARE ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT. - THE CONTRACTOR FOR THIS PROJECT IS RESPONSIBLE FOR COORDINATING AND PERFORMING THE CONNECTION OF THE PIPING AND ASSOCIATED APPURTENANCES INSTALLED UNDER THIS CONTRACT TO BOTH THE EXISTING PIPING AND FACILITIES. - PRIOR TO SUBMITTING PIPING DRAWINGS FOR ANY NEW PIPE THAT IS TO CONNECT TO OR CROSS AN EXISTING PIPE OR STRUCTURE, THE CONTRACTOR SHALL EXPOSE THE EXISTING PIPE OR STRUCTURE TO VERIFY ITS EXACT LOCATION, SIZE, MATERIALS, AND INVERT ELEVATIONS. - COMPONENTS SHOWN WITH A DOUBLE ASTERISK (**) ARE PART OF A PACKAGE SYSTEM. SEE EQUIPMENT SPECIFICATIONS.			FOR PROPOSAL PURPOSES ONLY, NOT FOR CONSTRUCTION DESIGNED PROFESSIONAL ENGINEER JOSEPH A. RISS No. C66413 CIVIL STATE OF CALIFORNIA			DESIGNED J. RESS DRAWN C. WORRALL CHECKED S. KADER APPROVED M. FISHER CITY OF ROSEVILLE CALIFORNIA WATERWORKS ENGINEERS 2280 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-785-2888 CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA GENERAL MECHANICAL LEGEND DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-G-012 SHEET NUMBER 12		
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PIPE SCHEDULE:

FLOW STREAM I.D.	DESCRIPTION	SERVICE	EXPOSURE	SIZE RANGE	MATERIAL	JOINT TYPE	TEST PRESSURE	LINING	COATING SYSTEM	NOTES
CD	Condensate Drain	Water	All	All	PVC3	SLV	None	None	None	
DFR	Diesel Fuel Return	Fuel	All	All	BSP	THD	150 psi	None	No. 300	
DFS	Diesel Fuel Supply	Fuel	All	All	BSP	THD	150 psi	None	No. 300	
DR	Drain	Water	Buried	All	PVC3	SLV	Gravity	None	None	
			Exposed	<2"	PVC1	SLV	Gravity	None	None	
				2-3"	PVC3					
				>3"	DIP	FLG		CM	No. 300	
LDP	Leak Detection, Perforate	Water	All	All	HDPE2	PO	Gravity	None	None	
LDS	Leak Detection, Solid Wall	Water	All	All	HDPE1	PO	Gravity	None	None	
OF	Overflow	Water	All	All	WSSTP	WLD/FLG	None	None	None	Type 304
PD	Pumped Drain	Water	All	2"	PVC1	SLV	25 psi	None	None	
				>2"	WSP	WLD			No. 300	
PW	Potable Water	Water	Buried	<4"	COP	SLD	150 psi	None	PE Wrap	
				>=4"	DIP	PRJ/RMJ		CM	Asphaltic	Note 1
			Exposed	<4"	COP	SLD		None	None	
				>=4"	WST	PRJ		Fusion Epoxy	Fusion Epoxy	
			Submerged	All	WSST	WLD/FLG		None	None	
RW	Recycled Water	Water	All	All	PVC1	SLV	50 psi	None	Purple Pipe	
SA	Sample	Water	All	All	COP	SLD	150 psi	None	None	
SD	Storm Drain	Water	All	All	HDPE1	PO	Gravity	None	None	
SHC	Sodium Hypochlorite 12.5	Chemical	All	1/2"x2"	CHE	COMP	150 psi	None	None	Note 2
				1/2", 1", 2"	CPVC	SLV	150 psi	None	None	
SS	Sanitary Sewer	Sewage	All	All	VCP	PO	Gravity	None	None	Note 3
SS	Sanitary Sewer	Sewage	All	All	DIP	PRJ	Gravity	None	None	Note 3
UD	Underdrain	Water	All	All	HDPE3	PO	Gravity	None	None	
V	Vent	Air/Water	All	All	PVC3	SLV	None	None	None	
VTR	Vent Through Roof	Air	All	All	CPVC	SLV	None	None	None	
WDP	Wall Drain, Perforated	Water	All	All	HDPE2	PO	Gravity	None	None	
WDS	Wall Drain, Solid Wall	Water	All	All	HDPE1	PO	Gravity	None	None	

1. Buried PW piping 4-inches and larger shown as ductile iron with proprietary joints and mechanical joint fittings. At Contractor's option, buried PW piping 4-inches and larger may be cement lined and coated welded steel pipe (WSP) in lieu of ductile iron pipe. If WSP is selected, wall thimbles shown at structures as MxFLG shall be changed to FLGxFLG.
2. Provide rigid CPVC piping for sodium hypochlorite tank fill and discharge piping up to transition to tubing, as shown on the Drawings.
3. SS to be VCP or DIP at contractor's option, unless explicitly called out as DIP.

GENERAL NOTES:

1. This schedule is provided for the convenience of the CONTRACTOR. Some flow streams may be shown on the drawings, but not listed here.
2. Pipe Materials:

BSP – Black Steel Pipe

CHE – Chemical Tubing and Pipe System

COP – Copper Pipe

CPVC – Solvent Welded CPVC Pipe

DIP – Ductile Iron Pipe

HDPE1 – High Density Polyethylene Dual Wall Solid Drainage Pipe

HDPE2 – High Density Polyethylene Dual Wall Perforated Drainage Pipe

PVC1 – Solvent Welded Polyvinyl Chloride Pipe

PVC2 – PVC Pressure Pipe

PVC3 – Polyvinyl Chloride Drain, Waste and Vent Pipe

PVC4 – PVC Sewer Pipe

SSTP – Stainless Steel Pipe

SSTT – Stainless Steel Tubing

WSP – Welded Steel Pipe

WSSTP – Welded Stainless Steel Pipe

VCP - Vetrified Clay Pipe

4. Lining Systems:

CM – Cement Mortar

5. Coating Systems as specified in Section 09900.

5. Pipe colors shall be per City of Roseville Process Control Standards.
3. Joint Types

FLG – Flanged

GRV – Grooved End

MJ – Mechanical Joint

PO – Push On

PRJ – Proprietary Restrained Mechanical Joint

RMJ – Restrained Mechanical Joint

S – Swagelok stainless steel compression type

SLV – Solvent Welded Socket

SLD – Soldered Socket

THR – Threaded

WLD – Butt Welded
- FOR PROPOSAL
PURPOSES ONLY,
NOT FOR
CONSTRUCTION
-
- DESIGNED
J. RIESS

DRAWN
B. TROTTER

CHECKED
S. KADER

APPROVED
M. FISHER

CITY OF ROSEVILLE
CALIFORNIA

WATERWORKS
ENGINEERS
2200 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-785-2888

CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)

ROSEVILLE, CALIFORNIA

GENERAL

PIPE SCHEDULE

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-G-013

SHEET NUMBER
13
- FILENAME: WD5400G013.dgn PLOT DATE: 11/7/2019 1:57:37 PM

HEATING, VENTILATING AND
AIR CONDITIONING SYMBOLS

	WALL REGISTER OR GRILLE (SUPPLY) WSG, WSR, HTR
	CEILING DIFFUSER OR REGISTER (SUPPLY) CD, RCD, SD
	CEILING REGISTER OR GRILLE (RETURN AND EXHAUST) CG, CR, PCR
	WALL REGISTER OR GRILLE (RETURN AND EXHAUST) EG
	FLOOR GRILLE (SUPPLY AND RETURN) FG
	TURNING VANES
	90° TAKEOFF
	SOUND ATTENUATED DUCT
	FIRE DAMPER FD
	SPLITTER DAMPER
	MANUAL OPPOSED-BLADE DAMPER
	MANUAL BUTTERFLY DAMPER
	MOTORIZED DAMPER
	SMOKE DAMPER SD
	FLEXIBLE CONNECTION
	FLEXIBLE DUCTWORK
	INCLINED RISE IN DUCT R
	INCLINED DROP IN DUCT D
	SUPPLY DUCT (SECTION)
	INTAKE, RETURN, OR EXHAUST DUCT (SECTION)
	THERMOSTAT
	IONIZATION SMOKE DETECTOR
	STATIC PRESSURE SENSOR
	ENVIRONMENT CONTROL PANEL ECP
	VIBRATION ELIMINATOR
	200 SCFM (200)
	MOTORIZED VALVE
	WALL LOUVER (SUPPLY OR EXHAUST)
	MOTORIZED WALL LOUVER (SUPPLY OR EXHAUST)

BUILDING SERVICES SYMBOLS

	HOSE RACK (TYPE AS INDICATED)
	EYEWASH
	SAFETY SHOWER
	EYEWASH WITH SAFETY SHOWER
	X = F - FLOOR CLEANOUT D - DECK CLEANOUT W - WALL CLEANOUT
	HUB DRAIN Y-T WITH TRAP Y-P WITH PRIMED TRAP
	FLOOR DRAIN X - NO. IN SPECS Y - T WITH TRAP Y - P WITH PRIMED TRAP
	OVERFLOW DRAIN
	ROOF DRAIN
	AREA DRAIN X = NO. IN SPECS Y = T WITH TRAP Y = P WITH PRIMED TRAP
	OVERFLOW NOZZLE

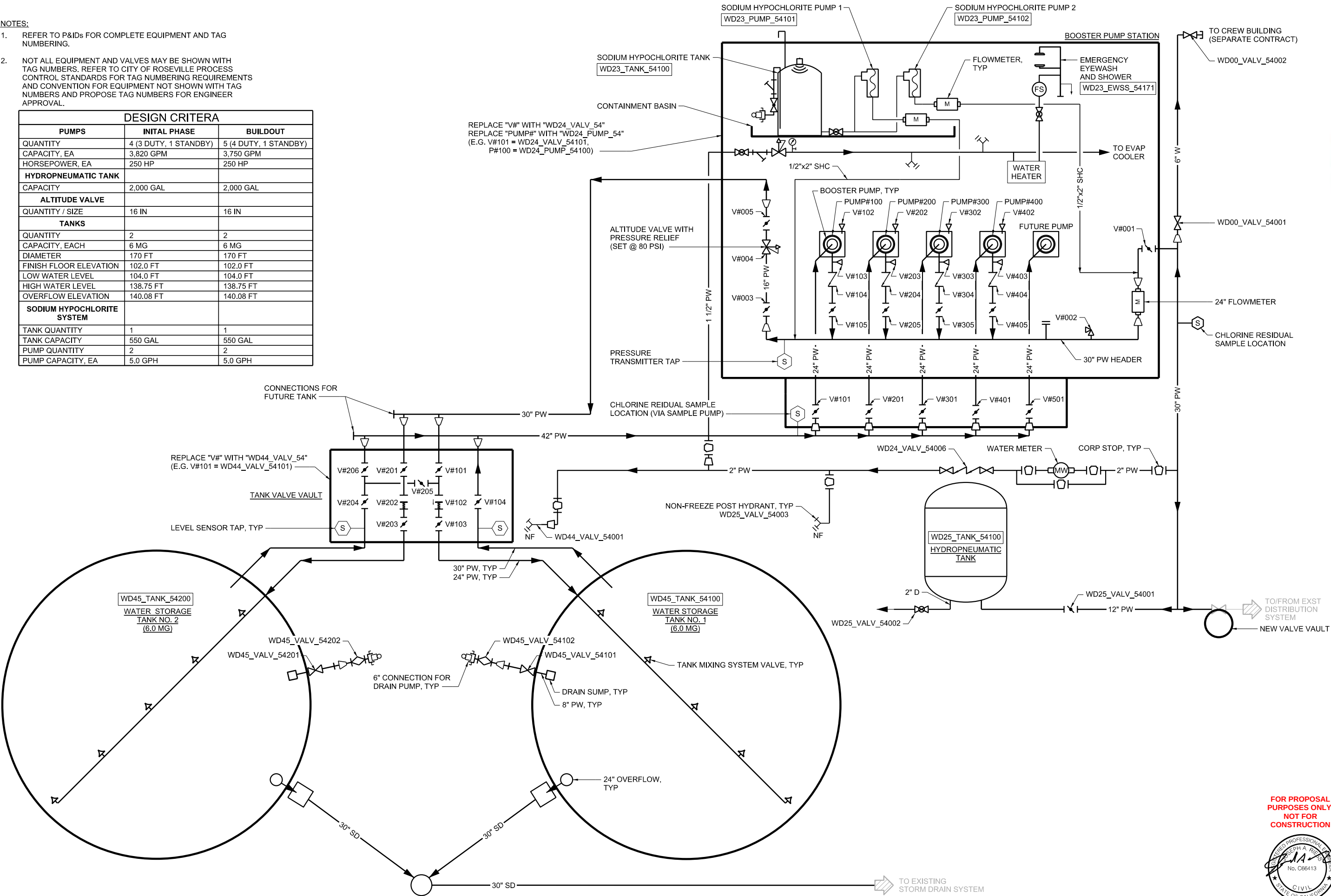
FOR PROPOSAL
PURPOSES ONLY,
NOT FOR
CONSTRUCTION



DESIGNED J. RIESS	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
WATERWORKS ENGINEERS 2280 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-785-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL BUILDING SERVICES LEGEND			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-G-014			
SHEET NUMBER 14			

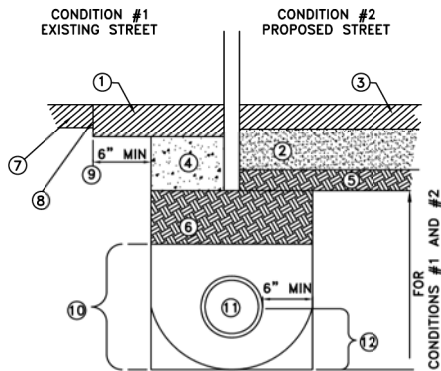
- NOTES:
1. REFER TO P&IDs FOR COMPLETE EQUIPMENT AND TAG NUMBERING.
2. NOT ALL EQUIPMENT AND VALVES MAY BE SHOWN WITH TAG NUMBERS. REFER TO CITY OF ROSEVILLE PROCESS CONTROL STANDARDS FOR TAG NUMBERING REQUIREMENTS AND CONVENTION FOR EQUIPMENT NOT SHOWN WITH TAG NUMBERS AND PROPOSE TAG NUMBERS FOR ENGINEER APPROVAL.

DESIGN CRITERIA		
PUMPS	INITAL PHASE	BUILDOUT
QUANTITY	4 (3 DUTY, 1 STANDBY)	5 (4 DUTY, 1 STANDBY)
CAPACITY, EA	3,820 GPM	3,750 GPM
HORSEPOWER, EA	250 HP	250 HP
HYDROPNEUMATIC TANK		
CAPACITY	2,000 GAL	2,000 GAL
ALTITUDE VALVE		
QUANTITY / SIZE	16 IN	16 IN
TANKS		
QUANTITY	2	2
CAPACITY, EACH	6 MG	6 MG
DIAMETER	170 FT	170 FT
FINISH FLOOR ELEVATION	102.0 FT	102.0 FT
LOW WATER LEVEL	104.0 FT	104.0 FT
HIGH WATER LEVEL	138.75 FT	138.75 FT
OVERFLOW ELEVATION	140.08 FT	140.08 FT
SODIUM HYPOCHLORITE SYSTEM		
TANK QUANTITY	1	1
TANK CAPACITY	550 GAL	550 GAL
PUMP QUANTITY	2	2
PUMP CAPACITY, EA	5.0 GPH	5.0 GPH



FOR PROPOSAL
PURPOSES ONLY,
NOT FOR
CONSTRUCTION





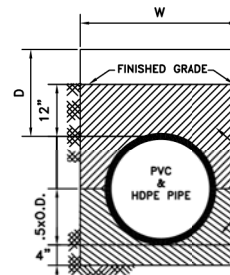
NOTES:

- ASPHALT CONCRETE PATCH, 6 INCHES THICK OR THAT OF EXISTING, WHICHEVER IS MORE.
- AGGREGATE BASE OR AGGREGATE BASE AND SUBBASE SECTION PER APPROVED PLAN. 95% RELATIVE COMPACTION.
- ASPHALT CONCRETE PAVEMENT SECTION PER APPROVED PLANS.
- 24 INCHES OF TWO SACK CONCRETE SLURRY PER CALTRANS STANDARD SPEC 19-3.062
- SIX INCHES OF SUBGRADE, PROCESSED TO 95% RELATIVE COMPACTION.
- NATIVE BACKFILL MATERIAL, 90% RELATIVE COMPACTION.
- EXISTING STREET PAVEMENT.
- TACK COAT ON ALL VERTICAL PAVEMENT SAWCUTS.
- TYPICAL EACH SIDE OF TRENCH IN EXISTING STREET.
- FOR PIPE EMBEDMENT SEE TB-2 FOR PLASTIC STORM DRAIN, W-1 FOR WATER PIPE, SS-1 FOR SANITARY SEWER PIPE, OF THESE CONSTRUCTION STANDARDS.
- PIPE
- FOR REINFORCED CONCRETE PIPE EMBEDMENT: PLACE 1/2 INCH CRUSHED ROCK UP TO SPRING LINE WITH MINIMUM OF FOUR (4) INCHES OF 1/2 INCH CRUSHED ROCK BEDDING. MAINTAIN MINIMUM OF SIX (6) INCHES OF CLEARANCE BETWEEN THE PIPE AND THE TRENCH WALL.
- ALTERNATE TRENCH BOTTOM. THE DIAMETER OF THE ALTERNATE ROUNDED TRENCH BOTTOM SHALL EQUAL THE WIDTH OF THE TRENCH.

NOTE: IN CONDITION #1, TRENCH CUT FEE MAY APPLY PER CITY ORDINANCE.

RHON HERNDON
RHON HERNDON
PUBLIC WORKS DIRECTOR

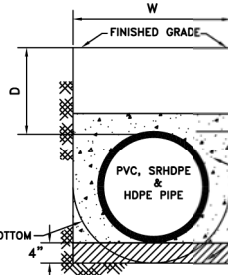
CITY OF ROSEVILLE CALIFORNIA		DEPARTMENT OF PUBLIC WORKS
UTILITY TRENCH PAVING BACKFILL AND EMBEDMENT		
SCALE: NONE REVISED: JANUARY 1, 2010 DRAWN BY: J MCKINNEY APPROVED BY: RHON HERNDON	TB-1	



DETAIL A
SRHDPE, PVC & HDPE
PIPE ONLY (NONRIGID)

NOTES:

- TRENCH WIDTH:
PIPE SIZE 30" AND UNDER
OVER 30"
TRENCH WIDTH = W
O.D. + 16"
O.D. x 1.25 + 12"
- HIGH DENSITY POLYETHYLENE (HDPE) STORM DRAIN PIPE SHALL BE TYPE "S" AS DESCRIBED IN SECTION 64 OF THE CALTRANS STANDARD SPECIFICATIONS. PIPE INSTALLATION AND PIPE CONFIGURATION SHALL BE AS SHOWN ON THIS DRAWING AND AS DESCRIBED IN THESE GENERAL NOTES. JOINTS SHALL BE SEALED WITH A RUBBER GASKET. GASKETS SHALL MEET THE REQUIREMENT OF ASTM F-477.
- FILL HEIGHTS "D" FOR NONRIGID (PVS & HDPE) DRAIN PIPE SHALL BE A MINIMUM OF 36 INCH AND A MAXIMUM OF 15 FEET, AND (SRHDPE) SHALL HAVE A MINIMUM OF ONE FOOT (IN ADDITION TO THE ROADWAY STRUCTURAL SECTION) AND A MAXIMUM OF 30 FEET FROM THE TOP OF PIPE FINISH GRADE. (SEE DETAILS A & B FOR TRENCH BACKFILL REQUIREMENTS. CONTRACTOR MAY USE EITHER DETAIL A OR B.)
- PIPE MATERIAL CHANGES BETWEEN STRUCTURES ARE PROHIBITED. OUTFALL/INLET RUNS AND STUBS INTO FUTURE SITES SHALL BE RCP. (SEE SECTION 101-6 D.I.C. AND 101-8 D.4. FOR CONCRETE PIPE APPLICATION.)
- REFER TO TB-1 FOR TREATMENT OF THE TOP PORTION OF THE TRENCH WITHIN THE CITY STREET.
- THE DIAMETER OF THE ALTERNATE, ROUNDED TRENCH BOTTOM SHALL BE EQUAL TO THE WIDTH OF THE TRENCH.



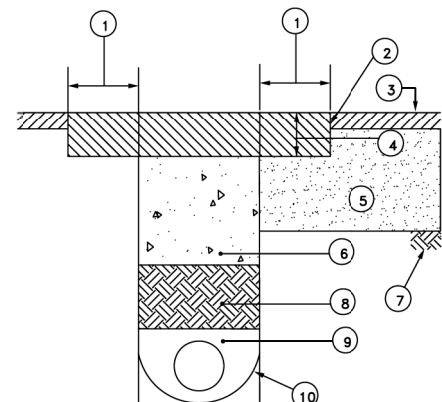
DETAIL B
SRHDPE, PVC & HDPE
PIPE ONLY (NONRIGID)

SLURRY BACKFILL PER CAL
TRANS SEC. 19-3.062

IMPORTED MATERIAL: LESS
THAN 10% PASSING No. 8
SIEVE; 100% PASSING 1/2"
SIEVE FOR ALL PIPE (3/8"
CRUSHED ROCK)
OR
85 TO 90% PASSING 1/2"
SIEVE AND 100% PASSING
3/4" SIEVE. (1/2" CRUSHED
ROCK)

RHON HERNDON
RHON HERNDON
PUBLIC WORKS DIRECTOR

CITY OF ROSEVILLE CALIFORNIA		DEPARTMENT OF PUBLIC WORKS
HDPE, SRHDPE PVC STORM DRAIN PIPE ONLY (NONRIGID) BEDDING AND BACKFILL		
SCALE: NONE REVISED: JANUARY 1, 2010 DRAWN BY: J MCKINNEY APPROVED BY: RHON HERNDON	TB-2	



NOTES:

- 18 INCH KEY OUTSIDE TRENCH LINE
- COAT ALL EXISTING VERTICAL FACES WITH ASPHALTIC EMULSION (TACK) PRIOR TO PAVING
- EXISTING AC PAVING
- PATCH SHALL BE THICKNESS OF EXISTING SECTION PLUS 2 1/2 INCHES. PER CITY TRENCH CUT ORDINANCE (6 INCH MINIMUM THICKNESS).
- AGGREGATE BASE/SUBBASE: RECOMPACT DISTURBED SURFACE AREAS TO 95%.
- TWO FEET OF TWO SACK CONCRETE SLURRY PER CALTRANS STANDARD SPECIFICATION 19-3.062
- NATIVE SOIL
- NATIVE SOIL TO BE PROCESSED TO 90% RELATIVE COMPACTION.
- FOR PIPE EMBEDMENT, SEE THE FOLLOWING CONDITIONS:
a. TB-2 FOR PLASTIC STORM DRAIN PIPE
b. W-1 FOR WATER PIPE
c. SS-1 FOR WASTE WATER PIPE
d. FOR REINFORCED CONCRETE PIPE, PLACE 1/2 CRUSHED ROCK UP TO SPRING LINE WITH A MINIMUM OF FOUR INCHES OF BEDDING BELOW PIPE. MAINTAIN A MINIMUM OF SIX INCHES OF CLEARANCE BETWEEN THE PIPE AND THE TRENCH WALL.
- ALTERNATE TRENCH BOTTOM. THE DIAMETER OF THE ALTERNATE, ROUNDED TRENCH BOTTOM SHALL EQUAL THE WIDTH OF THE TRENCH.

NOTE: THIS DETAIL APPLIES TO UTILITY TRENCHES IN WHICH TRENCH CUT FEES WERE NOT PAID BY THE APPLICANT, OR AS SPECIFIED BY THE ENGINEER.

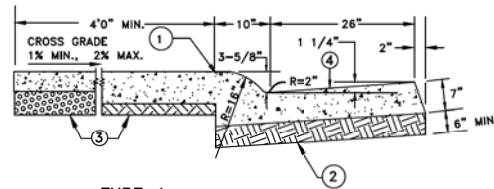
RHON HERNDON
RHON HERNDON
PUBLIC WORKS DIRECTOR

CITY OF ROSEVILLE CALIFORNIA		DEPARTMENT OF PUBLIC WORKS
DEEP CUT "T" PATCH RECONSTRUCTION		
SCALE: NONE REVISED: JANUARY 1, 2010 DRAWN BY: J MCKINNEY APPROVED BY: RHON HERNDON	TB-3	

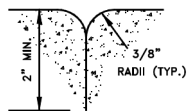
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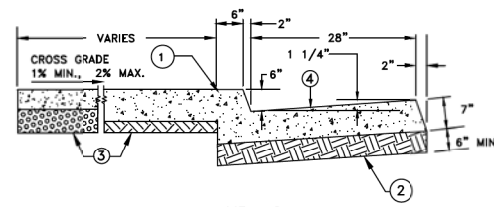
DESIGNED M. FISHER	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
CITY OF ROSEVILLE CALIFORNIA			
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 Roseville, CA 95661 • 916-793-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL STANDARD DETAILS 1			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-G-020			
SHEET NUMBER 16			



TYPE 1
ROLLED CURB & GUTTER



TOOL JOINT
(TYP.)
SEE SECTION 71-4.C.3.
(CONSTRUCTION STANDARDS)



TYPE 2
VERTICAL CURB & GUTTER
(OPTION 1)

LEGEND:

1. SCORE MARK, 1/8" DEEP
2. SUBGRADE PROCESSED TO 95% RELATIVE COMPACTION.
3. ALL SIDEWALK HAS OPTION OF 4" CONCRETE ON 4" AGGREGATE BASE, IN LIEU OF 6" CONCRETE ON NATIVE.
4. GUTTER PAN CROSS SLOPE NOT TO EXCEED 5% MAX, OR BE LESS THAN 4%.

NOTES:

- A. ALL CONCRETE SHALL BE "MINOR CONCRETE" AS DEFINED IN SECTION 71-5B OF THESE STANDARDS.
- B. SEE SECTION 71-4 C OF THE CITY CONSTRUCTION STANDARDS FOR FINISH AND JOINTS.
- C. ALL ADJOINING SIDEWALK, CURB AND GUTTER SHALL BE POURED MONOLITHIC.

MARC STOUT
CITY ENGINEER

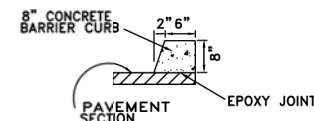


DEVELOPMENT SERVICES
DEPARTMENT

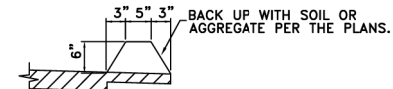
TYPE 1 AND 2 CURB AND
GUTTER WITH SIDEWALK

SCALE: NONE
REVISED: JANUARY 1, 2016
DRAWN BY: J HENDRIX
APPROVED BY: MARC STOUT

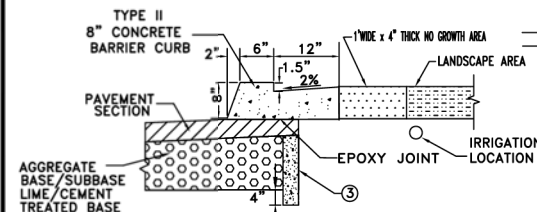
ST-17



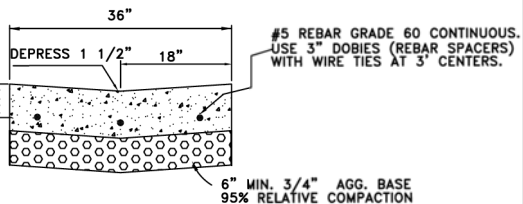
TYPE 1 BARRIER CURB
(ADJACENT TO UNIRRIGATED AREAS)



STATE "TYPE A" HIGH DIKE
(ASPHALT CONCRETE DIKE)



TYPE 2 BARRIER CURB
(ADJACENT TO IRRIGATED AREAS)



36 INCH VALLEY GUTTER
(ALLEYS ONLY)

RHON HERNDON
PUBLIC WORKS DIRECTOR



DEPARTMENT OF
PUBLIC WORKS

BARRIER CURBS
AND
VALLEY GUTTERS

SCALE: NONE
REVISED: JANUARY 1, 2013
DRAWN BY: J MCKINNEY
APPROVED BY: RHON HERNDON

ST-18

NOTES:

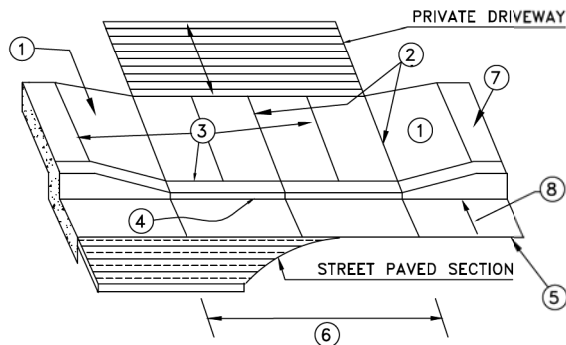
1. ALL CONCRETE SHALL BE "MINOR CONCRETE" AS DEFINED IN SECTION 71-5B OF THESE STANDARDS UNLESS OTHERWISE NOTED.
2. TOOL JOINTS" SEE DETAIL ST-17.
3. 4" THICK CONCRETE SLURRY CUTOFF WALL REQUIRED ADJACENT TO TURFED MEDIANS, AS ALLOWED PER THE CITY'S WATER EFFICIENT LANDSCAPE ORDINANCE.

LEGEND:

1. THE MAX. GRADE IS 5% IF LONGITUDINAL STREET GRADE ALLOWS. THE MAX. TRANSITION TO OBTAIN 5% IS 15 FEET. OTHERWISE, A MAX. GRADE OF 8.33% SHALL BE OBTAINED BETWEEN 15 AND 25 FEET. 25 FEET IS THE MAX. TRANSITION REQUIRED/ALLOWED, REGARDLESS OF LONGITUDINAL STREET GRADE.
2. "TOOL JOINT" SEE DETAIL ST-17.
3. SCORE MARKS EVERY 4 FEET FOR 4 FOOT SIDEWALK AND 5 FEET FOR 5 FOOT SIDEWALK ETC.
4. 1 INCH HIGH LIP AT 45 DEGREE BATTER.
5. "TYPE 2"(ST-17) CURB AND GUTTER.
6. DRIVEWAY WIDTH PER THE APPROVED PLAN. (MIN. 25', MAX 40' FOR COMMERCIAL 32' FOR RESIDENTIAL)
7. ADJACENT SIDEWALK.
8. GUTTER PAN CROSS SLOPE NOT TO EXCEED 5% MAX.

NOTES:

- A. SIDEWALK CROSS GRADE THROUGH THE ENTIRE DRIVEWAY SHALL BE 1% MINIMUM, 2% MAXIMUM.
- B. FOR COMMERCIAL DRIVEWAY: SIDEWALK, APRON AND GUTTER PAN SHALL BE 8" THICK WITH NO. 4, GRADE 60 REBAR ON 18" CENTERS EACH WAY. USE 3" DOBIES (REBAR SPACERS) AT 3" INTERVALS. FOR RESIDENTIAL: WALK, APRON AND GUTTER PAN SHALL BE 7" THICK NONREINFORCED. FOR COMMERCIAL AND RESIDENTIAL SIDEWALK, APRON AND GUTTER PAN SHALL BE PLACED MONOLITHICALLY. ALL CONCRETE SHALL BE "MINOR CONCRETE" AS DEFINED IN SECTION 71-5B OF THESE STANDARDS.
- C. BASE FOR CONCRETE SHALL BE NATIVE SOIL OR CLASS 2, 3/4 INCH AGGREGATE BASE, EITHER PROCESSED 6 INCHES THICK TO 95% RELATIVE COMPACTION.
- D. SEE SECTION 71-4 C.6. OF THE CONSTRUCTION STANDARDS FOR AC PATCH ADJACENT TO GUTTER LIP.
- E. FROM 8 TO 20 FEET BACK OF SIDEWALK, RAISE PRIVATE PAVING/LANDSCAPING TO A MINIMUM HEIGHT OF THE HIGHEST TOP OF CURB ELEVATION AT THE DRIVEWAY.



MARC STOUT
CITY ENGINEER



DEVELOPMENT SERVICES
DEPARTMENT

"TYPE S"
DRIVEWAY APRON

SCALE: NONE
REVISED: JANUARY 1, 2016
DRAWN BY: J HENDRIX
APPROVED BY: MARC STOUT

ST-20

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CONSTRUCTION



DESIGNED
M. FISHER
DRAWN
J. MARTIN
CHECKED
S. KADER
APPROVED
M. FISHER

CITY OF
ROSEVILLE
CALIFORNIA

WATERWORKS
ENGINEERS
2200 Douglas Blvd., Suite 105
Roseville, CA 95661 • 916-785-2888



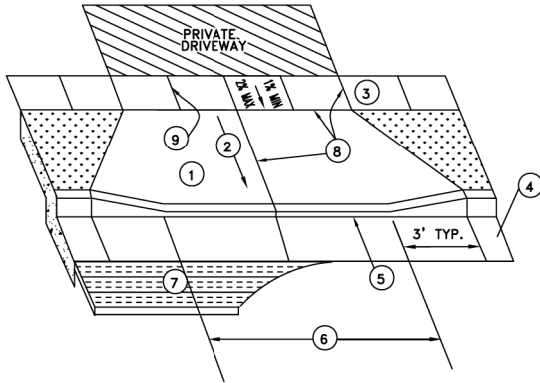
CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

GENERAL
STANDARD DETAILS 2

DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WG00-G-021
SHEET NUMBER 17

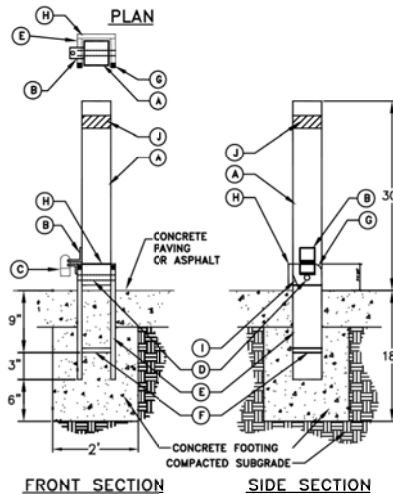
NOTES:

1. FOR COMMERCIAL DRIVEWAY: SIDEWALK, APRON AND GUTTER PAN SHALL BE 8 INCHES THICK WITH NO. 4, GRADE 60 REBAR ON 18 INCH CENTERS EACH WAY. USE 3 INCH DOBIES (REBAR SPACERS) AT 3 FOOT INTERVALS. FOR RESIDENTIAL: WALK, APRON AND GUTTER PAN SHALL BE 7 INCHES THICK, NONREINFORCED. FOR COMMERCIAL AND RESIDENTIAL, SIDEWALK, APRON AND GUTTER PAN SHALL BE PLACED MONOLITHICALLY. ALL CONCRETE SHALL BE "MINOR CONCRETE" AS DEFINED IN SECTION 71-5B OF THESE STANDARDS.
2. STRAIGHT GRADE FROM SIDEWALK TO LIP AT FLOWLINE.
3. ADJACENT SIDEWALK: IF EXISTING SIDEWALK EXCEEDS 2% CROSS GRADE, REPLACE 5 FEET ADDITIONAL EXISTING AND TRANSITION TO ACCOMMODATE 2% MAXIMUM CROSS GRADE IN SIDEWALK WITHIN DRIVEWAY.
4. "TYPE 2"(ST-17) CURB AND GUTTER: IF EXISTING IS NOT "TYPE 2" SECTION, MATCH THE EXISTING GUTTER PAN UNLESS OTHERWISE REQUIRED PER THE APPROVED PLAN.
5. 1 INCH HIGH LIP AT 45 DEGREE BATTER.
6. DRIVEWAY WIDTH PER THE APPROVED PLAN. MINIMUM 25' MAXIMUM OF 40' FOR COMMERCIAL, 32' FOR RESIDENTIAL.
7. SEE SECTION 71-4 C.6. OF THE CONSTRUCTION STANDARDS FOR AC PATCH ADJACENT TO GUTTER LIP.
8. "TOOL JOINT" SEE DETAIL ST-17.
9. SCORE MARKS EVERY FOUR FEET FOR FOUR FOOT SIDEWALK AND FIVE FEET FOR FIVE FOOT SIDEWALK, ETC.
10. SUBGRADE BASE FOR CONCRETE WITHIN CITY RIGHT-OF-WAY SHALL BE 6 INCHES OF NATIVE SOIL, OR CLASS II, 3/4 INCH AGGREGATE BASE, BOTH AT 95% RELATIVE COMPACTION.



RH Herndon
RHON HERNDON
PUBLIC WORKS DIRECTOR

	DEPARTMENT OF PUBLIC WORKS
"TYPE D" DRIVEWAY APRON	
SCALE: NONE REVISED: JANUARY 1, 2013 DRAWN BY: J MCKINNEY APPROVED BY: RHON HERNDON	ST-21



LEGEND

- A. 3 1/2" O.D. 1/4" WALL STEEL TUBE WITH CAP WELDED ON TOP, 3/4" HOLES FOR SWIVEL ROD. EASE ALL EDGES OF STEEL TUBE.
- B. 1 1/2" X 1 1/2" ANGLE IRON (2) WELDED TO TUBE AND BASE. PLACE 1/2" HOLE DRILLED 1/4" FROM END OF ANGLE IRON. ANGLE IRON ON BASE SIZE AS NECESSARY TO EQUAL LENGTH OF ANGLE IRON ON TUBE.
- C. PADLOCK, TO BE PROVIDED BY CITY.
- D. 5/8" DIA. STEEL SWIVEL ROD, WELD SWIVEL ROD TO SIDE PLATES.
- E. 3/8" X 16" X 4" STEEL BASE PLATE WITH 1 1/2" RADIUS CORNERS. EASE ALL EDGES.
- F. 3/8" STEEL BRACE. FILET WELD BOTH SIDES TO BASE PLATES.
- G. 1 1/2" RADIUS CORNERS, TYP.
- H. 4" X 4" X 3/8" STEEL BACK PLATE WELDED TO BASE PLATE.
- I. FISH MOUTH GRIND AT BOTTOM BACK CORNER OF TUBE.
- J. PLACE 2" WHITE REFLECTIVE TAPE.

NOTES

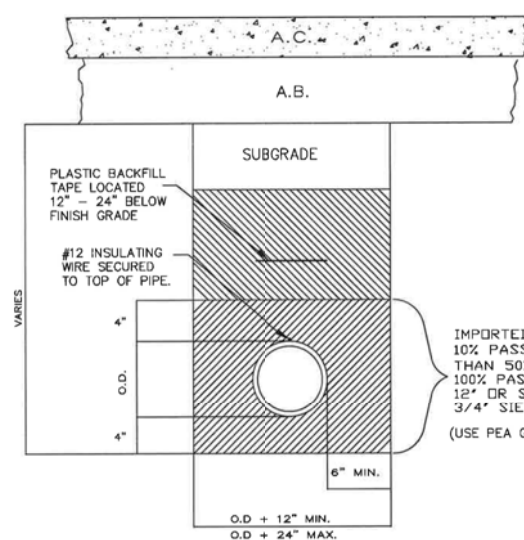
1. ALL TUBING SHALL BE BLACK STEEL PIPE.
2. ALL JOINTS SHALL BE WELDED IN ACCORDANCE WITH CA STATE STANDARD SPECIFICATIONS FOR WELDING STRUCTURAL STEEL AND GROUND SMOOTH.
3. ALL PARTS (EXCEPT PADLOCK) SHALL BE PAINTED WITH TWO COATS ZINC CHROMATE PRIMER AND TWO COATS EXTERIOR ENAMEL. COLOR: YELLOW.
4. BOLLARD SHALL BE INSTALLED SUCH THAT IT LAYS FLAT WHEN FOLDED.
5. CONCRETE SHALL BE "MINOR CONCRETE" AS DEFINED IN SECTION 71-5B OF THESE STANDARDS.

RH Herndon
RHON HERNDON
PUBLIC WORKS DIRECTOR

	DEPARTMENT OF PUBLIC WORKS
BOLLARD	
SCALE: NONE REVISED: JANUARY 1, 2013 DRAWN BY: J MCKINNEY APPROVED BY: RHON HERNDON	ST-38

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NOT FOR
CONSTRUCTION





- TRENCH BACKFILL REQUIREMENTS:
1. PROPOSED STREETS - REFER TO DETAIL TB-1 OF SECTION 31 FOR BACKFILL REQUIREMENTS ABOVE THE PIPE ZONE.
 2. EXISTING STREETS - REFER TO DETAILS TB-1 AND TB-3 OF SECTION 31 FOR BACKFILL REQUIREMENTS ABOVE THE PIPE ZONE.

NOTES:

BACKFILL SHALL BE MECHANICALLY CONSOLIDATED OR SHOVEL SLICED UNDER THE HAUNCHES OF THE PIPE.

IN ROCKY OR UNYIELDING SOIL, THE TRENCH SHALL BE EXCAVATED A MINIMUM OF 12" BELOW THE PIPE AND THE TRENCH WIDTH SHALL BE INCREASED BY 12".

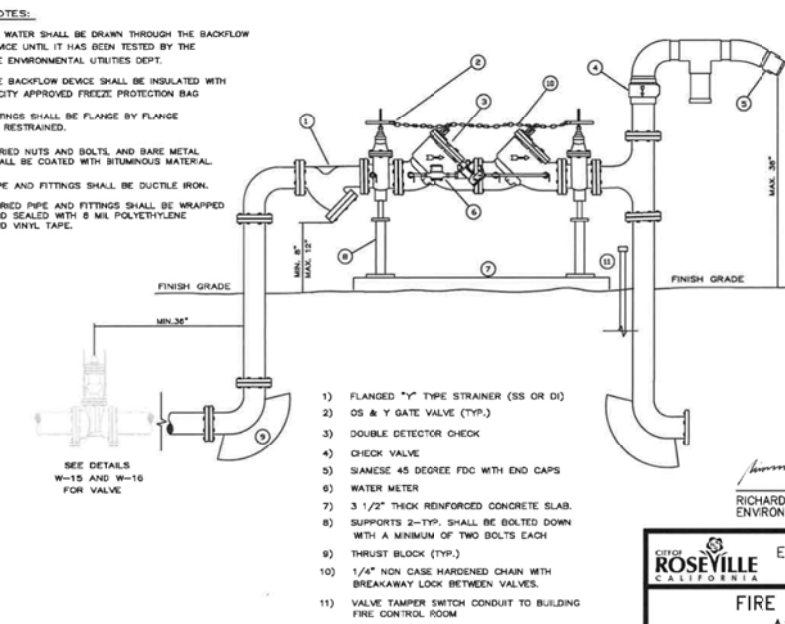
ONE 12" WIDE STRIP OF BACKFILL TAPE SHALL BE USED FOR EVERY 12" PIPE DIAMETER OR FRACTION THERE OF.

CITY OF ROSEVILLE
ENVIRONMENTAL UTILITIES
DEPARTMENT

WATER MAIN
TRENCH AND BACKFILL

SCALE: NONE
REVISED: JANUARY 2016
DRAWN BY: R. VAN NESS
APPROVED BY: RICHARD PLECKER

W-1



- NOTES:
- NO WATER SHALL BE DRAWN THROUGH THE BACKFLOW DEVICE UNTIL IT HAS BEEN TESTED BY THE ENVIRONMENTAL UTILITIES DEPT.
- THE BACKFLOW DEVICE SHALL BE INSULATED WITH A CITY APPROVED FREEZE PROTECTION BAG.
- FITTINGS SHALL BE FLANGE BY FLANGE OR RESTRAINED.
- BURIED NUTS AND BOLTS, AND BARE METAL SHALL BE COATED WITH BITUMINOUS MATERIAL.
- PIPE AND FITTINGS SHALL BE DUCTILE IRON.
- BURIED PIPE AND FITTINGS SHALL BE WRAPPED AND SEALED WITH 8 MIL POLYETHYLENE AND VINYL TAPE.
- 1) FLANGED "Y" TYPE STRAINER (SS OR DI)
 - 2) OS & Y GATE VALVE (TYP.)
 - 3) DOUBLE DETECTOR CHECK
 - 4) CHECK VALVE
 - 5) SIAMENSE 45 DEGREE FDC WITH END CAPS
 - 6) WATER METER
 - 7) 3 1/2" THICK REINFORCED CONCRETE SLAB.
 - 8) SUPPORTS 2-TYP. SHALL BE BOLTED DOWN WITH A MINIMUM OF TWO BOLTS EACH
 - 9) THRUST BLOCK (TYP.)
 - 10) 1/4" NON CASE HARDENED CHAIN WITH BREAKAWAY LOCK BETWEEN VALVES.
 - 11) VALVE TAMPER SWITCH CONDUIT TO BUILDING FIRE CONTROL ROOM

CITY OF ROSEVILLE
ENVIRONMENTAL UTILITIES
DEPARTMENT

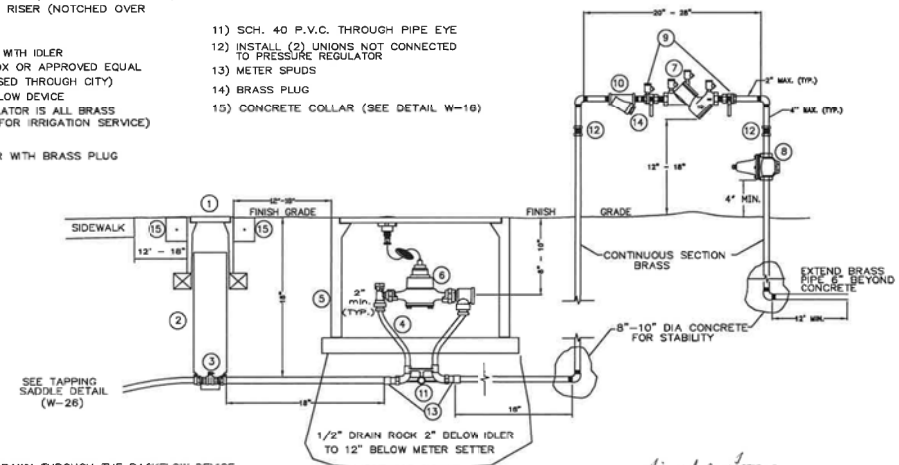
FIRE PROTECTION
ASSEMBLY

SCALE: NONE
REVISED: JANUARY 2016
DRAWN BY: R. VAN NESS
APPROVED BY: RICHARD PLECKER

W-2

- 1) CONCRETE VALVE BOX (G-5 PER DETAIL W-16)
- 2) 6" CONTINUOUS RISER (NOTCHED OVER PIPE AT BASE)
- 3) CURB STOP
- 4) METER RESETER WITH IDLER
- 5) N-16 UTILITY BOX OR APPROVED EQUAL
- 6) METER (PURCHASED THROUGH CITY)
- 7) R.P. TYPE BACKFLOW DEVICE
- 8) PRESSURE REGULATOR IS ALL BRASS (NOT REQUIRED FOR IRRIGATION SERVICE)
- 9) BALL VALVES
- 10) BRASS STRAINER WITH BRASS PLUG

- 11) SCH. 40 P.V.C. THROUGH PIPE EYE
- 12) INSTALL (2) UNIONS NOT CONNECTED TO PRESSURE REGULATOR
- 13) METER SPUDS
- 14) BRASS PLUG
- 15) CONCRETE COLLAR (SEE DETAIL W-16)



NOTES:

NO WATER SHALL BE DRAWN THROUGH THE BACKFLOW DEVICE UNTIL IT HAS BEEN TESTED BY THE ENVIRONMENTAL UTILITIES DEPT.

ALL FITTINGS AND PIPING SHALL BE BRASS BEGINNING AT CURB STOP

IF USED FOR IRRIGATION DO NOT INCLUDE PRESSURE REGULATOR.

INSTALL CONCRETE BLOCKING (4" X 4" X 15 1/2" SOLID SLUMP BLOCK) UNDER PERIMETER OF UTILITY BOXES.

WATER METERS SHALL BE PURCHASED THROUGH THE CITY. PURCHASE INCLUDES INSTALLATION.

THE BACKFLOW DEVICE SHALL BE INSULATED WITH A CITY APPROVED FREEZE PROTECTION BAG.

BURIED PIPE AND FITTINGS SHALL BE WRAPPED WITH 8 MIL POLYETHYLENE OR APPROVED EQUAL.

CITY OF ROSEVILLE
ENVIRONMENTAL UTILITIES
DEPARTMENT

COMMERCIAL 3/4" & 1"
SERVICE LINE

SCALE: NONE
REVISED: JANUARY 2016
DRAWN BY: R. VAN NESS
APPROVED BY: RICHARD PLECKER

W-6

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DESIGNED: M. FISHER
DRAWN: J. MARTIN
CHECKED: S. KADER
APPROVED: M. FISHER

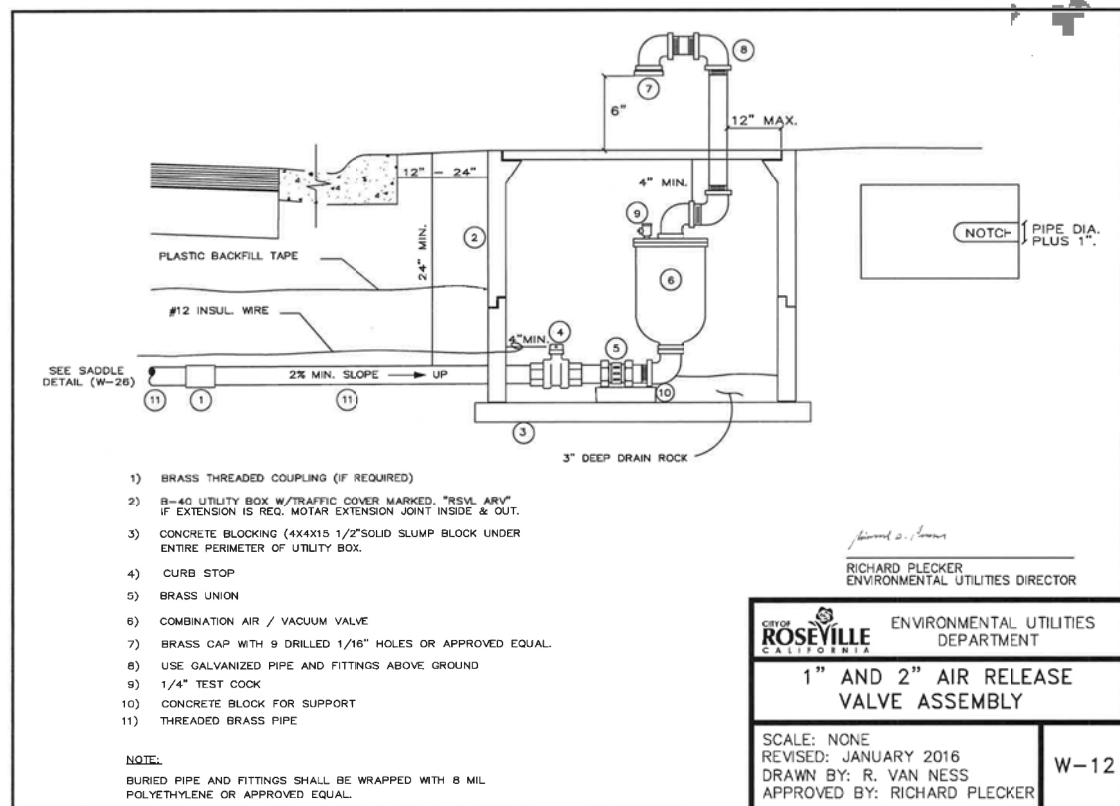
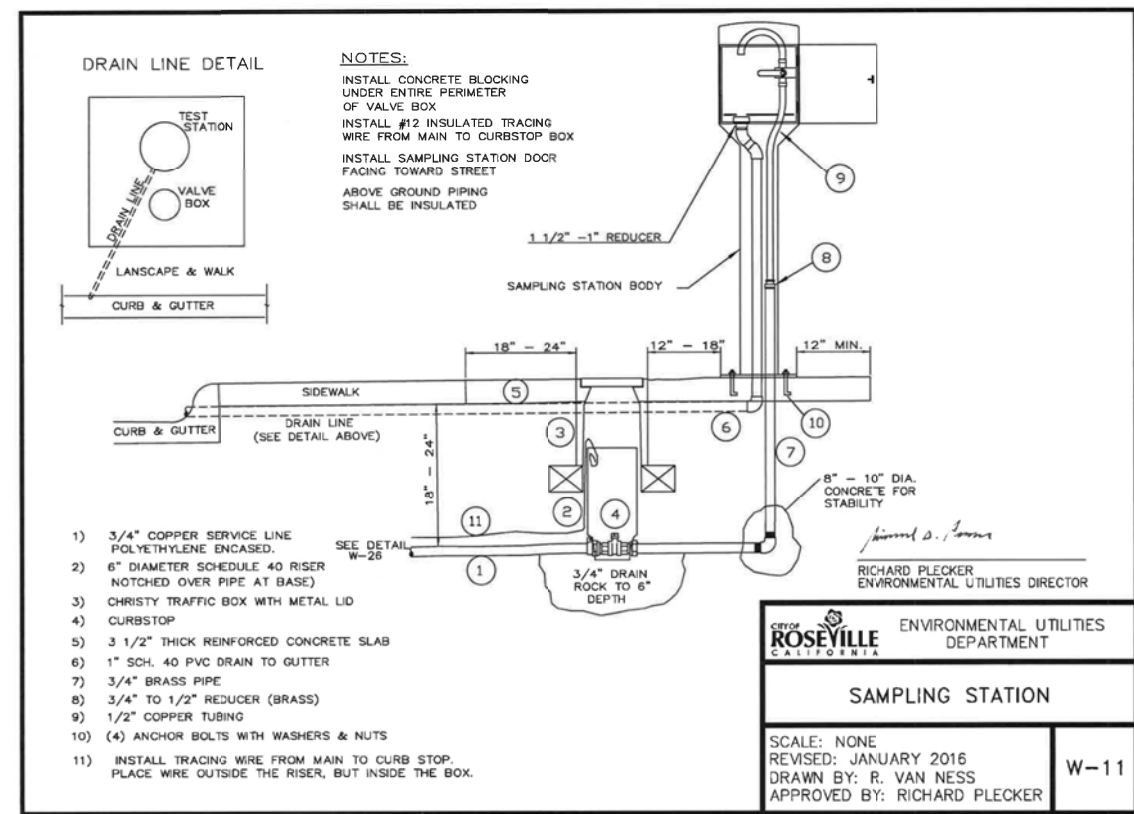
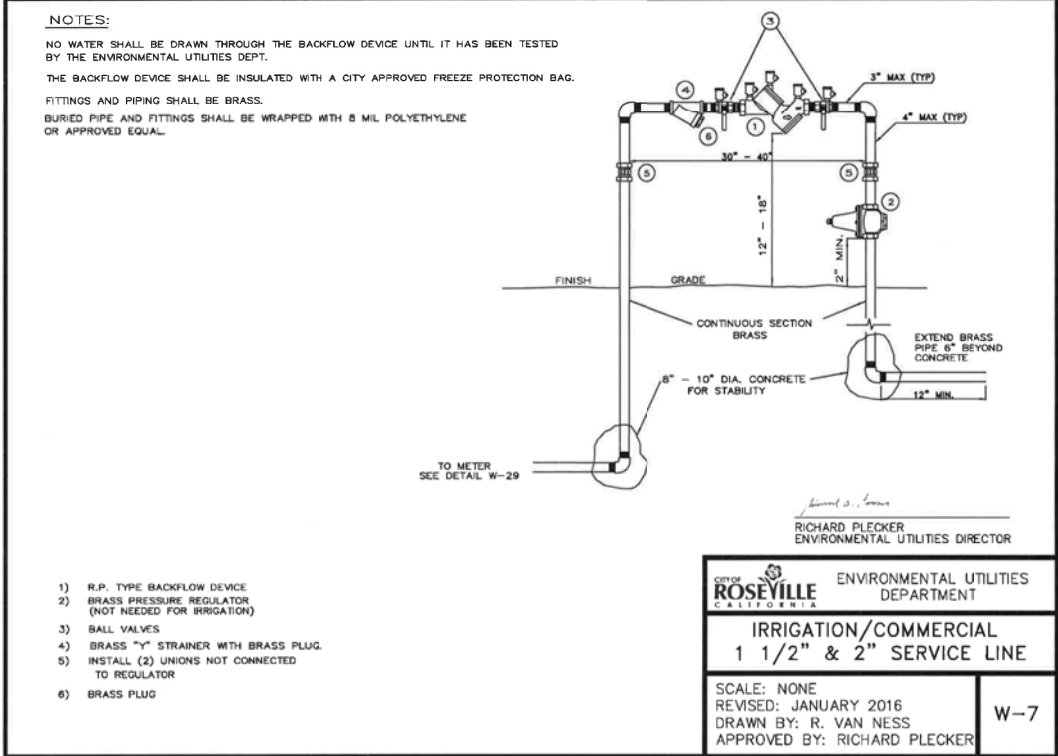
CITY OF ROSEVILLE
CALIFORNIA

WATERWORKS
ENGINEERS
2200 Douglas Blvd, Suite 105
Roseville, CA 95661 • 916-789-2888

CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

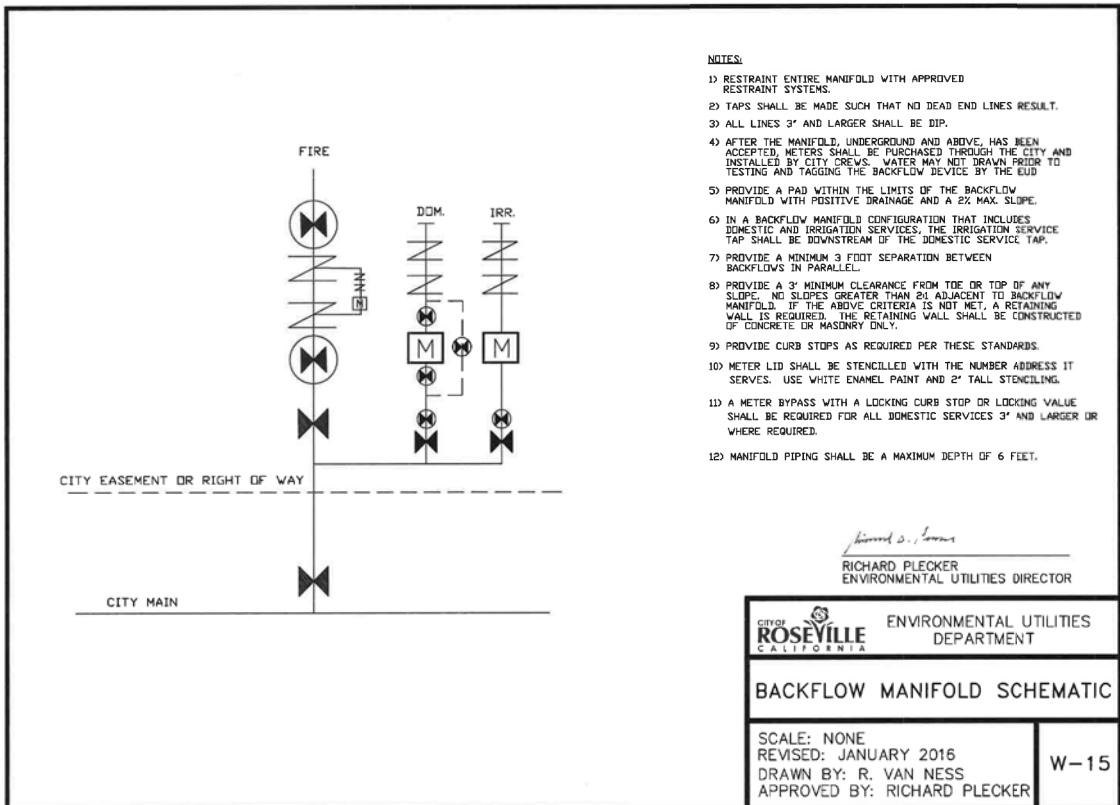
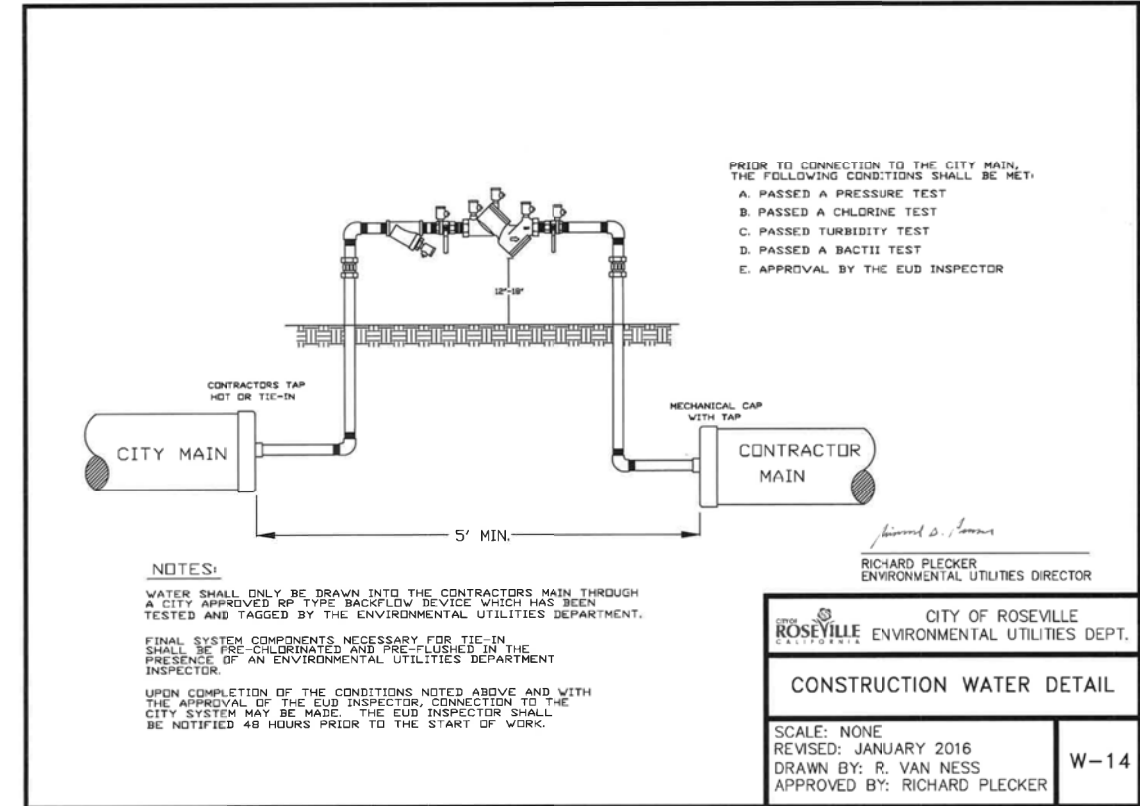
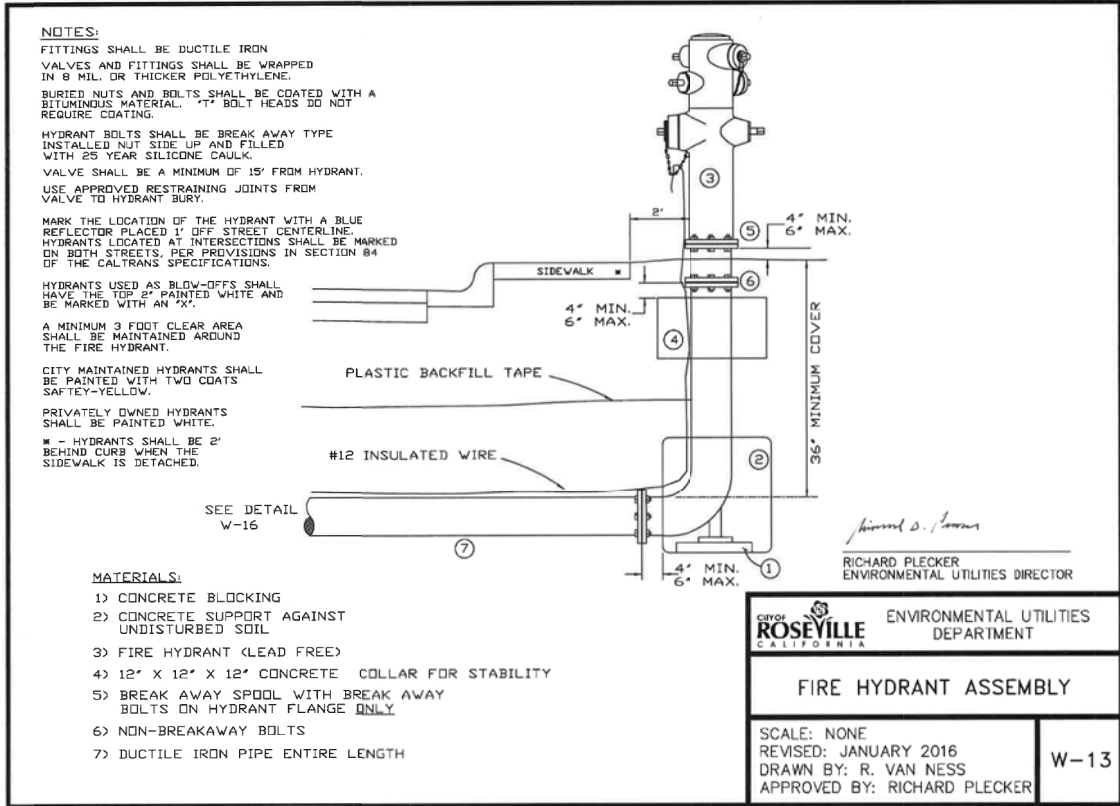
GENERAL
STANDARD DETAILS 4

DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WG00-G-023
SHEET NUMBER
19



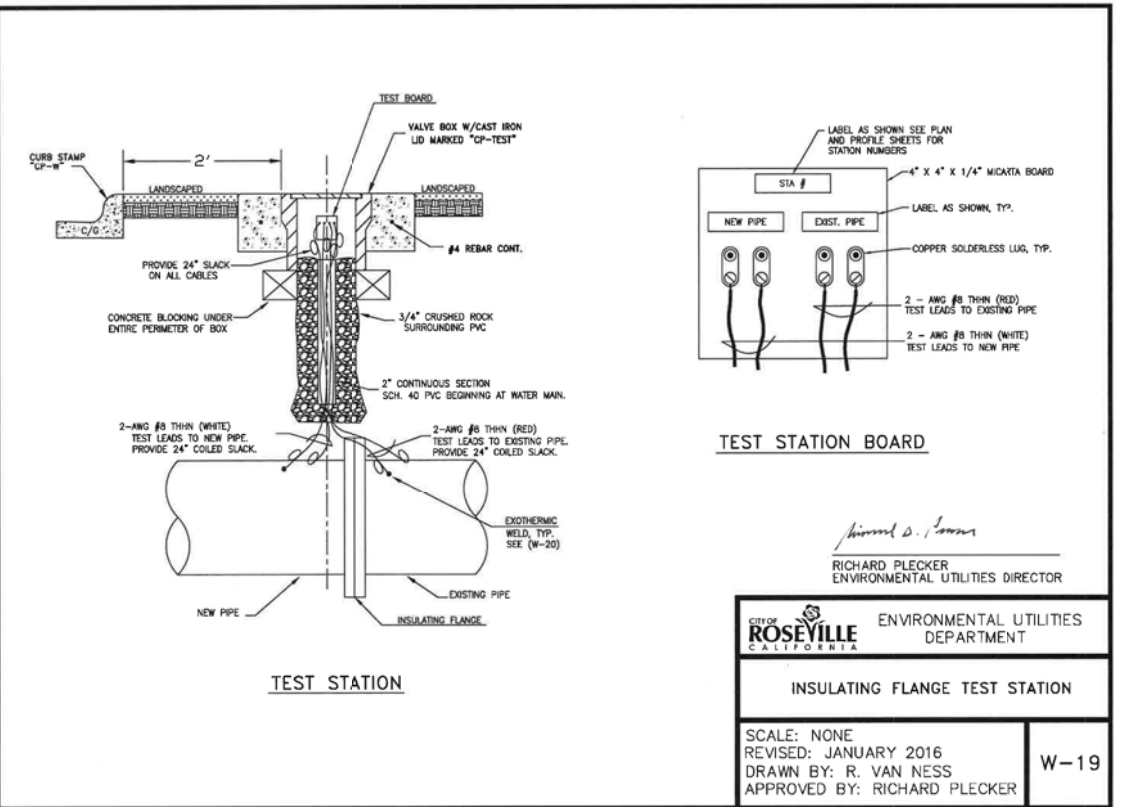
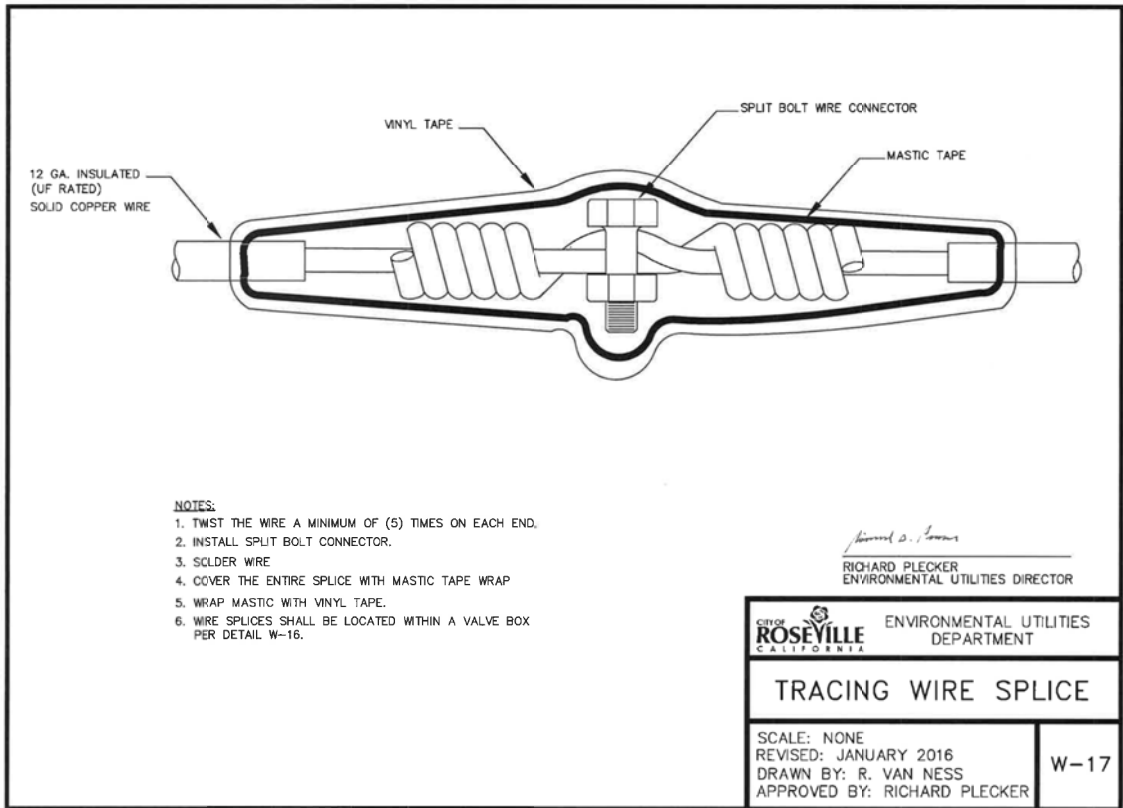
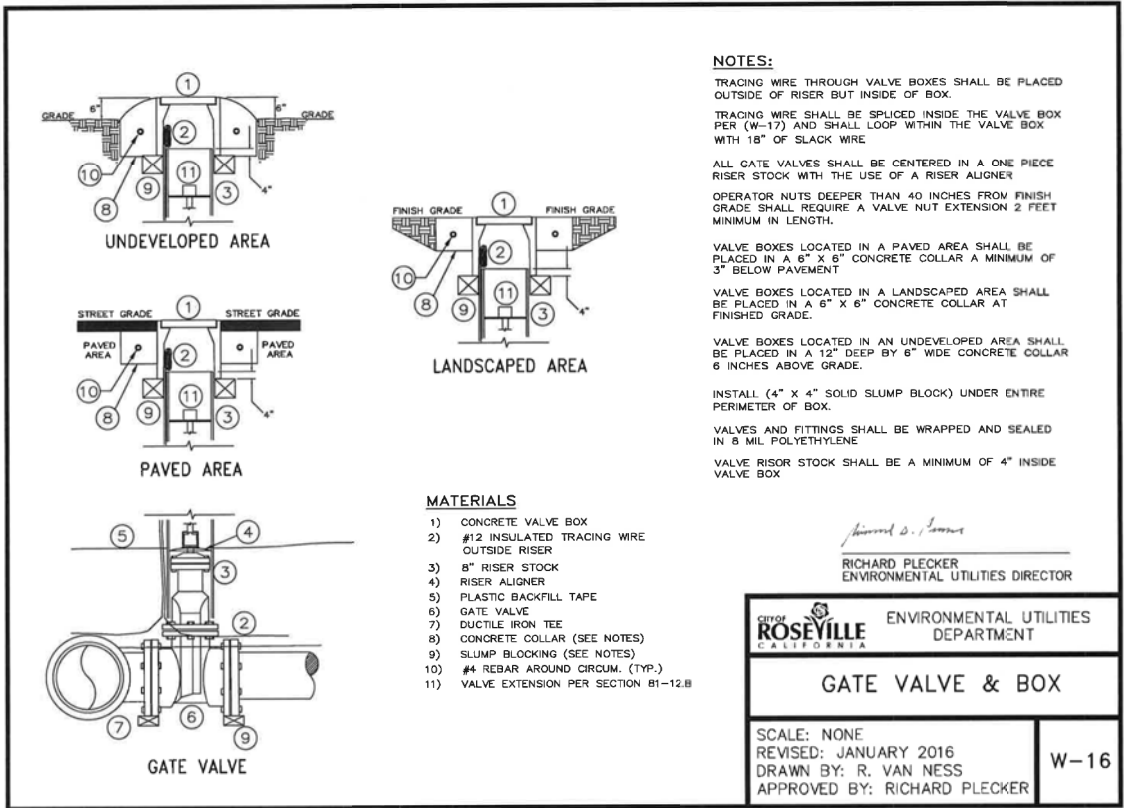
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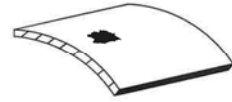




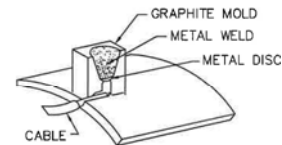
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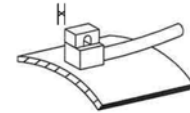
1) FILE TO BARE METAL & CLEAN OVER SURFACE



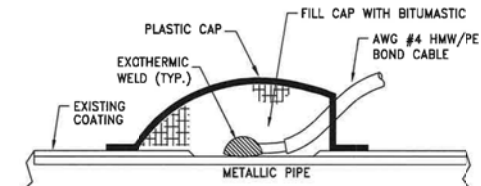
2) STRIP INSULATION FROM WIRE AND ATTACH SLEEVE



3) HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR, IGNITE WITH FLINT GUN



4) REMOVE SLAG FROM CONNECTION, COVER CONNECTION WITH COMPATIBLE COATING AND CAP OVER ALL EXPOSED METAL



Richard D. Plecker
RICHARD PLECKER
ENVIRONMENTAL UTILITIES DIRECTOR

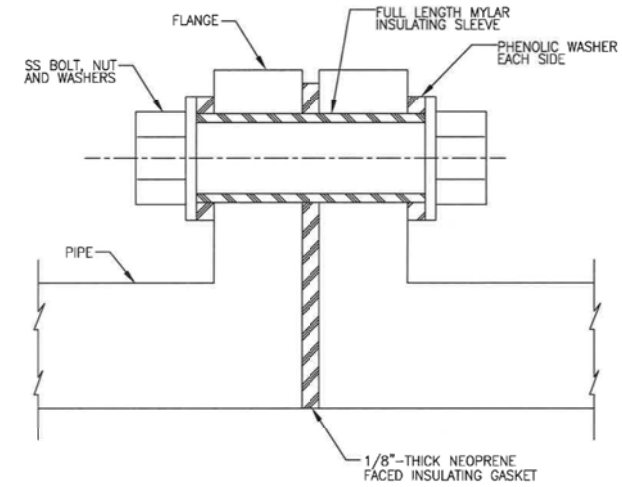
CITY OF ROSEVILLE
ENVIRONMENTAL UTILITIES
DEPARTMENT

EXOTHERMIC WELD

SCALE: NONE
REVISED: JANUARY 2016
DRAWN BY: R. VAN NESS
APPROVED BY: RICHARD PLECKER

W-20

NOTE:
EACH JOINT SHALL HAVE TWO
SEPARATE WELD WIRES.



Richard D. Plecker
RICHARD PLECKER
ENVIRONMENTAL UTILITIES DIRECTOR

CITY OF ROSEVILLE
ENVIRONMENTAL UTILITIES
DEPARTMENT

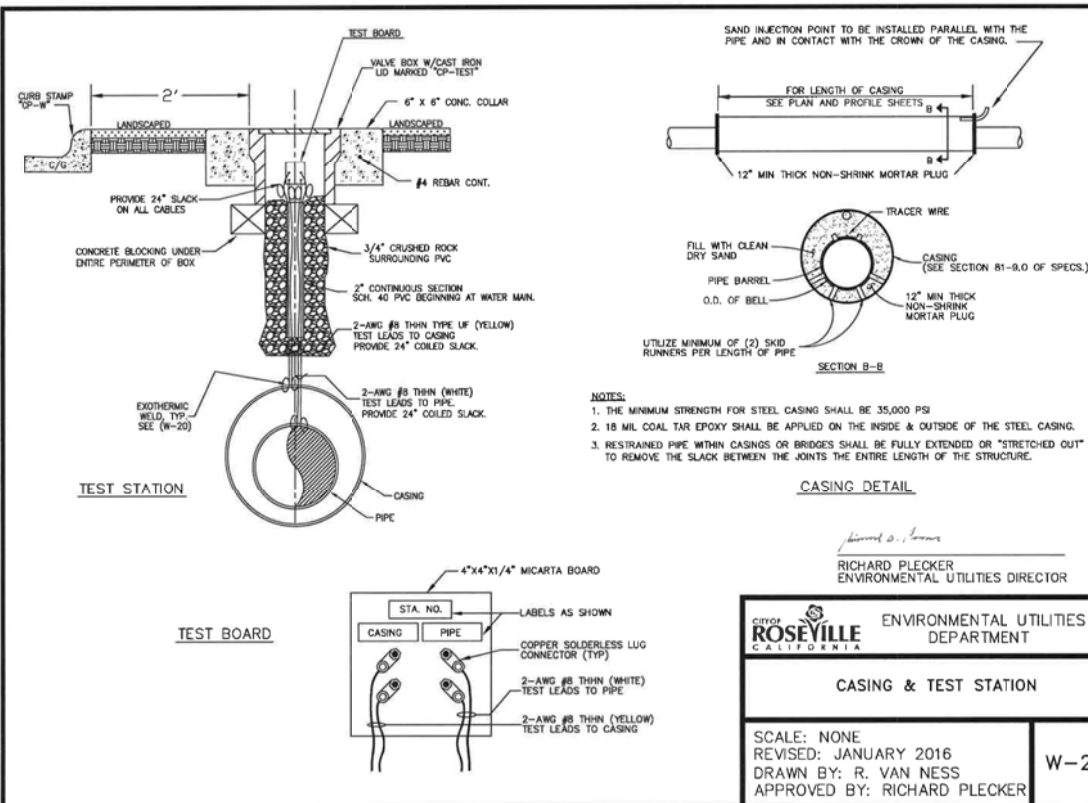
INSULATED FLANGE

SCALE: NONE
REVISED: JANUARY 2015
DRAWN BY: R. VAN NESS
APPROVED BY: RICHARD PLECKER

W-21

NOTES:

1. DIELECTRIC FLANGE KITS SHALL BE MANUFACTURED BY F.H. MALONEY CP., CALPICO OR APPROVED EQUAL
2. PROVIDE AN INSULATING FLANGE TEST STATION FOR THE INSULATED FLANGE.



Richard D. Plecker
RICHARD PLECKER
ENVIRONMENTAL UTILITIES DIRECTOR

CITY OF ROSEVILLE
ENVIRONMENTAL UTILITIES
DEPARTMENT

CASING & TEST STATION

SCALE: NONE
REVISED: JANUARY 2016
DRAWN BY: R. VAN NESS
APPROVED BY: RICHARD PLECKER

W-22

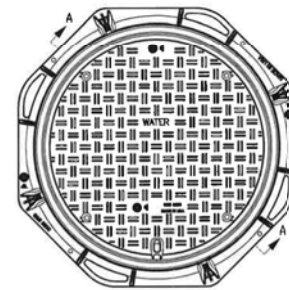
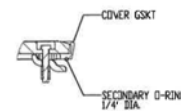
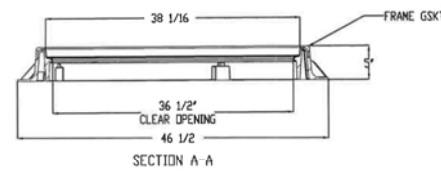
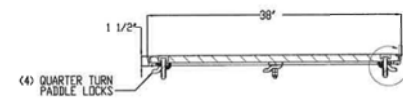
- NOTES:
1. THE MINIMUM STRENGTH FOR STEEL CASING SHALL BE 35,000 PSI
 2. 18 MIL COAL TAR EPOXY SHALL BE APPLIED ON THE INSIDE & OUTSIDE OF THE STEEL CASING.
 3. RESTRAINED PIPE WITHIN CASINGS OR BRIDGES SHALL BE FULLY EXTENDED OR "STRETCHED OUT" TO REMOVE THE SLACK BETWEEN THE JOINTS THE ENTIRE LENGTH OF THE STRUCTURE.

CASING DETAIL

FOR PROPOSAL
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CONSTRUCTION



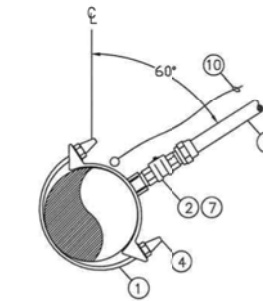
Cover and Frame Assembly



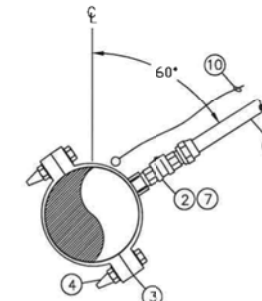
Richard Plecker
Environmental Utilities Director

CITY OF ROSEVILLE ENVIRONMENTAL UTILITIES DEPARTMENT	
36" MANHOLE RING AND COVER	
SCALE: NONE REVISED: JANUARY 2016 DRAWN BY: R. VAN NESS APPROVED BY: RICHARD PLECKER	W-25

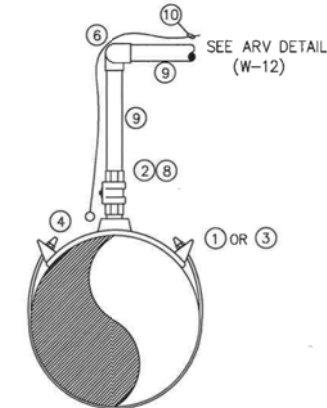
NOTES:
TO CONFORM TO AASHTO M306-05, H-20 AND H-25 EN/24 D4000.



**DOUBLE STRAP
DUCTILE IRON PIPE SADDLE**



PVC PIPE SADDLE



ARV SADDLE

MATERIALS:

- 1.) DOUBLE STRAP BRASS SADDLE FOR DUCTILE IRON MAIN
- 2.) INSULATING CORPORATION STOP OR NON INSULATED CORPORATION STOP WITH NYLON BUSHING
- 3.) BRASS SADDLE FOR PVC MAIN
- 4.) ZINC CAPS ON ALL BOLTS (ONLY WITH NON-INSULATED CORPORATION STOP)
- 5.) COPPER SERVICE
- 6.) SWING JOINT (2 - 90° BRASS FITTINGS)
- 7.) CORP STOP W/COMPRESSION COUPLING
- 8.) CORP STOP W/THREADED COUPLING
- 9.) THREADED BRASS PIPE
- 10.) TRACING WIRE (FOR COMMERCIAL SERVICES ONLY)

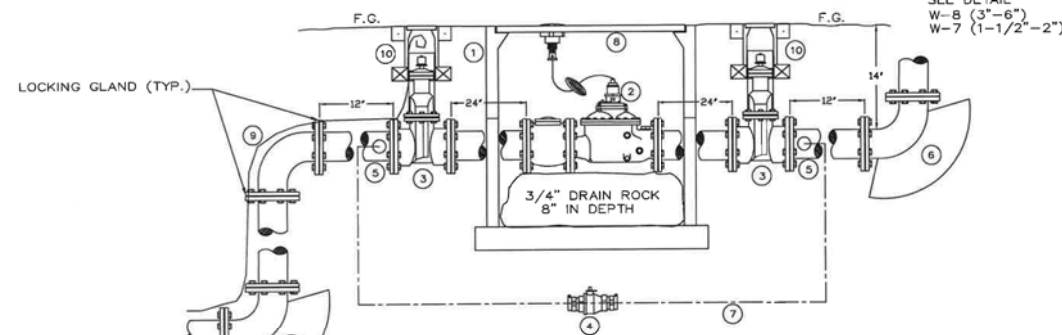
NOTES:

WRAP CORPORATION STOP AND COPPER SERVICE A MINIMUM OF 3' WITH AN APPROVED DIELECTRIC TAPE AND POLYKEN PRIMER PER MANUFACTURER'S RECOMMENDATIONS.
SADDLES SHALL BE WRAPPED IN 8 MIL POLYETHYLENE AND BACKFILLED WITH SAND.
TRACING WIRE SHALL BE REQUIRED ON ARV, HYDRANT RUNS, BLOW OFFS, SERVICES WITHOUT CONTINUOUS COPPER PIPE, AND OTHER MAJOR APPURTENANCES.

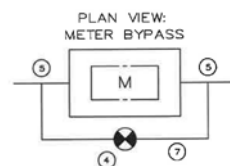
Richard Plecker
Environmental Utilities Director

CITY OF ROSEVILLE ENVIRONMENTAL UTILITIES DEPARTMENT	
SADDLE DETAIL	
SCALE: NONE REVISED: JANUARY 2016 DRAWN BY: R. VAN NESS APPROVED BY: RICHARD PLECKER	W-26

NOTES:
PIPE SHALL BE DUCTILE IRON FOR 3" AND LARGER. PIPE SHALL BE BRASS FOR 2" AND SMALLER.
INSTALL CONCRETE BLOCKING (4" X 4" SOLID SLUMP BLOCK) UNDER ENTIRE PERIMETER OF THE UTILITY BOX.
PIPE AND FITTINGS SHALL BE WRAPPED WITH 8 MIL. POLYETHYLENE
USE CITY APPROVED RESTRAINED JOINTS OR FLANGED SPOOLS
WATER METER SHALL BE PURCHASED THROUGH THE CITY. PURCHASE INCLUDES INSTALLATION.
USE TURBO METER FOR IRRIGATION & COMPOUND METER FOR COMMERCIAL SERVICE.



SEE DETAIL
W-15 & W-16 (3"-6")
W-15 & W-26 (1-1/2"-2")



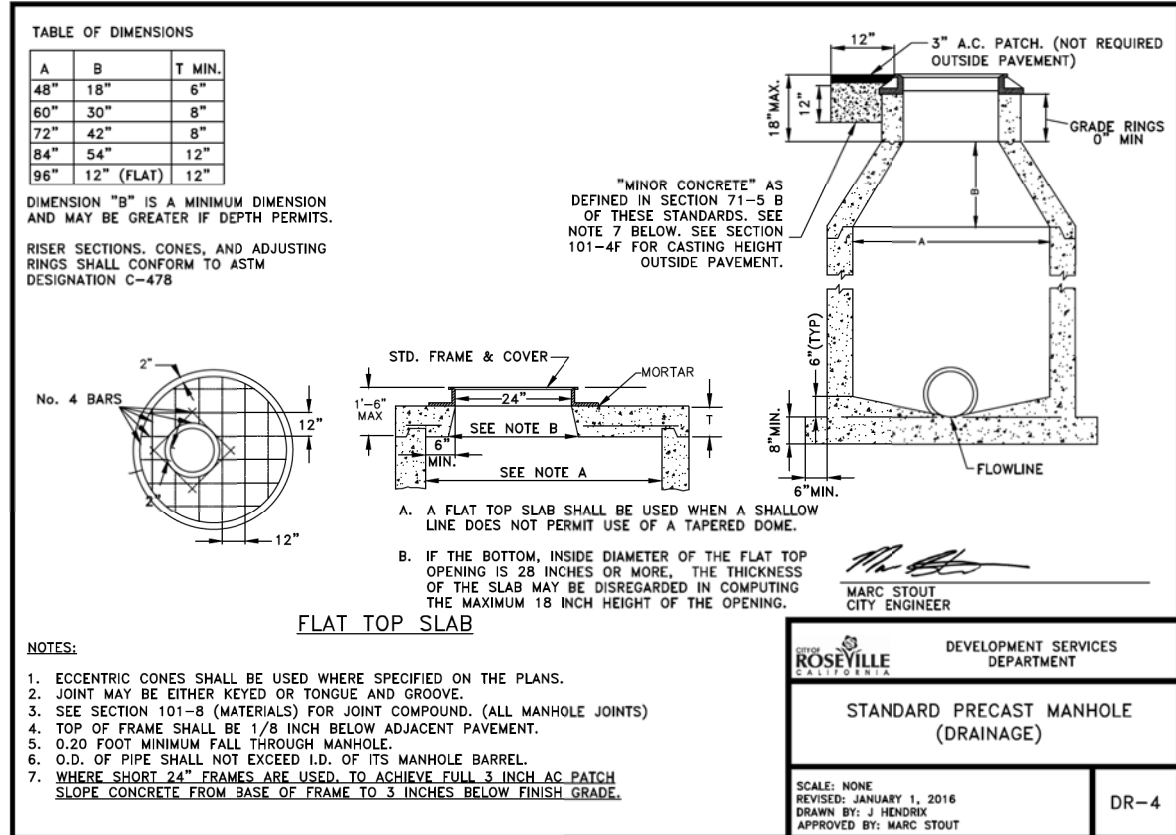
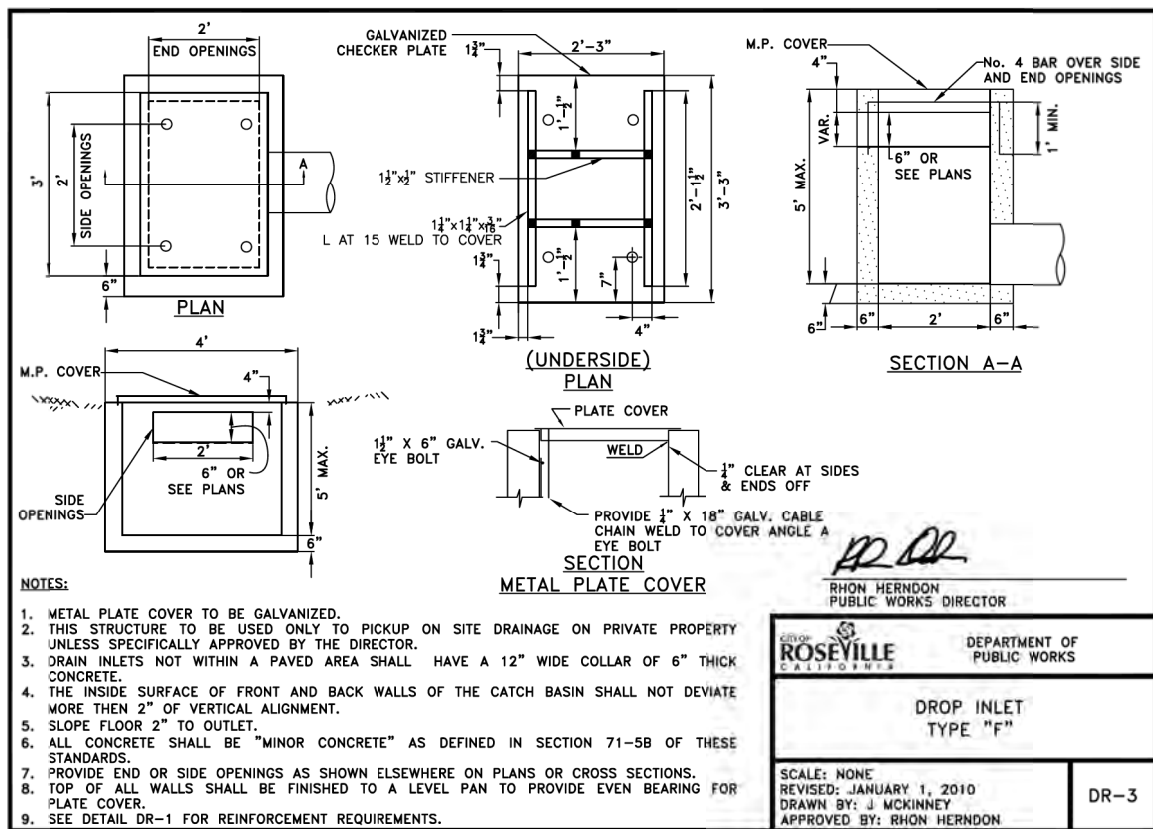
- MATERIALS:**
- 1) REFER TO TABLE 1 FOR UTILITY BOX SIZING, OR B-48 BOX WITH EXTENSION
 - 2) METER WITH STRAINER (PURCHASED THROUGH CITY)
INSTALL IDLER SPOOL DURING INSTALLATION OF METER BOX.
 - 3) RESILIENT SEAT GATE VALVE (3"-6") OR LOCKING CURB STOP FOR 1-1/2" TO 2" SERVICES
 - 4) 2" LOCKING CURB STOP IN G-5 BOX FOR 3"-6" SERVICES OR 3/4" LOCKING CURB STOP FOR 1 1/2"-2" SERVICES. SEE W-16
 - 5) 2" DOUBLE STRAP BRASS SADDLE FOR DUCTILE IRON MAIN WITH 2" MIPT BY COMPRESSION ADAPTER
 - 6) THRUST BLOCKS (TYP.)
 - 7) 3/4" or 2" BYPASS PIPE MATERIAL TO BE SOFT COPPER TYPE AND FITTINGS TO BE BRASS COMPRESSION TYPE.
 - 8) METAL TRAFFIC LID WELD MARKED "RSL WATER"
 - 9) TRACING WIRE
 - 10) SEE W-16 FOR VALVE BOX AND RISER DETAIL

Richard Plecker
Environmental Utilities Director

CITY OF ROSEVILLE ENVIRONMENTAL UTILITIES DEPARTMENT	
1-1/2", 2", 3", 4", 6" COMPOUND & TURBO METER WITH BYPASS	
SCALE: NONE REVISED: JANUARY 2016 DRAWN BY: R. VAN NESS APPROVED BY: RICHARD PLECKER	W-29

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NOT FOR
CONSTRUCTION



DESIGNED: M. FISHER
DRAWN: J. MARTIN
CHECKED: S. KADER
APPROVED: M. FISHER

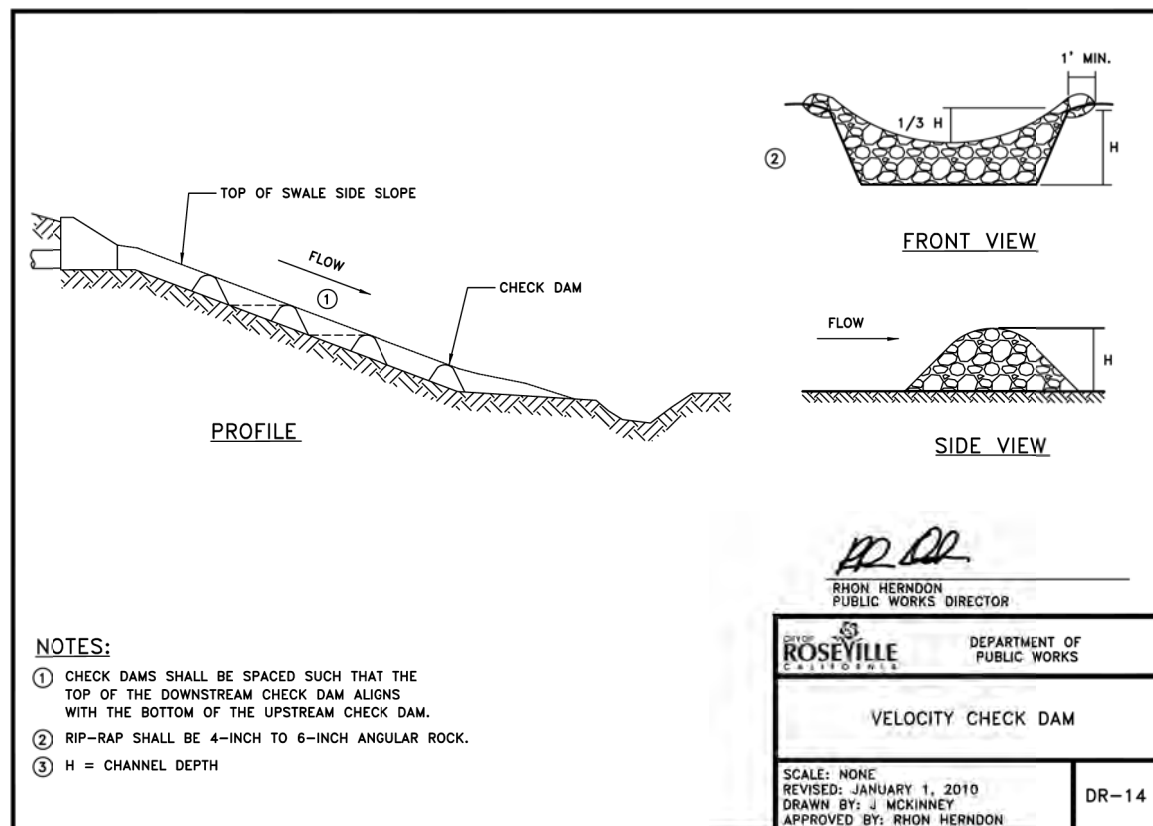
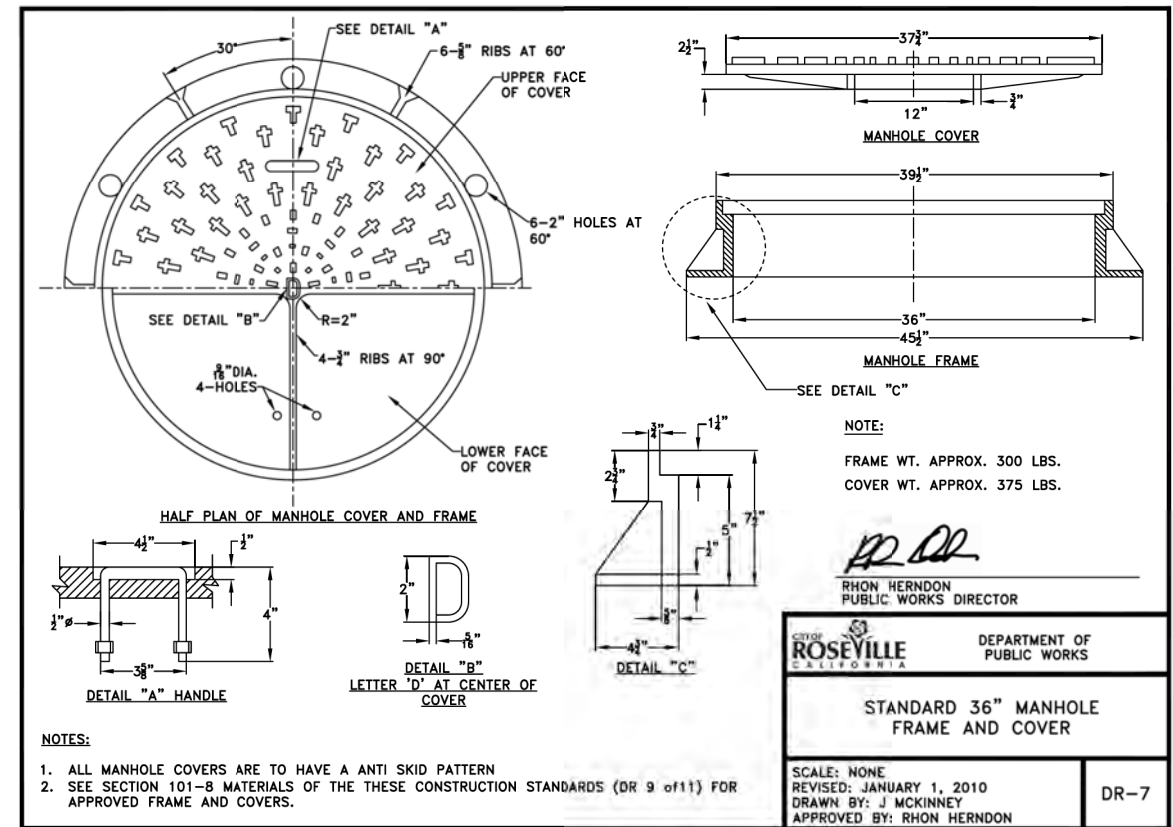
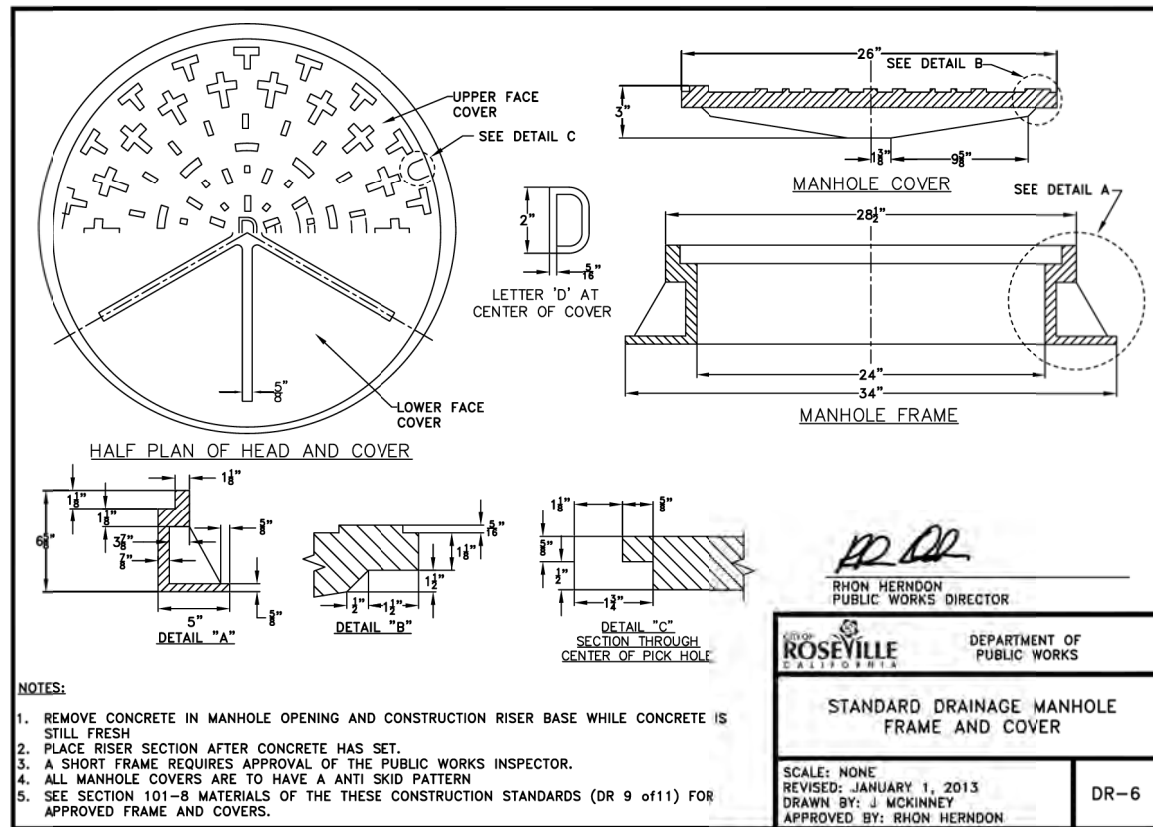
CITY OF ROSEVILLE
CALIFORNIA

WATERWORKS
ENGINEERS
2200 Douglas Blvd, Suite 105
Roseville, CA 95661 • 916-789-2888

CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

GENERAL
STANDARD DETAILS 11

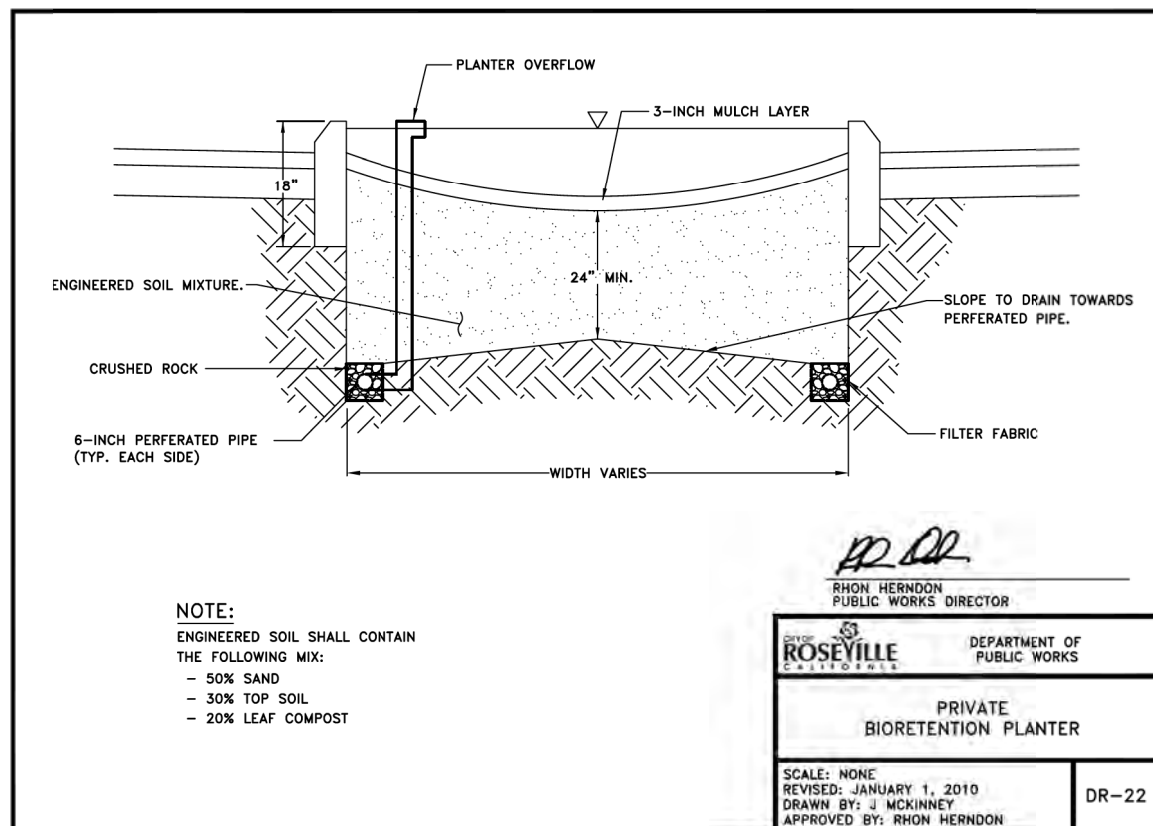
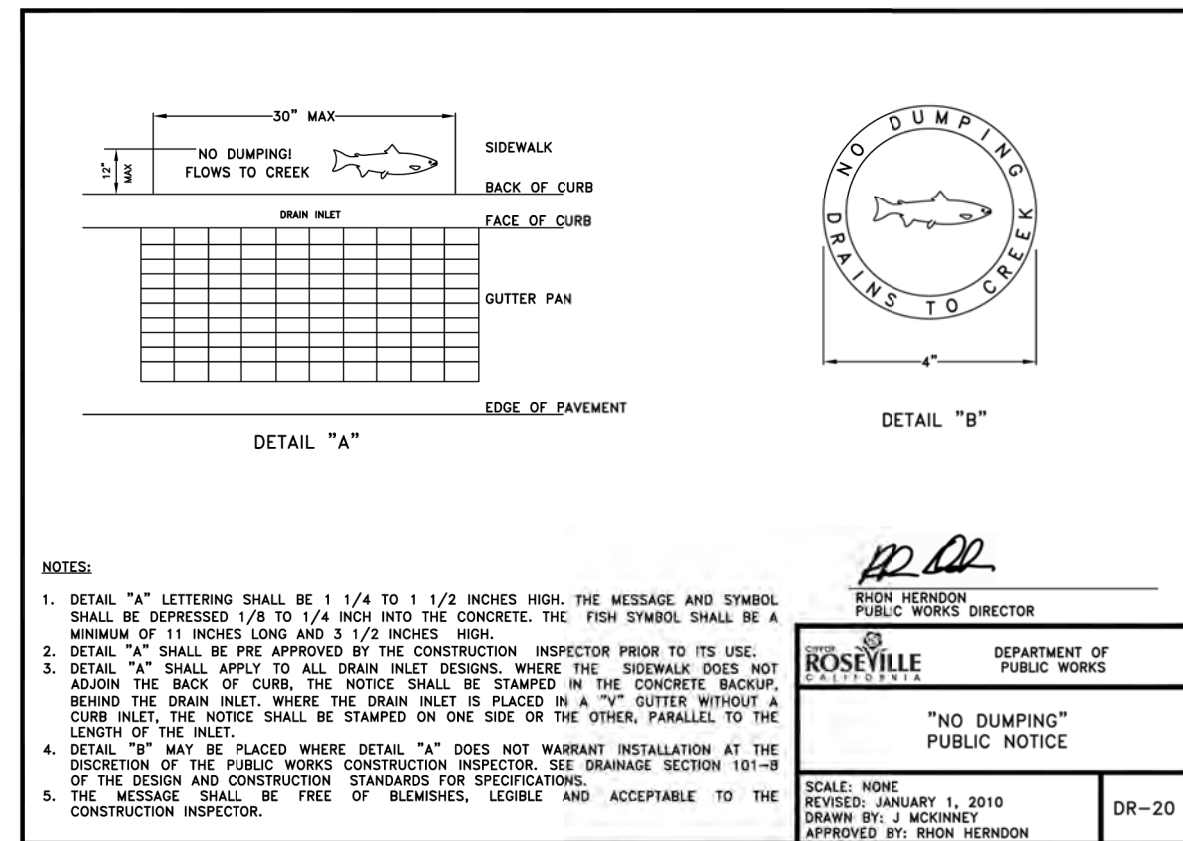
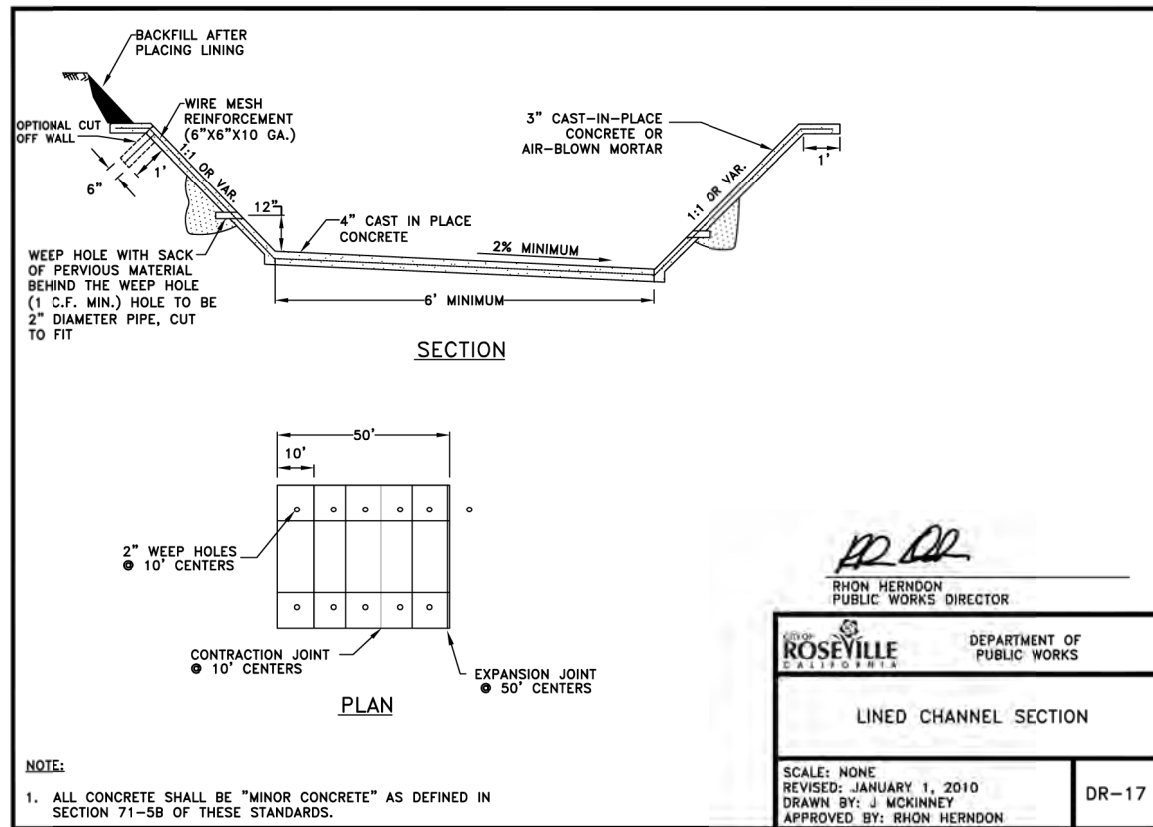
DATE: NOVEMBER 2019
PROJECT NUMBER: 17-083
DRAWING NUMBER: WD00-G-030
SHEET NUMBER: 26



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DESIGNED M. FISHER	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL STANDARD DETAILS 12			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-G-031			
SHEET NUMBER 27			



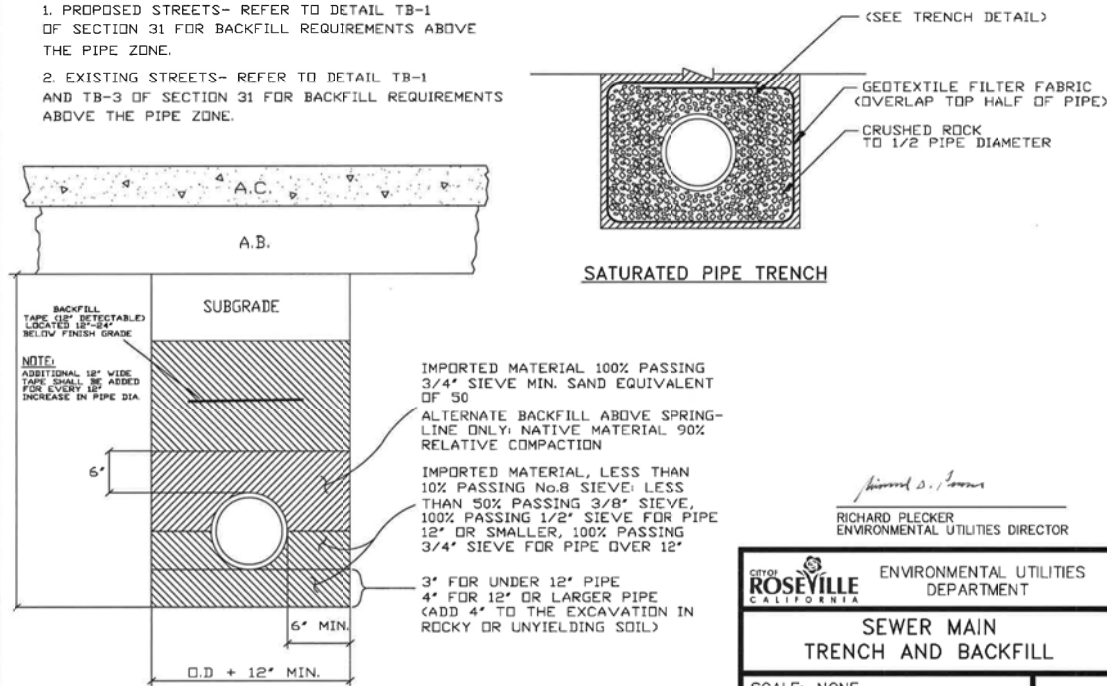
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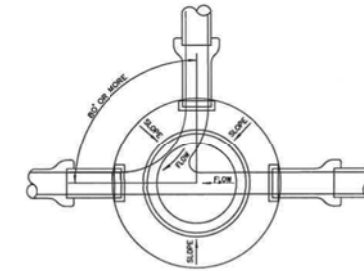
DESIGNED M FISHER	DRAWN J MARTIN	CHECKED S KADER	APPROVED M FISHER
CITY OF ROSEVILLE CALIFORNIA			
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 Roseville, CA 95661 • 916-785-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL STANDARD DETAILS 13			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-G-032			
SHEET NUMBER 28			

TRENCH BACKFILL REQUIREMENTS:

1. PROPOSED STREETS- REFER TO DETAIL TB-1 OF SECTION 31 FOR BACKFILL REQUIREMENTS ABOVE THE PIPE ZONE.
2. EXISTING STREETS- REFER TO DETAIL TB-1 AND TB-3 OF SECTION 31 FOR BACKFILL REQUIREMENTS ABOVE THE PIPE ZONE.



NOTE: BACKFILL SHALL BE MECHANICALLY CONSOLIDATED OR SHOVEL SLICED UNDER THE HAUNCHES OF THE PIPE



NOTES

MANHOLE LIDS SHALL BE SEALED WITH AN APPROVED RUBBER GASKET. JOINTS SHALL BE MORTARED INSIDE AND OUT.

UNUSED CHANNELS SHALL BE COMPLETELY FILLED WITH GROUT.

STUBS SHALL BE PLUGGED AND END MARKED ABOVE FINISHED GRADE WITH A REDWOOD 4 BY 4 POST PAINTED GREEN

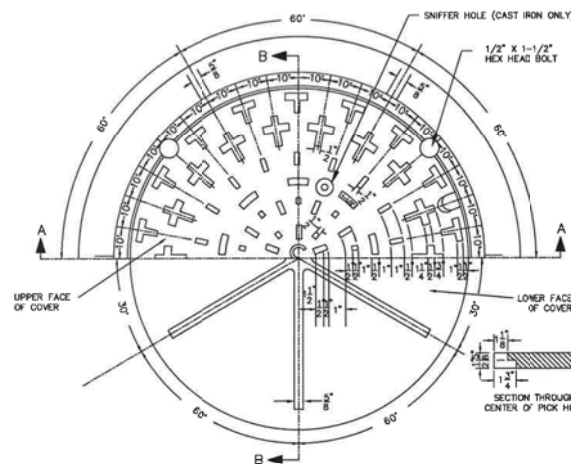
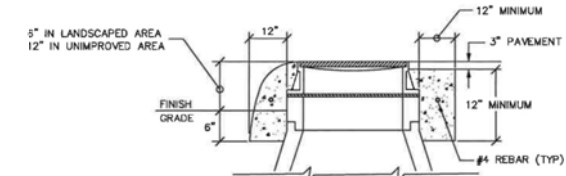
IF AN ECCENTRIC CONE IS USED, PLACE SUCH THAT THE OPENING IS OVER THE UPSTREAM INVERT.

NO CAULDER OR REPAIR COUPLINGS SHALL BE USED ON NEW CONSTRUCTION

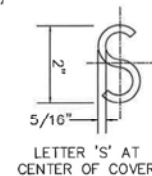
FLOW LINES SHALL HAVE A 1/10 DROP OR AS INDICATED ON PLANS

MANHOLES WITH DROPS SHALL BE EPOXY COATED. THE COATING SHALL BE APPLIED PER SEC. 91-10K OF THESE STANDARDS.

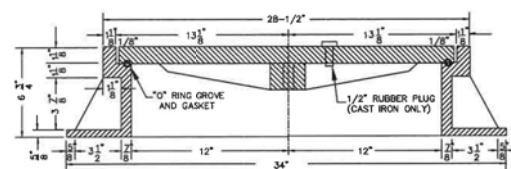
* 60" & 72" MANHOLES SHALL USE A 35" COMPOSITE LID AND FRAME.



HALF PLAN OF HEAD AND COVER



SECTION B-B



SECTION A-A

NOTE: SEE SECTION 91-16.E.3 FOR APPROVED LIST OF SEWER MANHOLE FRAME AND COVER

Richard Plecker
ENVIRONMENTAL UTILITIES DIRECTOR

CITY OF ROSEVILLE
ENVIRONMENTAL UTILITIES DEPARTMENT

STANDARD SEWER MANHOLE
FRAME AND COVER

SCALE: NONE
REVISED: JANUARY 2016
DRAWN BY: R. VAN NESS
APPROVED BY: RICHARD PLECKER

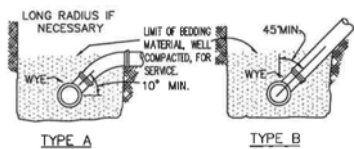
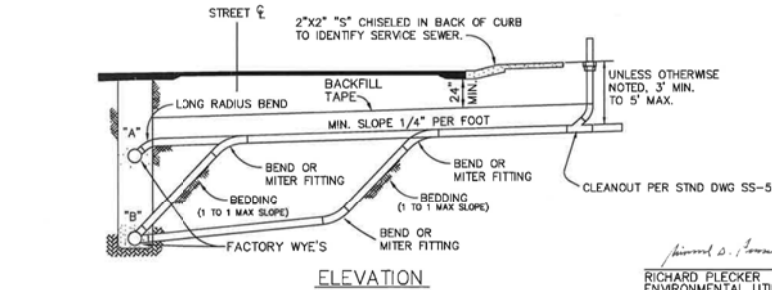
SS-3

FOR PROPOSAL
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NOT FOR
CONSTRUCTION



GENERAL NOTES:

1. ALL SERVICE LINES SHALL BE 4" FOR RESIDENTIAL AND 6" FOR COMMERCIAL, UNLESS OTHERWISE NOTED.
2. SERVICES SHALL HAVE SAME BEDDING AND BACKFILL AS LATERAL SEWER.
3. CONTRACTOR SHALL USE THE MOST APPROPRIATE TYPE CONNECTION (A OR B) FOR THE PARTICULAR SITUATION ENCOUNTERED.
4. SERVICE SEWER SHALL HAVE MINIMUM 3'-0" COVER AT PROPERTY LINE WHENEVER LATERAL DEPTH AND SERVICE SEWER SLOPE OF 1/4" PER FOOT (MINIMUM) PERMIT. SEE NOTE 10.
5. WHEN THE LATERAL SEWER DEPTH IS SUCH THAT MINIMUM COVER AT PROPERTY LINE CANNOT BE MET, THE MINIMUM SLOPE OF 1/4" PER FOOT SHALL GOVERN THE COVER.
6. MIN. SPECIFIED COVER AT THE PROPERTY LINE SHALL BE MEASURED FROM EXISTING GROUND SURFACE OR EDGE OF ADJACENT ROADWAY, WHICHEVER IS LOWER.
7. A SPECIFIC ELEVATION AT THE PROPERTY LINE, WHEN SHOWN ON THE PLANS OR DESIGNATED BY THE ENGINEER, SHALL GOVERN.
8. MITER FITTING SHALL BE MAX. 45°.
9. MINIMUM DEPTH OF COVER SHALL BE INCREASED TO 4'-6" WHERE A WATER MAIN IS TO BE INSTALLED AT BACK OF SIDEWALK AS PART OF THE SUBDIVISION IMPROVEMENTS. IN SUCH CASES, THE SERVICE SHALL BE EXTENDED TO A MINIMUM OF 7' BACK OF SIDEWALK, CLEANOUT TO GRADE SHALL REMAIN WITHIN 3' OF BACK OF SIDEWALK.
10. SEWER SERVICES ORIGINATING FROM SEWER MAINS 14 FT AND GREATER IN DEPTH SHALL HAVE THE CROTCH OF THE VCP "WYE" FITTING FILLED WITH CONCRETE.
11. UNDERGROUND CONTRACTOR SHALL END SEWER SERVICE 2-3' UPSTREAM OF SEWER CLEANOUT. SEE STANDARD DETAIL SS-5.



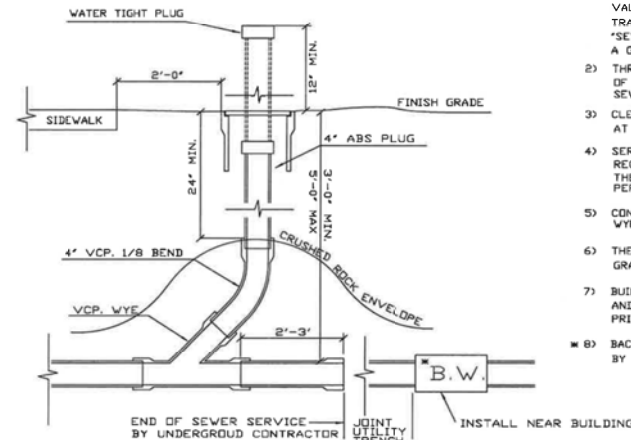
CONNECTION DETAILS

CITY OF ROSEVILLE
ENVIRONMENTAL UTILITIES DEPARTMENT

SEWER SERVICE

SCALE: NONE
REVISED: JANUARY 2016
DRAWN BY: R. VAN NESS
APPROVED BY: RICHARD PLECKER

SS-4



- 9) 2" VCP SHALL BE INSTALLED WHERE SEWER SERVICE ENTERS OVER JOINT UTILITY TRENCH.
- 10) TREES ARE TO BE PLACED 7 1/2' FROM CLEAN OUT.
- 11) INSTALL A CITY CLEANOUT AT A MINIMUM 5' FROM COMMERCIAL BUILDINGS.

NOTES:

- 1) INSTALL ROUND NON-TRAFFIC TYPE CONCRETE VALVE BOX & COVER MARKED "SEWER" IN A NON - TRAFFIC AREA. INSTALL METAL LID MARKED "SEWER" IN AREAS WITH POTENTIAL TRAFFIC. A GS BOX SHALL BE INSTALLED IN TRAFFIC AREAS.
- 2) THREE FOOT VCP STUB SHALL BE INSTALLED UPSTREAM OF CLEANOUT. 2" VCP SHALL BE INSTALLED WHERE SEWER SERVICE ENTERS OVER JOINT UTILITY TRENCH
- 3) CLEANOUT BOX TO BE FREE OF ALL DIRT AND READY AT TIME OF PRE-FINAL INSPECTION.
- 4) SERVICES OVER 100' LONG AND COMMERCIAL SERVICES REQUIRE A MIN. 6' CLEANOUT WITH 6' FITTINGS. THE CLEANOUT BOX SHALL BE CONSTRUCTED PER W-16.
- 5) CONNECTION TO MAIN SHALL BE WITH A FACTORY WYE OR AT A MANHOLE.
- 6) THE CLEANOUT RISER SHALL BE INSTALLED 12" ABOVE GRADE PRIOR TO BUILDING CONSTRUCTION.
- 7) BUILDING CONTRACTOR SHALL SET BOX TO FINISH GRADE AND INSTALL AN ABS PLUG SET 6" BELOW THE SURFACE PRIOR TO BUILDING PRE-FINAL.
- 8) BACKWATER VALVE IF REQUIRED SHALL BE INSTALLED BY THE BUILDING CONTRACTOR

CITY OF ROSEVILLE
ENVIRONMENTAL UTILITIES DEPARTMENT

SEWER SERVICE CLEANOUT

SCALE: NONE
REVISED: JANUARY 2016
DRAWN BY: R. VAN NESS
APPROVED BY: RICHARD PLECKER

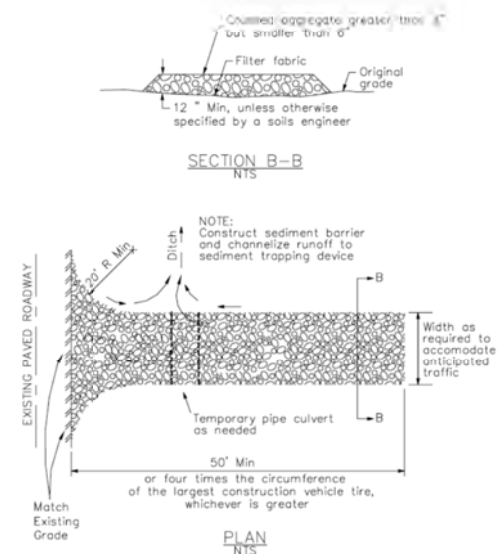
SS-5

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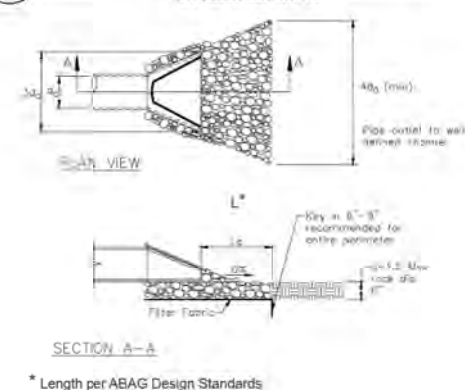
3 Stabilized Construction Entrance/Exit

CASQA Detail TC-1



4 Velocity Dissipation Devices

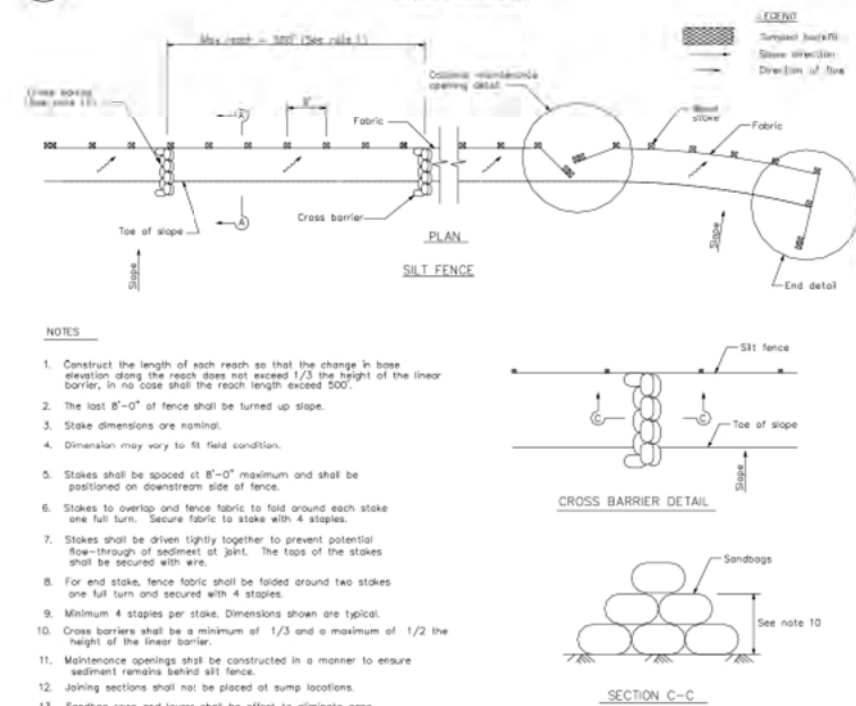
CASQA Detail EC-10



Source for Graphics: California Stormwater BMP Handbook, California Stormwater Quality Association, January 2003.
Available from: www.cabmphandbooks.com

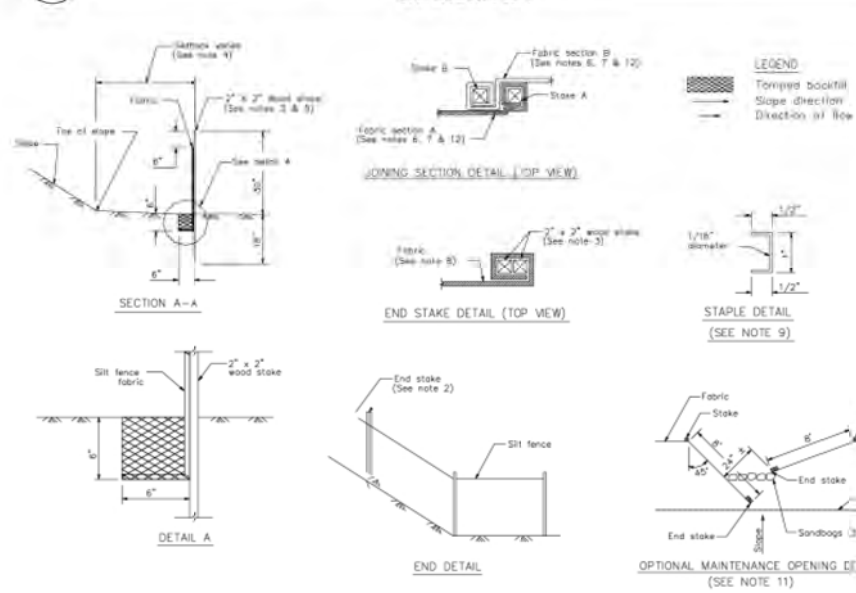
1 Silt Fence

CASQA Detail SE-1



2 Silt Fence

CASQA Detail SE-1



STANDARD BEST MANAGEMENT PRACTICE NOTES

- Solid and Demolition Waste Management:** Provide designated waste collection areas and containers on site away from streets, gutters, storm drains, and waterways, and arrange for regular disposal. Waste containers must be watertight and covered at all times except when waste is deposited. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C-3) or latest.
- Hazardous Waste Management:** Provide proper handling and disposal of hazardous wastes by a licensed hazardous waste material handler. Hazardous wastes shall be stored and properly labeled in sealed containers constructed of suitable materials. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-5 to C-6) or latest.
- Spill Prevention and Control:** Provide proper storage areas for liquid and solid materials, including chemicals and hazardous substances, away from streets, gutters, storm drains, and waterways. Spill control materials must be kept on site where readily accessible. Spills must be cleaned up immediately and contaminated soil disposed properly. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-7 to C-8, C-13 to C-14) or latest.
- Vehicle and Construction Equipment Service and Storage:** An area shall be designated for the maintenance, where on-site maintenance is required, and storage of equipment that is protected from stormwater run-on and runoff. Measures shall be provided to capture any waste oils, lubricants, or other potential pollutants and these wastes shall be properly disposed of off site. Fueling and major maintenance/repair, and washing shall be conducted off-site whenever feasible. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C-9) or latest.
- Material Delivery, Handling and Storage:** In general, materials should not be stockpiled on site. Where temporary stockpiles are necessary and approved by the County, they shall be covered with secured plastic sheeting or tarp and located in designated areas near construction entrances and away from drainage paths and waterways. Barriers shall be provided around storage areas where materials are potentially in contact with runoff. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-11 to C-12) or latest.
- Handling and Disposal of Concrete and Cement:** When concrete trucks and equipment are washed on-site, concrete wastewater shall be contained in designated containers or in a temporary lined and watertight pit where wasted concrete can harden for later removal. If possible have concrete contractor remove concrete wash water from site. In no case shall fresh concrete be washed into the road right-of-way. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-15 to C-16) or latest.
- Pavement Construction Management:** Prevent or reduce the discharge of pollutants from paving operations, using measures to prevent run-on and runoff pollution and properly disposing of wastes. Avoid paving in the wet season and reschedule paving when rain is in the forecast. Residue from saw-cutting shall be vacuumed for proper disposal. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-17 to C-18) or latest.
- Contaminated Soil and Water Management:** Inspections to identify contaminated soils should occur prior to construction and at regular intervals during construction. Remediating contaminated soil should occur promptly after identification and be specific to the contaminant identified, which may include hazardous waste removal. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages C-19 to C-20) or latest.
- Sanitary/Septic Water Management:** Temporary sanitary facilities should be located away from drainage paths, waterways, and traffic areas. Only licensed sanitary and septic waste haulers should be used. Secondary containment should be provided for all sanitary facilities. Refer to Erosion & Sediment Control Field Manual, 4th Edition (page C-21) or latest.
- Inspection & Maintenance:** Areas of material and equipment storage sites and temporary sanitary facilities must be inspected weekly. Problem areas shall be identified and appropriate additional and/or alternative control measures implemented immediately, within 24 hours of the problem being identified.

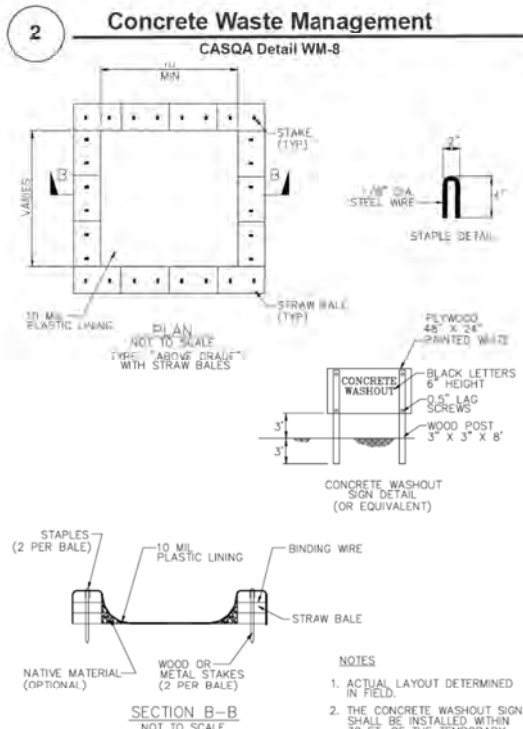
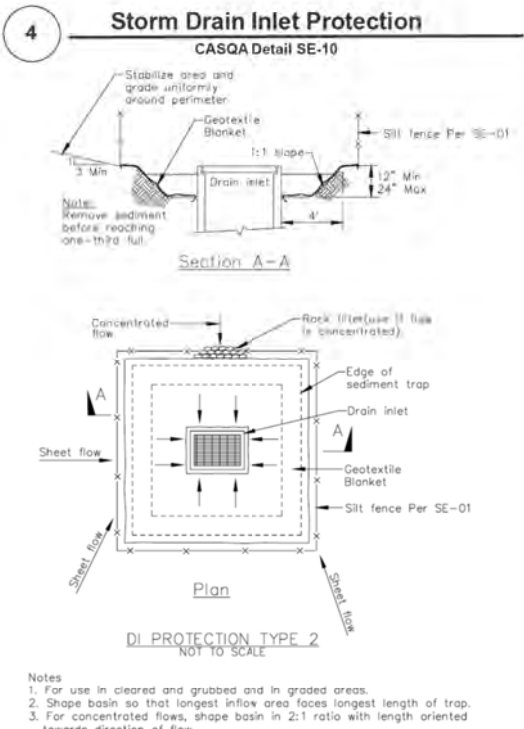
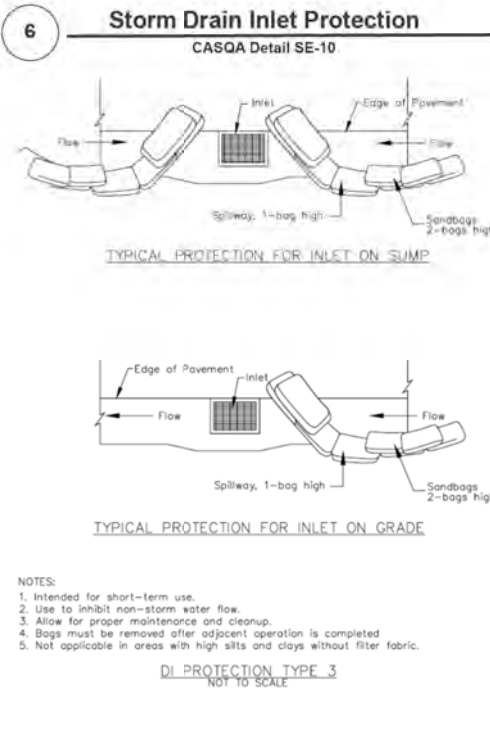
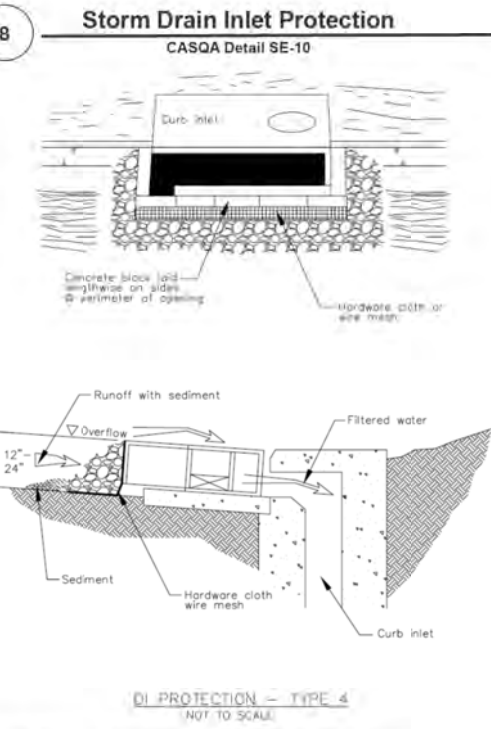
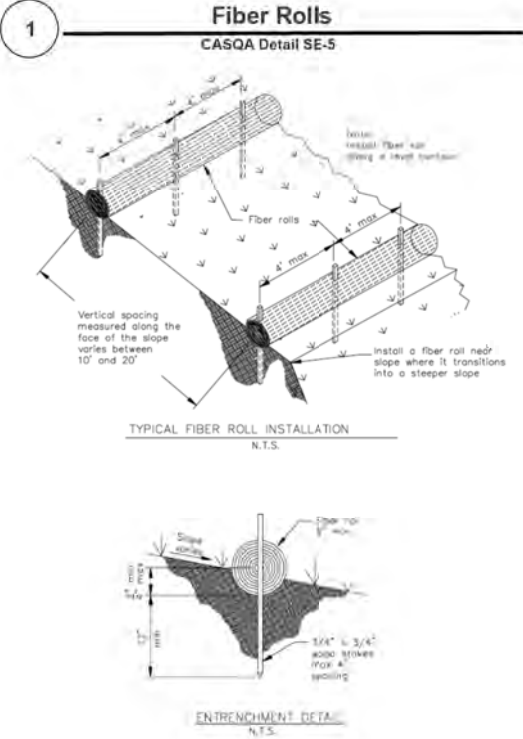
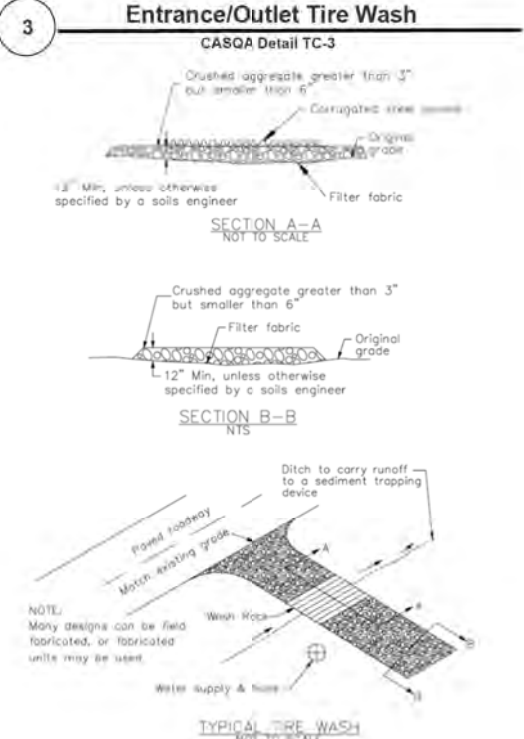
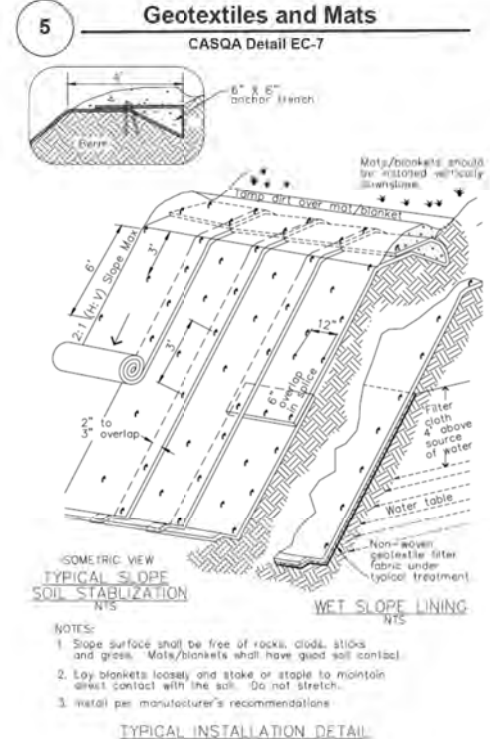
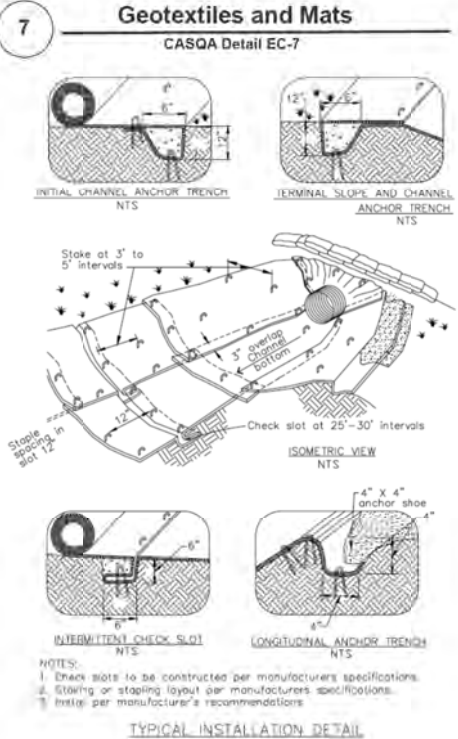
STANDARD EROSION CONTROL NOTES

- Sediment Control Management:**
 - Tracking Prevention & Clean Up:** Activities shall be organized and measures taken as needed to prevent or minimize tracking of soil onto the public street system. A gravel or proprietary device construction entrance/exit is required for all sites. Clean up of tracked material shall be provided by means of a street sweeper prior to an approaching rain event, or at least once at the end of each workday that material is tracked, or more frequently as determined by the County Inspector. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages B-31 to B-33) or latest.
 - Storm Drain Inlet and Catch Basin Inlet Protection:** All inlets within the vicinity of the project and within the project limits shall be protected with gravel bags placed around inlets or other inlet protection. At locations where exposed soils are present, staked fiber rolls or staked silt fences can be used. Inlet filters are not allowed due to clogging and subsequent flooding. Refer to Erosion & Sediment Control Field Manual, 4th Edition (pages B-49 to B-51) or latest.
 - Storm Water Runoff:** No storm water runoff shall be allowed to drain in to the existing and/or proposed underground storm drain system or other above ground watercourses until appropriate erosion control measures are fully installed.
 - Dust Control:** The contractor shall provide dust control in graded areas as required by providing wet suppression or chemical stabilization of exposed soils, providing for rapid clean up of sediments deposited on paved roads, furnishing construction road entrances and vehicle wash down areas, and limiting the amount of areas disturbed by clearing and earth moving operations by scheduling these activities in phases.
 - Stockpiling:** Excavated soils shall not be placed in streets or on paved areas. Borrow and temporary stockpiles shall be protected with appropriate erosion control measures (tarps, straw bales, silt fences, etc.) to ensure silt does not leave the site or enter the storm drain system or neighboring watercourse.
- Erosion Control:** During the rainy season, all disturbed areas must include an effective combination of erosion and sediment control. It is required that temporary erosion control measures are applied to all disturbed soil areas prior to a rain event. During the non-rainy season, erosion control measures must be applied sufficient to control wind erosion at the site.
- Inspection & Maintenance:** Disturbed areas of the Project's site, locations where vehicles enter or exit the site, and all erosion and sediment controls that are identified as part of the Erosion Control Plans must be inspected by the Contractor before, during, and after storm events, and at least weekly during seasonal wet periods. Problem areas shall be identified and appropriate additional and/or alternative control measures implemented immediately, within 24 hours of the problem being identified.
- Project Completion:** Prior to project completion and signoff by the County Inspector, all disturbed areas shall be reseeded, planted, or landscaped to minimize the potential for erosion on the subject site.
- It shall be the Owner's/Contractor's responsibility to maintain control of the entire construction operation and to keep the entire site in compliance with the erosion control plan.**
- Erosion and sediment control best management practices shall be operable year round or until vegetation is fully established on landscaped surfaces.**

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DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD00-G-035
SHEET NUMBER 31

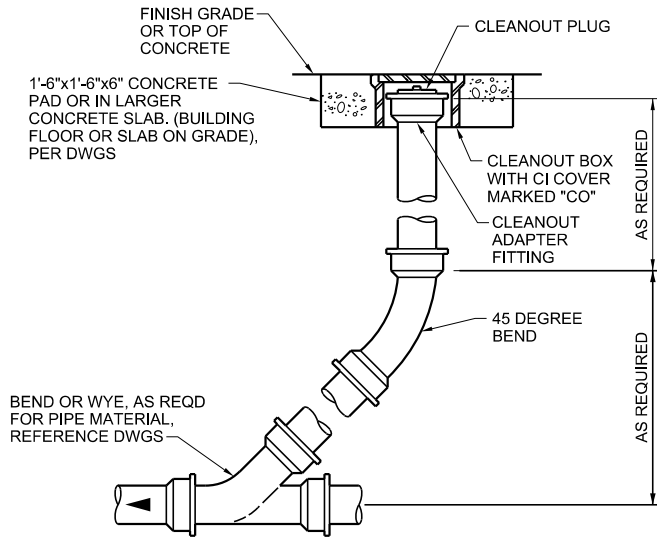


Source for Graphics: California Stormwater BMP Handbook, California Stormwater Quality Association, January 2003.
Available from www.cabmphandbooks.com.

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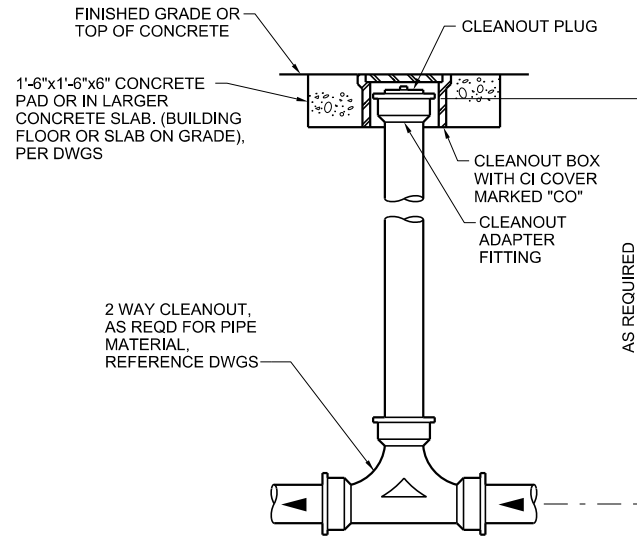


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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL STANDARD DETAILS 17			
DATE NOVEMBER 2019		PROJECT NUMBER 17-083	
DRAWING NUMBER WD00-G-036		SHEET NUMBER 32	



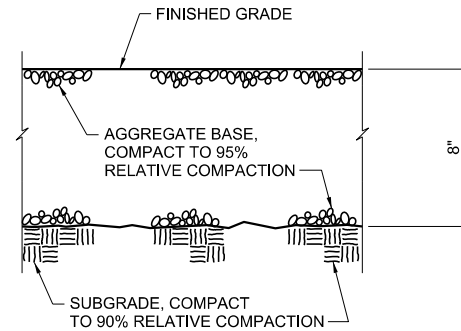
DRAIN LINE CLEANOUT
NTS

2130



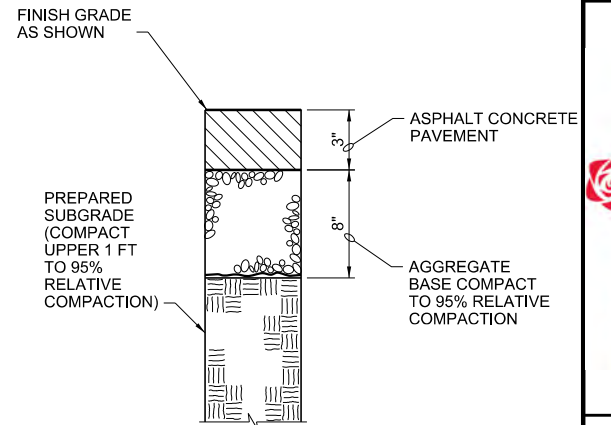
TWO WAY DRAIN LINE CLEANOUT
NTS

2132



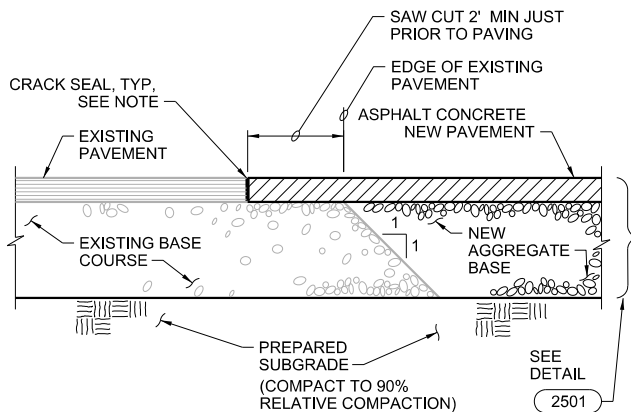
GRAVEL ROAD SURFACING
NTS

2500



ASPHALT CONCRETE PAVEMENT
NTS

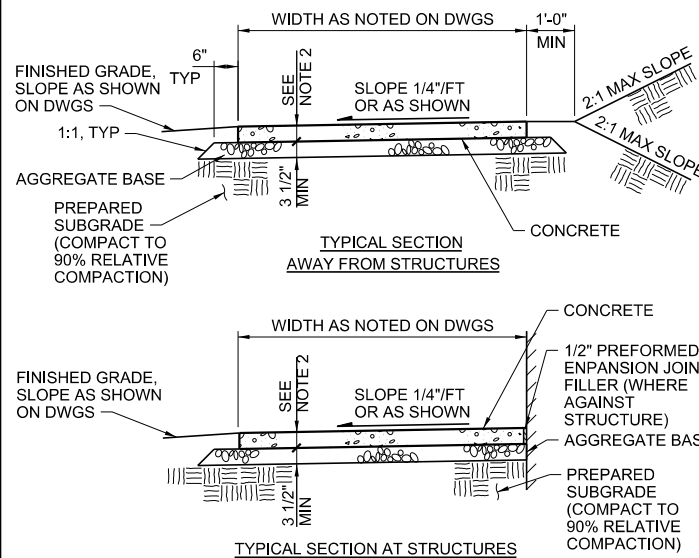
2501



- NOTES:**
1. PAINT EDGE OF EXISTING ASPHALT WITH TACK COAT PRIOR TO PAVING. CRACK SEAL JOINT AFTER PAVING OPERATION HAS BEEN COMPLETED.

PAVEMENT CONNECTION
NTS

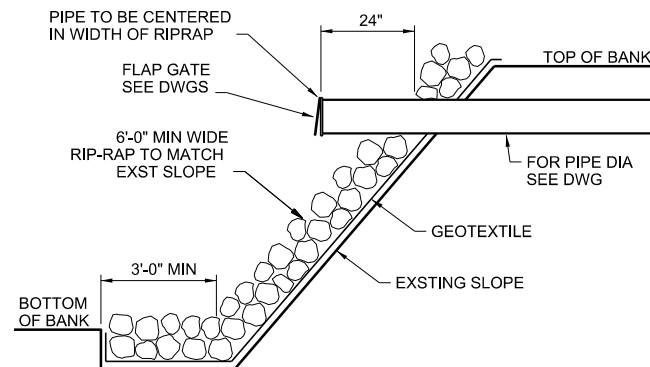
2502



- NOTES:**
1. SIDEWALKS 8 FEET AND WIDER SHALL HAVE A LONGITUDINAL CONTRACTION JOINT AT THE MIDPOINT. PROVIDE LATERAL CONTRACTION JOINTS AT EQUAL SPACING, NO MORE THAN 5'-0" BETWEEN JOINTS.
 2. CONCRETE DEPTH FOR STANDARD SIDEWALKS SHALL BE 4" MINIMUM, THICKNESS IN DRIVEWAY SHALL BE 6" MINIMUM.

CONCRETE SIDEWALK
NTS

2503



- NOTE:**
1. ROCK SLOPE PROTECTION SHALL CONFORM TO SECTION 72-2 OF THE CALTRANS STANDARD SPECIFICATIONS
 2. ROCK SLOPE PROTECTION SHALL BE GRADED FOR 1/4- TON, METHOD "B" PLACEMENT

**PIPE OUTLET W/
ROCK SLOPE PROTECTION**
NTS

2510

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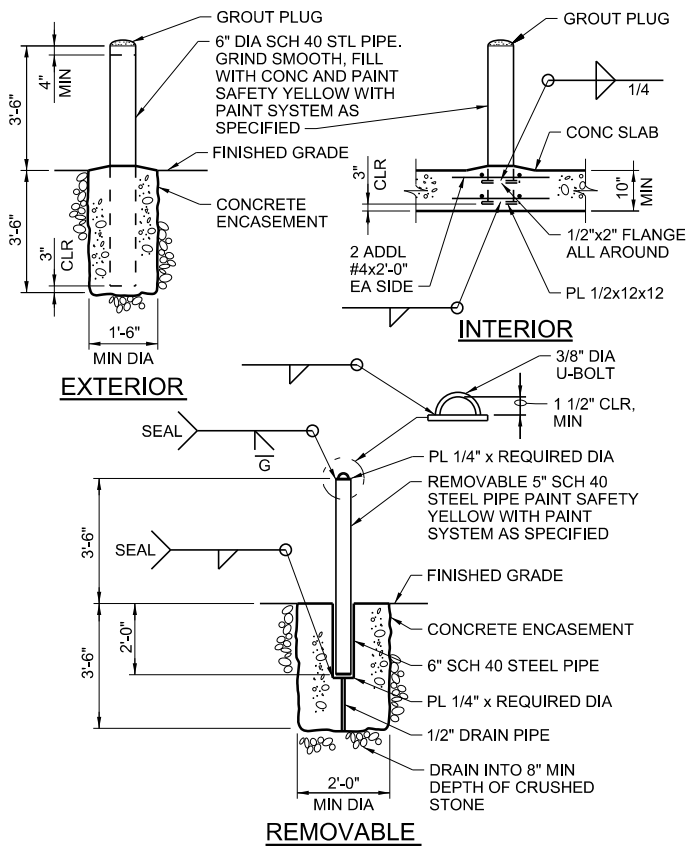


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CITY OF ROSEVILLE
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(PHASE 2)
ROSEVILLE, CALIFORNIA

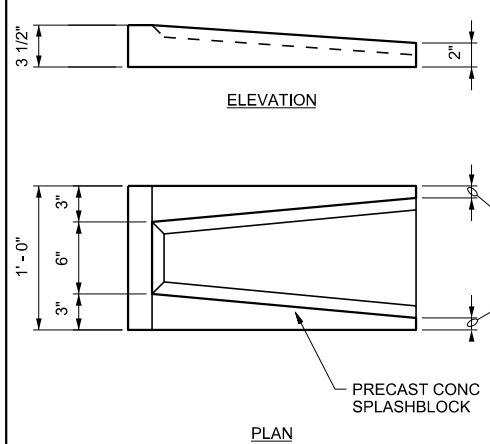
GENERAL
STANDARD DETAILS 18

DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD00-G-037
SHEET NUMBER 33



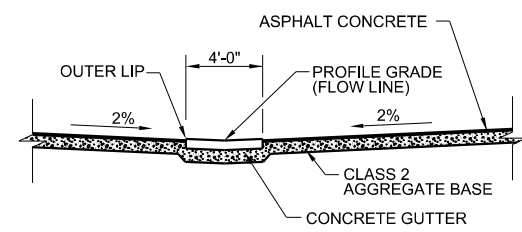
GUARD POST
NTS

2600

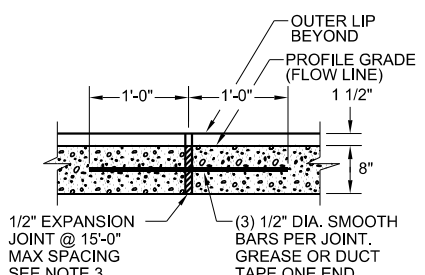


SPLASH BLOCK
NTS

2601



TYP. CROSS SECTION

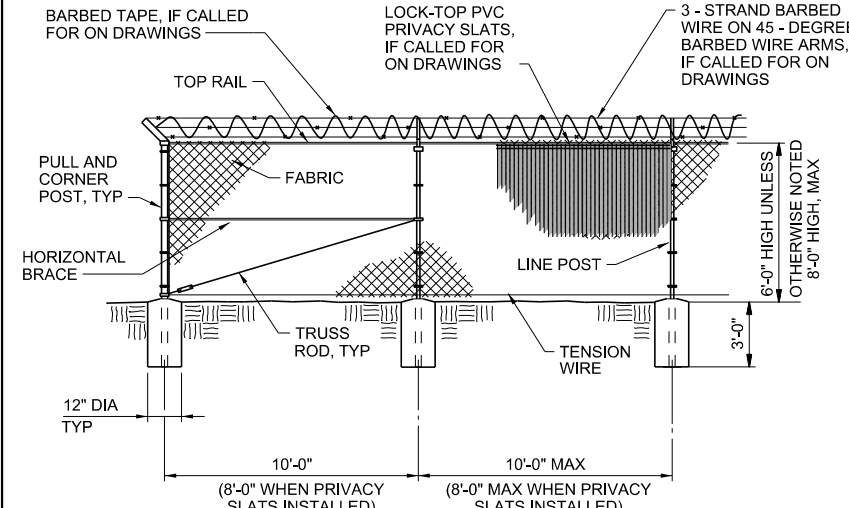


EXPANSION JOINT DETAIL

- NOTES**
1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROJECT SPECIFICATIONS.
 2. SURFACING AND BASE THICKNESS SHALL BE DETERMINED IN ACCORDANCE WITH PROJECT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.
 3. 1/2-INCH, PRE-MOLDED EXPANSION JOINT MATERIAL SHALL BE HELD FIRMLY IN PLACE PRIOR TO PLACING CONCRETE.

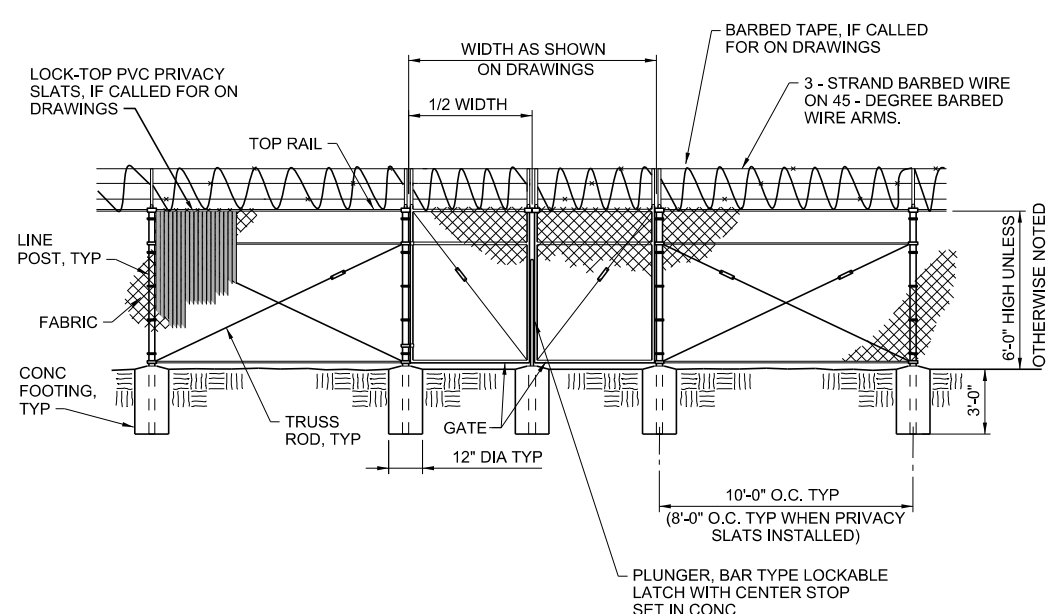
TYPICAL CONCRETE SWALE
NTS

2720



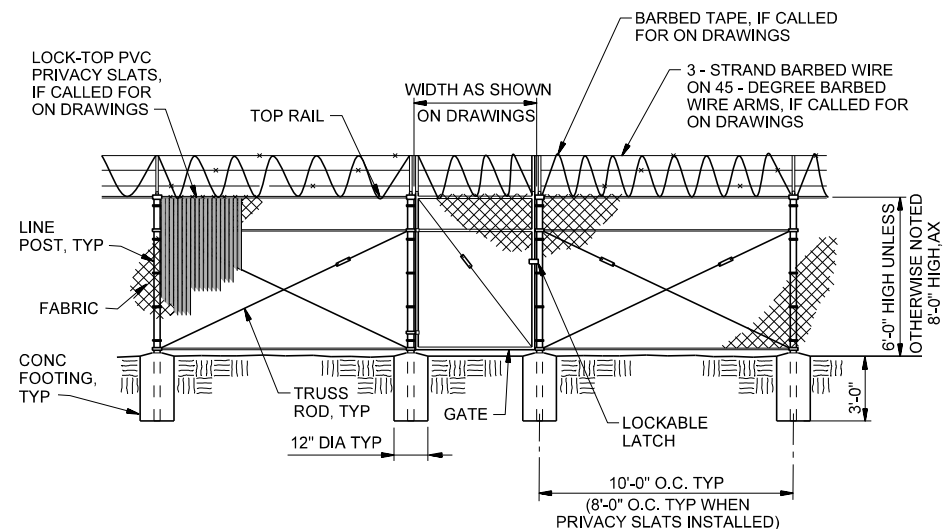
CHAINLINK FENCE
NTS

2800



CHAINLINK DOUBLE-LEAF GATE
NTS

2801



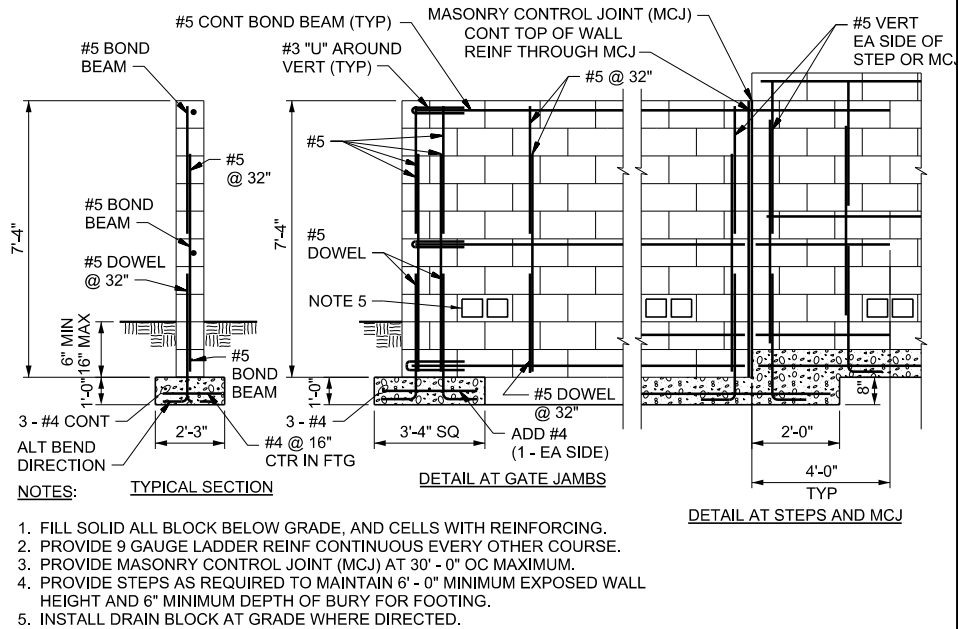
CHAINLINK SINGLE-LEAF GATE
NTS

2802

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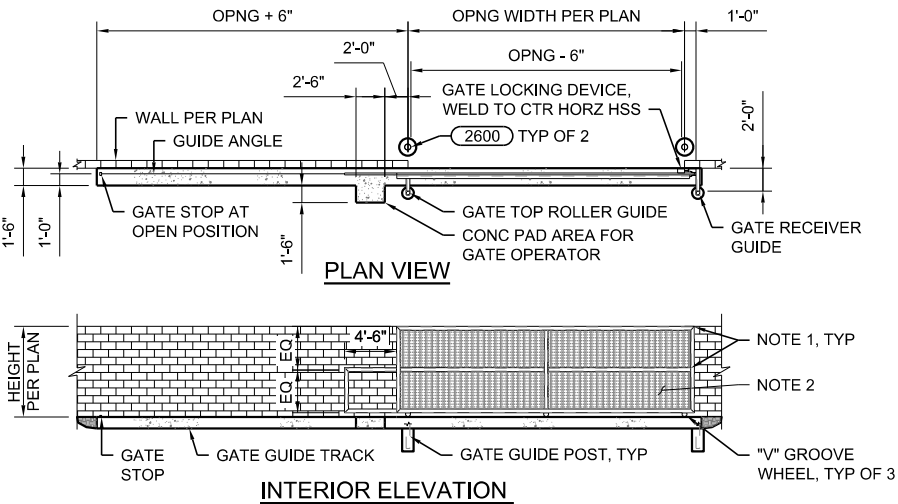


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GENERAL STANDARD DETAILS 19			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-G-038			
SHEET NUMBER 34			



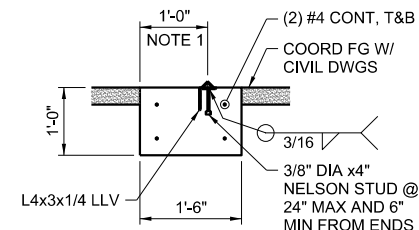
8 - INCH MASONRY WALL
NTS

2810

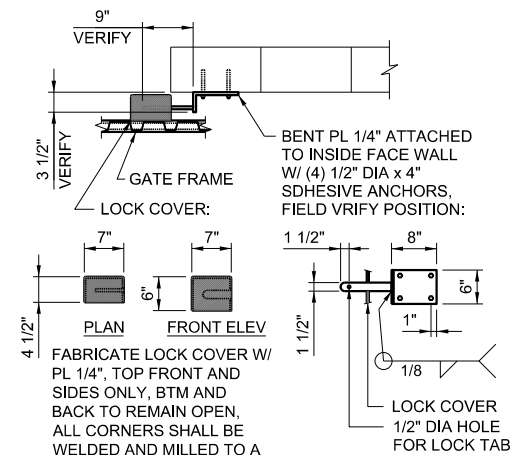


ROLLING FABRICATED STEEL GATE 1 OF 3
NTS

2815



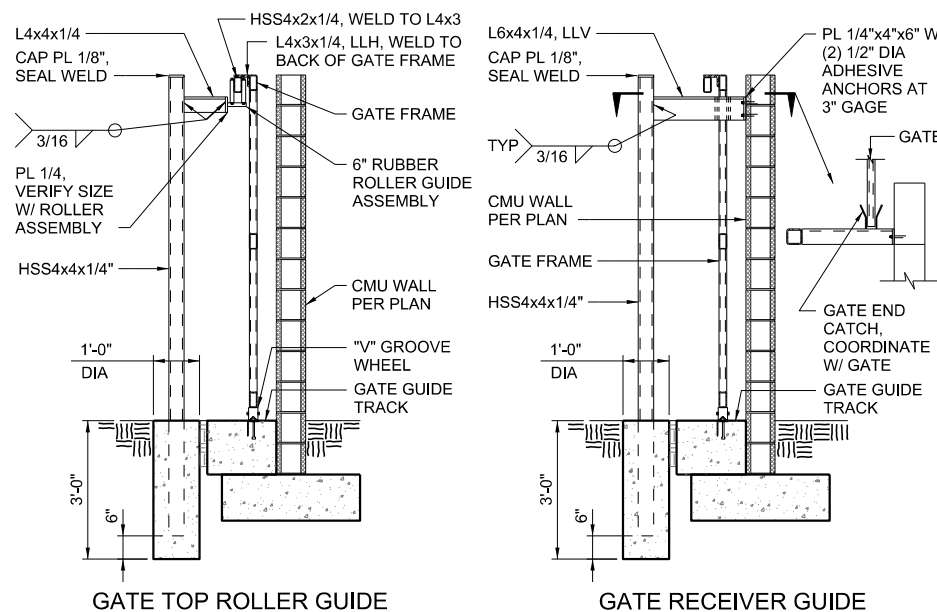
GATE GUIDE TRACK



GATE LOCKING DEVICE

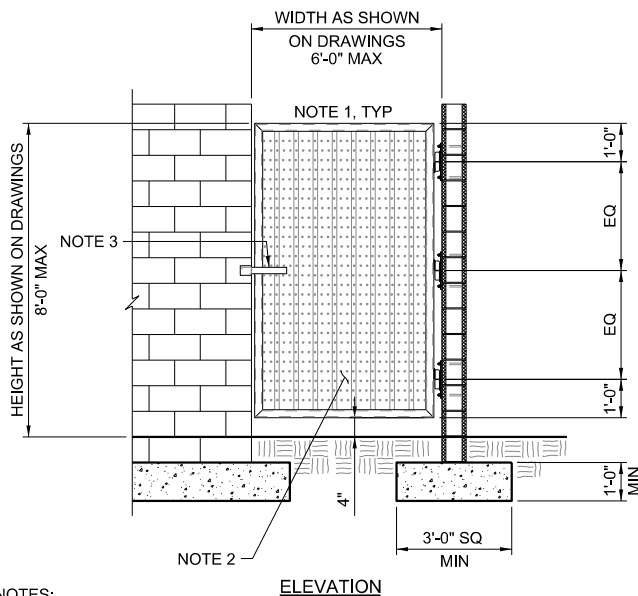
STEEL ROLLING GATE
NTS

2 OF 3 2815



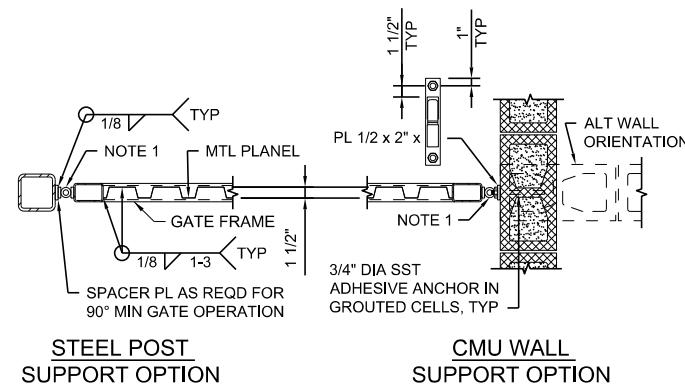
STEEL ROLLING GATE
NTS

3 OF 3 2815



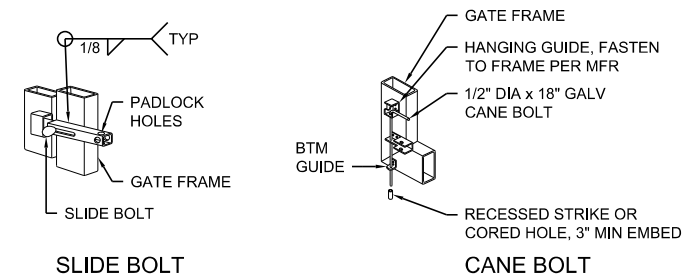
STEEL SINGLE-LEAF GATE
NTS

2817



STEEL POST SUPPORT OPTION

CMU WALL SUPPORT OPTION



SLIDE BOLT

CANE BOLT

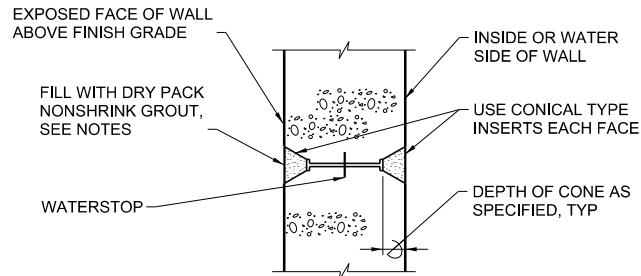
SINGLE-LEAF FABRICATED STEEL GATE
NTS

2819

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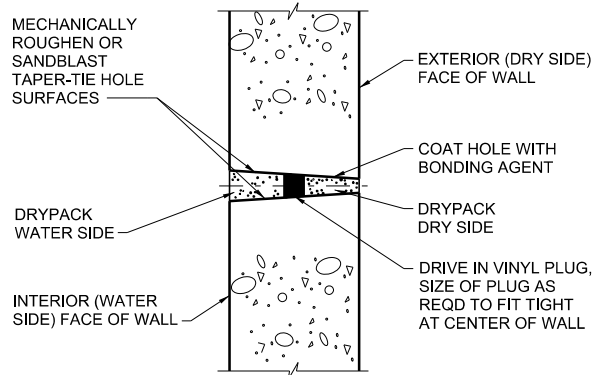
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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL STANDARD DETAILS 20			
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-G-039 SHEET NUMBER 35			



- NOTES:
1. THE SPACING OF FORM TIES ON EXPOSED PORTIONS OF WALLS SHALL BE APPROXIMATELY EQUAL HORIZONTALLY AND VERTICALLY AND SHALL BE UNIFORM IN EACH DIRECTION.
 2. DRY PACK METHOD SHALL BE AS SPECIFIED USING STEEL TOOLS.

FORM SNAP-TIE HOLE
NTS

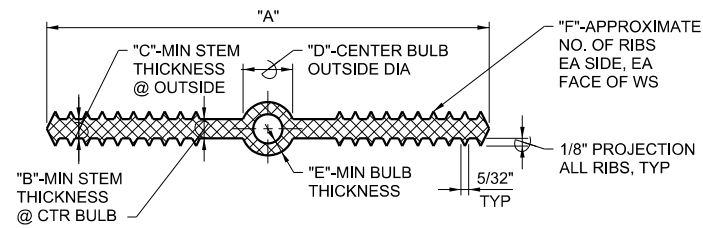
3051



- NOTE:
MINIMUM HOLE DIAMETER AT EXTERIOR FACE = 1". TAPER HOLE SO THAT MINIMUM HOLE DIAMETER AT INTERIOR FACE = 1 1/4"
- CONSTRUCTION STEPS:
1. SANDBLAST OR MECHANICALLY ROUGHEN WITH ELECTRIC EQUIPMENT.
 2. DRIVE IN VINYL PLUG.
 3. COAT HOLE ON DRY SIDE OF PLUG AND WHILE BONDING AGENT IS TACKY, DRYPACK.
 4. COAT HOLE ON WATER SIDE OF PLUG AND WHILE BONDING AGENT IS TACKY, DRYPACK.
 5. USE TYPE II, NON-SHRINK GROUT AS SPECIFIED.

ALTERNATE FORM TIE-THROUGH BOLT
NTS

3052

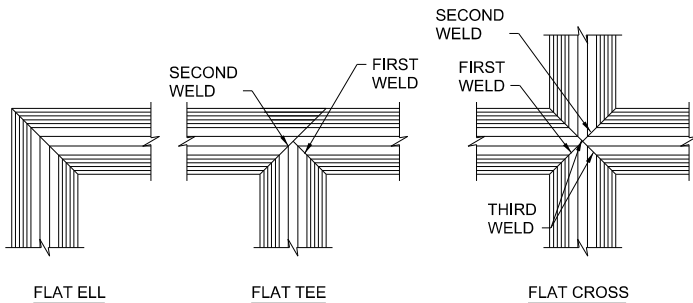
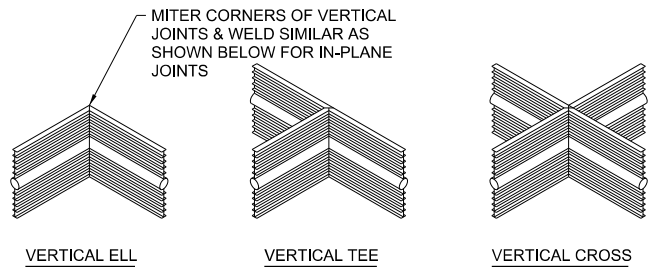


SIZE	"A"	"B"	"C"	"D"	"E"	"F"
4"x3/16"	4"	3/16"	3/16"	3/4"	1/4"	4
6"x3/8"	6"	3/8"	3/8"	7/8"	1/4"	6
9"x3/8"	9"	3/8"	3/8"	1"	1/4"	8

- NOTES:
1. NON-ROUND CENTER BULBS SHALL HAVE A MINIMUM OUTSIDE DIMENSION OF 'D'.
 2. SEE SPLICE DETAIL (3111)
 3. BULB TYPE WATERSTOP SHOWN IS REQUIRED FOR EXPANSION AND CONTROL JOINTS. SIMILAR WATERSTOPS WITHOUT CENTER BULB MAY BE SUBSTITUTED AT CONSTRUCTION JOINTS.
 4. USE 6 INCH WATERSTOPS IN ALL CONSTRUCTION JOINTS UNLESS SPECIFICALLY SHOWN OTHERWISE.

PLASTIC WATERSTOP
NTS

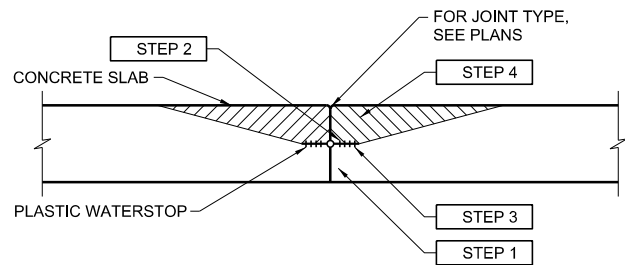
3101



NOTE:
ALL WELDS SHALL BE PER WATERSTOP MANUFACTURER'S RECOMMENDATIONS.

WATERSTOP JOINTS
NTS

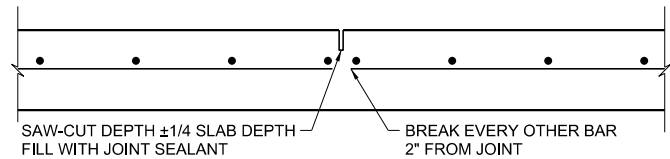
3111



- NOTES:
- PLACEMENT SEQUENCE SHOWN REQUIRED ON BOTH SIDES OF JOINTS, IN ALL CONCRETE SLAB AND FOOTING POURS WITH HORIZONTALLY PLACED PLASTIC WATERSTOPS.
- STEP 1
PLACE CONCRETE BELOW WATERSTOP FIRST, REMOVE ALL AIR VOIDS BY VIBRATING THOROUGHLY.
- STEP 2
TO CONFIRM THERE ARE NO AIR VOIDS, LIFT WATERSTOP. A CONTINUOUS IMPRESSION OF THE WATERSTOP, INCLUDING EDGE OF BULB, SHOULD BE VISIBLE IN THE FRESH CONCRETE. CONTINUE THIS PROCEDURE ALONG THE ENTIRE POURED JOINT, END TO END. IF A CONTINUOUS IMPRESSION IS CONFIRMED, PROCEED WITH STEP 4. IF A VOID LARGER THAN 1/4 INCH IN DIAMETER IS PRESENT ANYWHERE IN THE WATERSTOP IMPRESSION, PROCEED WITH STEP 3.
- STEP 3
IF A VOID LARGER THAN 1/4 INCH IN DIAMETER IS PRESENT IN THE WATERSTOP IMPRESSION, ADDITIONAL CONCRETE SHALL BE PLACED UNDER THE WATERSTOP, VIBRATED, AND STEP 2 REPEATED.
- STEP 4
FINISH PLACING CONCRETE ABOVE THE WATERSTOP TO TOP OF SLAB.
- USE IN CONJUNCTION WITH ALL TYPES OF SLAB AND FOOTING JOINTS. CROSS REFERENCE ON JOINT DETAILS.

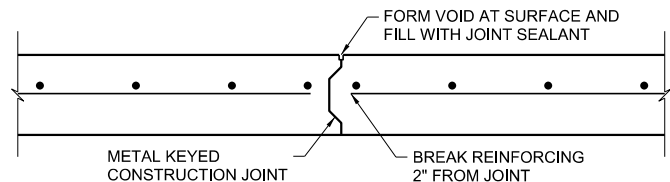
CONCRETE PLACEMENT SEQUENCE
NTS

3133

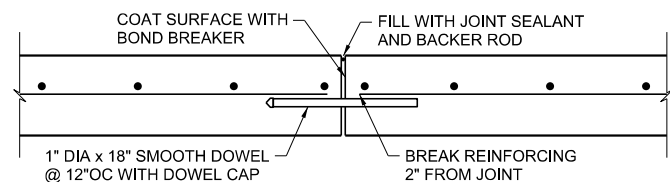


- NOTES:
1. SAW-CUT SAME DAY AS POUR AS SOON AS SPALLING WILL NOT OCCUR.
 2. CONTRACTOR SHALL USE STRING LINE OR OTHER POSITIVE MEANS TO PLACE REINFORCING AND LOCATE SAWCUT.
 3. BREAK REINF AND ADD SPLICE BARS SIMILAR AT DOUBLE MAT.
 4. 3/8" TOOLED JOINT MAY BE USED IN PLACE OF SAWN JOINT.

SLAB ON GRADE SAWN JOINT, TYPE A



SLAB ON GRADE CONSTRUCTION JOINT, TYPE B



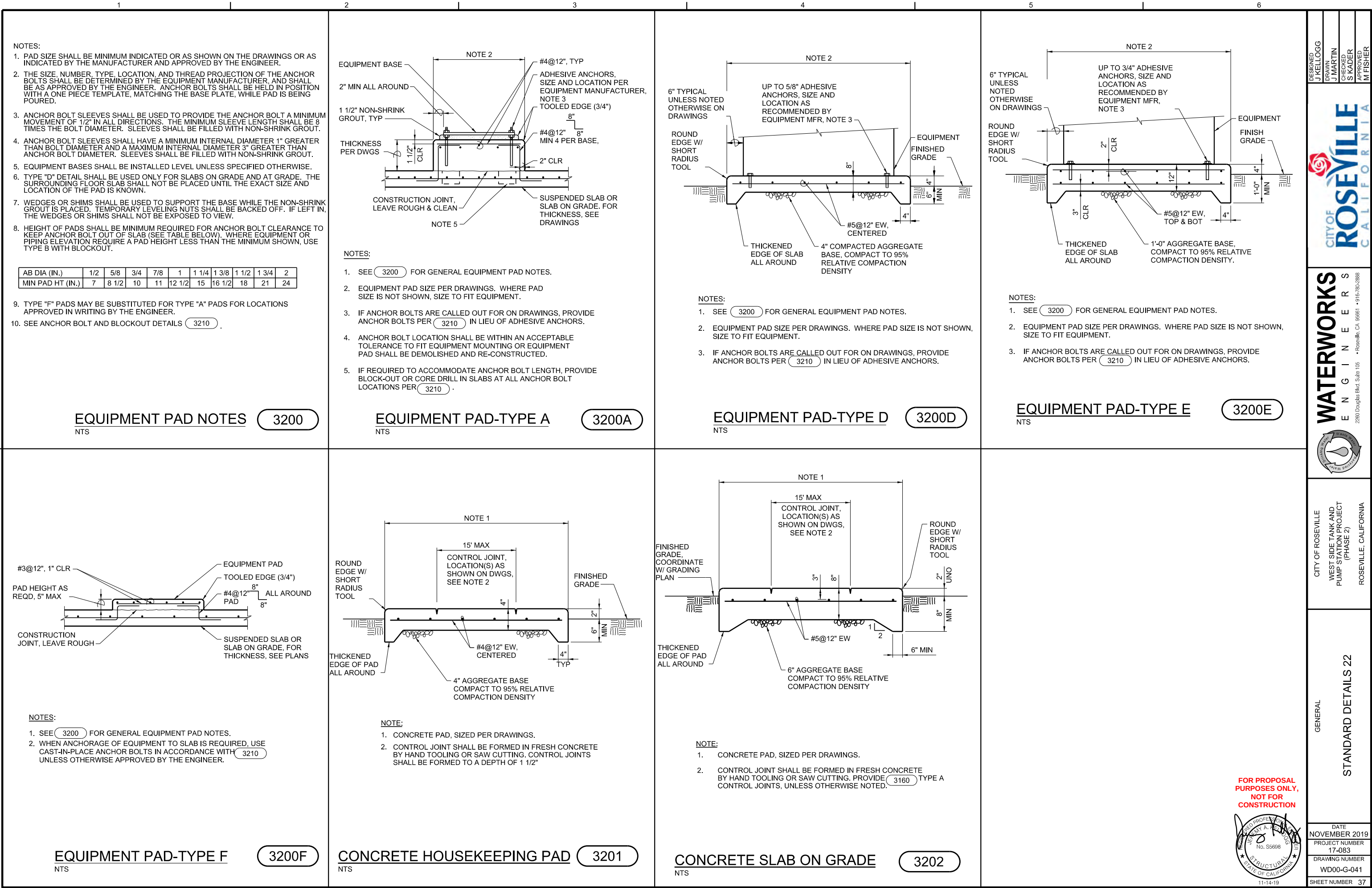
SLAB ON GRADE CONSTRUCTION JOINT, TYPE C

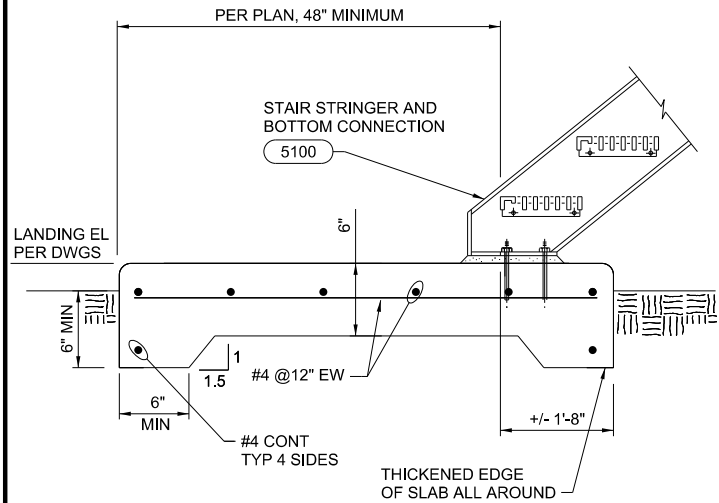
CONC SLAB ON GRADE JOINTS
NTS

3160

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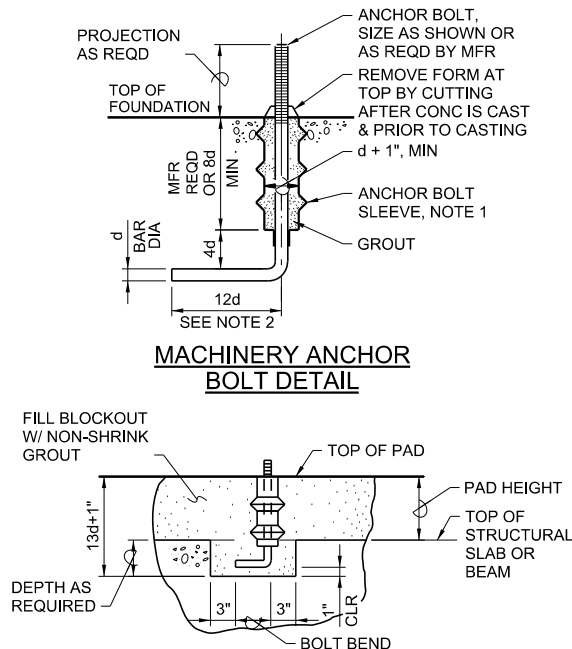


NOTE:
LANDING WIDTH MINIMUM OF CLEAR STAIR WIDTH PLUS 1'-0".

CONCRETE STAIR LANDING

NTS

3203

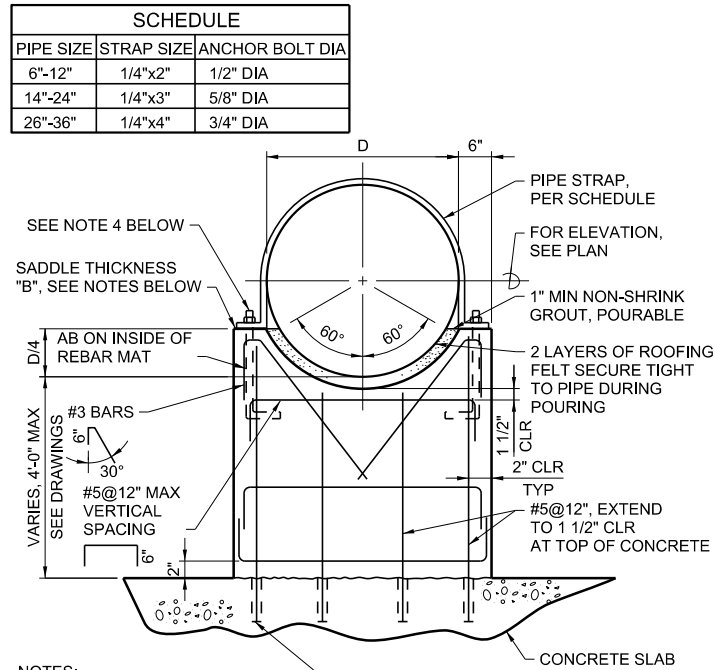


NOTES:
1. ANCHOR BOLT SLEEVE BY THE ANCHOR BOLT SLEEVE COMPANY, SHELTON, CT, OR EQUAL.
2. 3d WHERE MANUFACTURER VERIFIES NO BOLT PULLOUT RESISTANCE REQUIRED.

ANCHOR BOLT DETAILS

NTS

3210

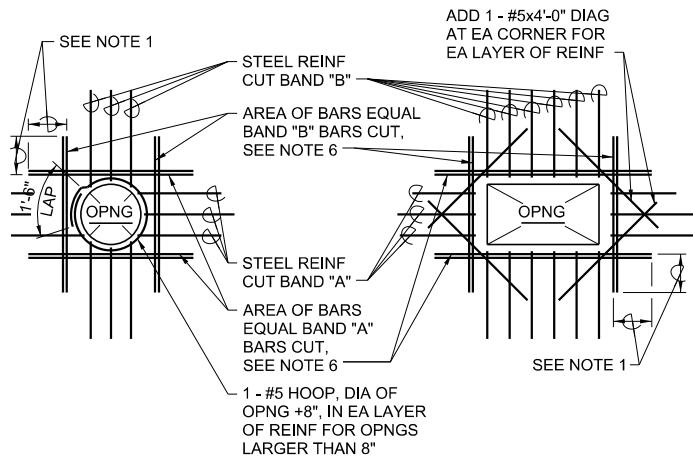


NOTES:
1. SADDLE THICKNESS, "B"
B = 6" WHEN: D < 12"
B = 8" WHEN: 12" ≤ D < 24"
B = 10" WHEN: 24" ≤ D < 36"
B = 12" WHEN: 36" ≤ D < 48"
FOR "B"=10" OR THICKER, USE 2 LAYERS OF REINFORCING, TURN HORIZONTAL BARS 90° TO HOOK AROUND VERTICALS, 1 1/2" CLEAR OF CONCRETE.
2. FORM 3/4" BEVEL ON ALL EXPOSED CORNERS OF SUPPORT.
3. PIPE STRAP ANCHOR BOLTS SHALL HAVE A MINIMUM EMBEDMENT DEPTH OF 8 X D.
4. MAXIMUM DISTANCE BETWEEN SUPPORTS 10'-0".

CONCRETE PIPE SUPPORT

NTS

3300

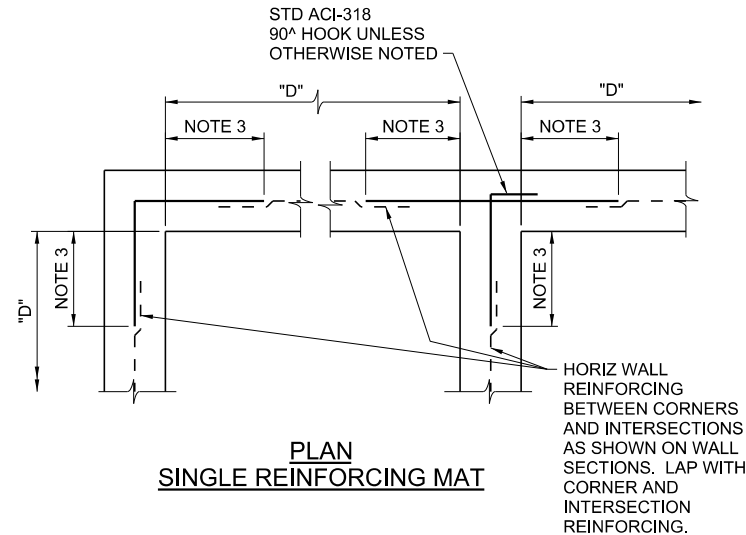


NOTES:
1. PROVIDE MINIMUM LAP, SEE GENERAL STRUCTURAL NOTES. WHERE FULL LAP LENGTH CANNOT BE ACHIEVED DUE TO SLAB OR WALL EDGE, TERMINATE BARS WITH A STANDARD 90 DEGREE BEND 2 INCHES CLEAR OF SLAB OR WALL EDGE. ROTATE HOOKS AS REQUIRED TO MAINTAIN CONCRETE COVER.
2. TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS OF BELOW GRADE AND HYDRAULIC STRUCTURES AND ALL STRUCTURAL CONCRETE SLABS UNLESS INDICATED OTHERWISE ON PLANS.
3. DO NOT WELD REINFORCEMENT TO PIPE SLEEVES AND INSERTS.
4. PROVIDE A MINIMUM OF 2 "A" BARS AND 2 "B" BARS EACH SIDE OF OPENING (1 EACH FACE).
5. FOR OPENINGS LARGER THAN 8'-0", REINFORCE SAME AS FOR 8'-0" OPENINGS.
6. SPACE AT 3 BAR DIAMETERS (OR 3" MINIMUM) ON CENTER.

OPENING REINFORCING

NTS

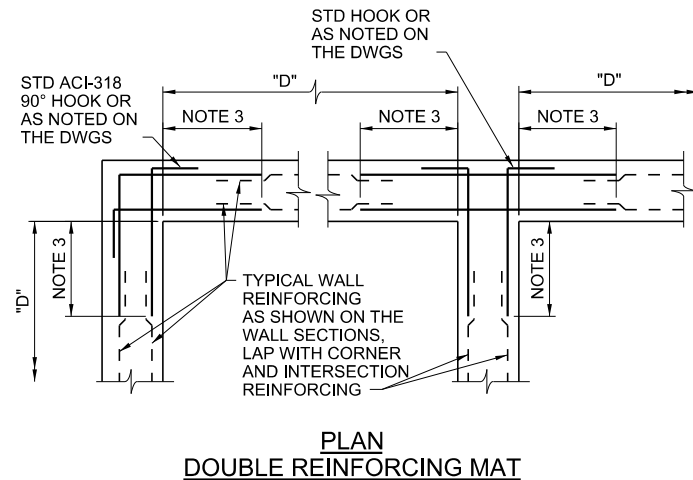
3301



NOTES:
1. TYPICAL HORIZONTAL WALL CORNER AND INTERSECTION REINFORCING LAYOUT IS SHOWN. FOR SIZE AND SPACING, SEE PLANS.
2. WHERE THE CORNER OR INTERSECTION REINFORCING SIZE AND SPACING IS NOT SHOWN, NOTED OR TABULATED ON THE PLANS, THE SIZE AND SPACING SHALL BE THE SAME AS THE WALL HORIZONTAL REINFORCING SHOWN ON THE WALL SECTIONS OR AS NOTED FOR THE REINFORCING BETWEEN THE CORNERS OR INTERSECTIONS.

TYPICAL WALL CORNER AND INTERSECTION REINFORCING

NTS



NOTES:
3. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESSER OF D/4, 8 FEET, OR 1.0 TIMES THE HEIGHT OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 2.0 FEET.
4. D = LENGTH OF WALL PARALLEL TO THE BAR LENGTH IN QUESTION.
5. USE THE LAP LENGTH AS REQUIRED FOR THE SMALLER OF THE TWO REINFORCING BARS BEING SPLICED, SEE CONCRETE REINFORCING NOTES.

PLAN DOUBLE REINFORCING MAT

3303

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DRAWN
J MARTIN
CHECKED
S KADER
APPROVED
M FISHER



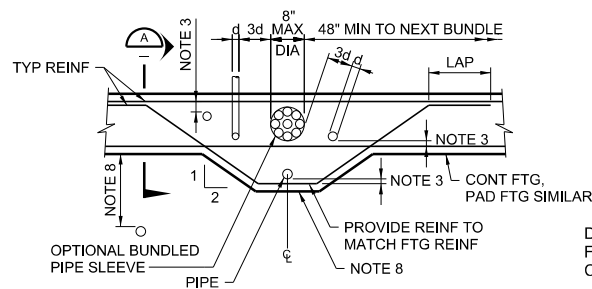
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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

GENERAL
STANDARD DETAILS 23

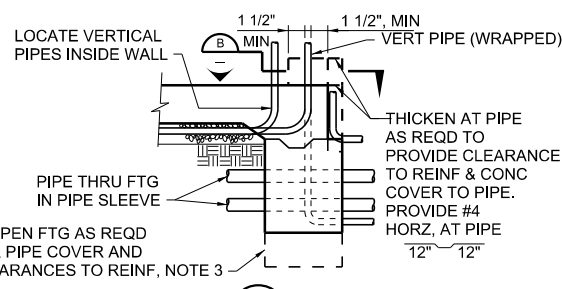
DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD00-G042
SHEET NUMBER 38



- NOTES:
- PIPE = ANY PENETRATION THRU OR EMBEDDED IN FOUNDATION.
 - ALL PIPES THROUGH FOOTINGS TO BE WRAPPED OR SLEEVED AS FOLLOWS:
 - SLEEVES: PROVIDE 1" MIN CLR ALL AROUND O.D. PIPE TO I.D. SLEEVE, UNO.
 - WRAPPED VERTICAL PIPES: PROVIDE 1/8" NOMINAL SHEET FOAM WITH (3) WRAPS MINIMUM, UNO.
 - WRAPPED HORIZONTAL PIPES: PROVIDE 1/8" NOMINAL SHEET FOAM WITH (8) WRAPS MINIMUM, UNO.
 - UNDERGROUND FIRE LINES 4" AND LARGER:
 - SLEEVES: PROVIDE 2" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE
 - WRAPPED: PROVIDE 1/8" NOMINAL SHEET FOAM WITH (16) WRAPS MIN.
 - WRAPPED & SLEEVED PIPES SHALL HAVE 1 1/2" MIN CLEAR TO REINF STEEL. MIN CONC COVER AT PIPES TO BE 3".
 - CLEARANCE BETWEEN PIPES TO BE 3d MIN TYP. WITH A MAXIMUM OF (8) PIPES PER 48". GROUPS OF PIPES MAY BE BUNDLED AS SHOWN, EXCEPT IN PAD FOOTINGS.
 - NO PIPE TO RUN PARALLEL IN FOOTINGS, STEM OR CURB.
 - PVC CONDUIT (PIPE) EMBEDDED IN CURB/STEM MAY BE WIRED TIED TO HORIZ REINF.
 - NO HORIZONTAL PIPES ALLOWED THROUGH FOOTING WITH 2'-0" EACH SIDE OF HOLD-DOWNS OR STEEL COLUMNS. NO VERTICAL PIPES ALLOWED IN FOOTINGS AT BRACED FRAMES.
 - PROVIDE 18" MIN OF COMPACTED FILL ABOVE PIPES UP TO 12" DIA, FOR LARGER PIPES INCREASE COMPACTED FILL DEPTH 1'-0" FOR EACH 6" INCREASE IN PIPE DIAMETER. OTHERWISE DEEPEN THE FOOTING AS SHOWN.

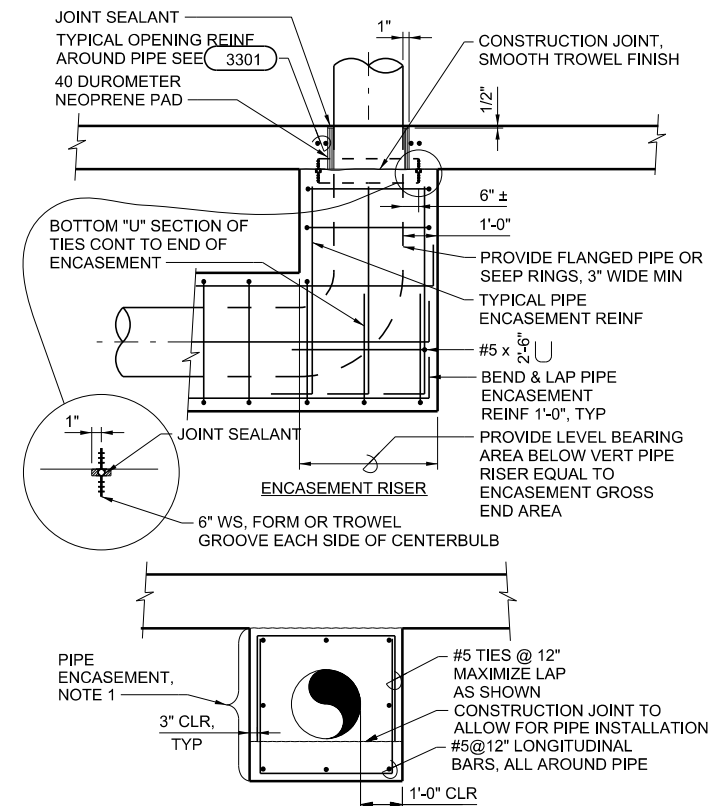
PIPES THRU FOOTINGS
NTS

3305



GENERAL PIPE ENCASEMENT
NTS

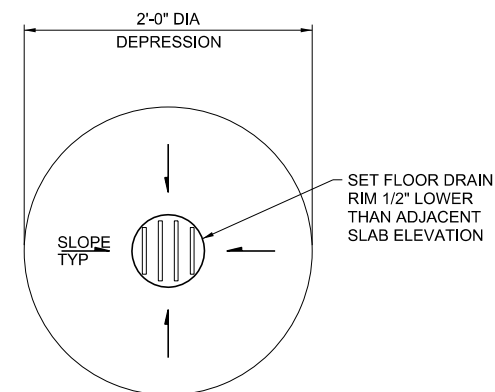
3311



- NOTES:
- EXTEND PIPE ENCASEMENT TO BOTTOM OF SLAB IF BOTTOM OF SLAB IS WITHIN 1-FOOT OF TOP OF PIPE ENCASEMENT. OTHERWISE, PROVIDE ENCASEMENT ONLY WITH ENCASEMENT RISER WHERE PIPE PENETRATES SLAB.

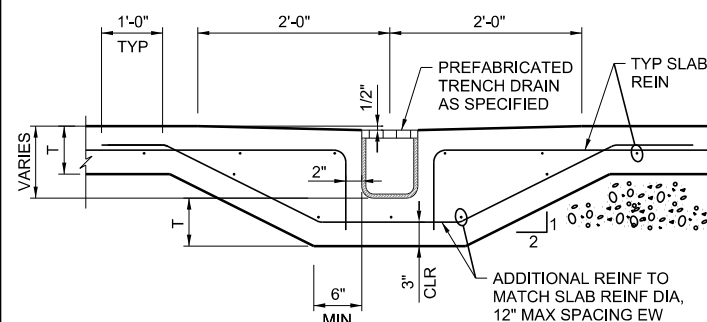
PIPE ENCASEMENT
NTS

3312

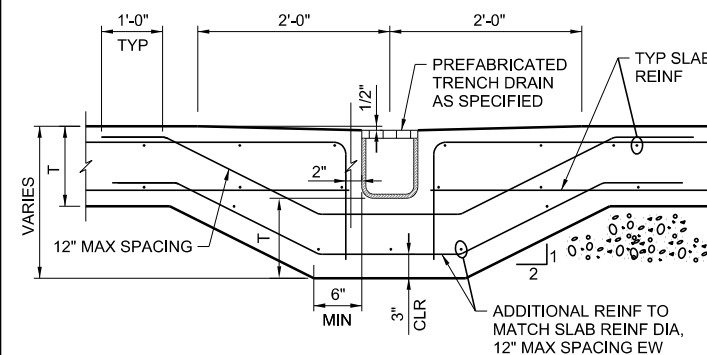


FLOOR DRAIN
NTS

3600



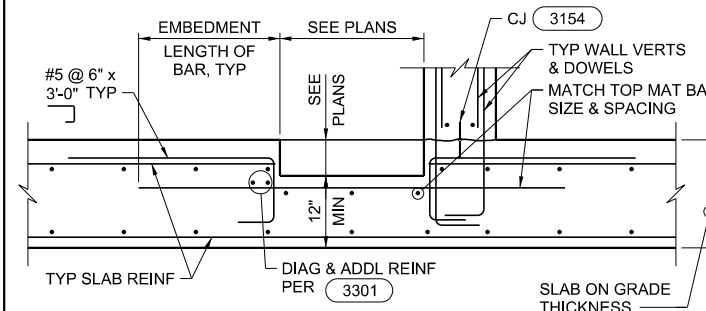
SLAB WITH SINGLE MAT REINFORCING



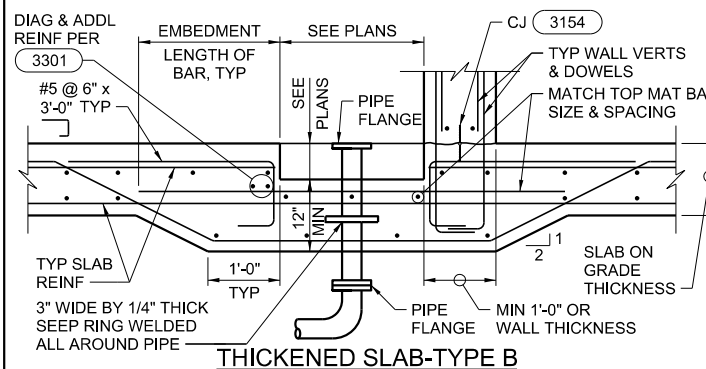
SLAB WITH DOUBLE MAT REINFORCING

THICKENED SLAB AT TRENCH DRAIN
NTS

3601



TYPICAL SLAB-TYPE A



THICKENED SLAB-TYPE B

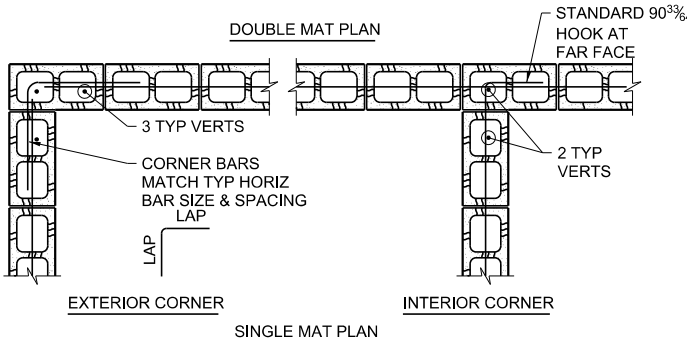
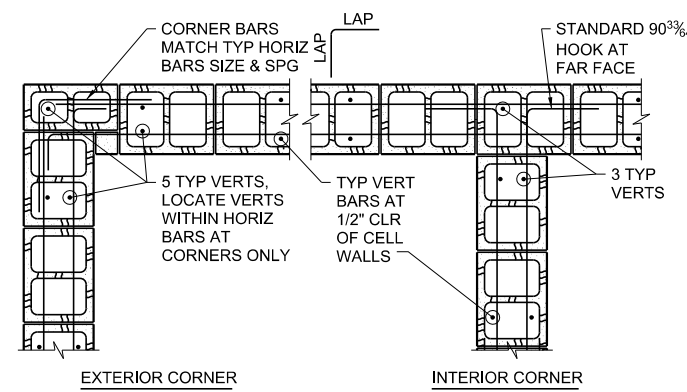
- NOTES:
- REBAR LOCATION SHALL ACCOMMODATE GRATING CONNECTIONS WHERE REQUIRED. SEE DETAIL 5400.

IN-SLAB SUMP REINFORCING
NTS

3610

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CONSTRUCTION



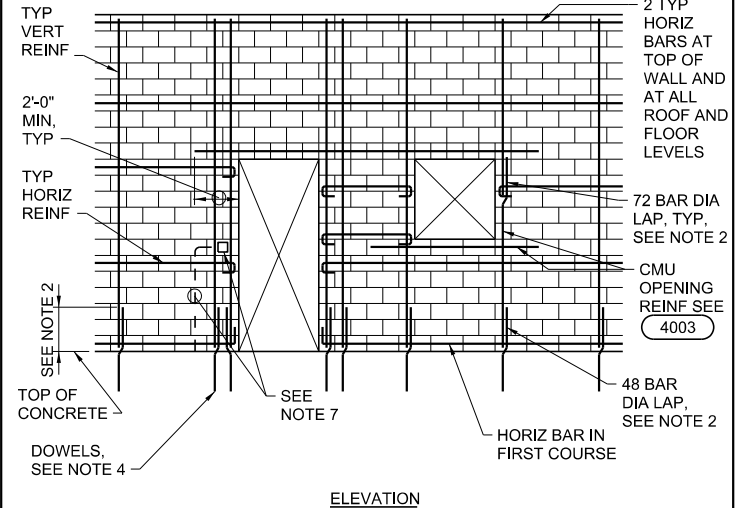


NOTES:
1. LAP=48 BAR DIAMETERS OR 2'-0" MINIMUM UNLESS OTHERWISE NOTED.
2. PROVIDE A STANDARD 90° HOOK EACH END ON ANY HORIZONTAL BAR BETWEEN OPENINGS, CONTROL JOINTS, OR CORNERS LESS THAN 6'-0" IN LENGTH.

CMU WALL CORNERS

NTS

4001

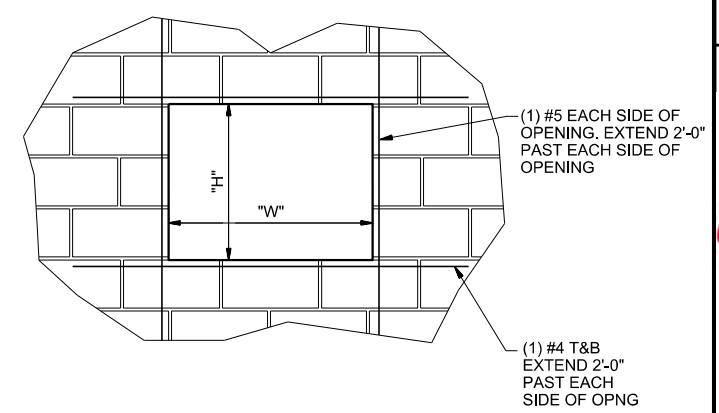


NOTES:
1. FOR TYPICAL WALL REINFORCING, SEE WALL SECTIONS AND DETAILS FOR EACH FACILITY.
2. LAP VERTICAL REINFORCING WITH WALL DOWELS 48 BAR DIAMETERS (2'-0" MIN), LAP ALL OTHER VERTICAL BARS 72 BAR DIAMETERS.
3. STAGGER SPLICES IN ADJACENT HORIZONTAL BARS IN THE SAME COURSE BY 2'-0".
4. PROVIDE DOWEL BARS IN FOUNDATION TO MATCH ALL VERTICAL REINFORCING.
5. FOR ADDED REINFORCING AT WALL INTERSECTIONS AND CORNERS, SEE 4001.
6. SOLID GROUT ALL CMU WALLS UNLESS NOTED OTHERWISE.
7. DO NOT PLACE VERTICAL CONDUIT IN THE SAME CELL AS VERTICAL REINFORCING.

REINFORCED CMU WALL

NTS

4002

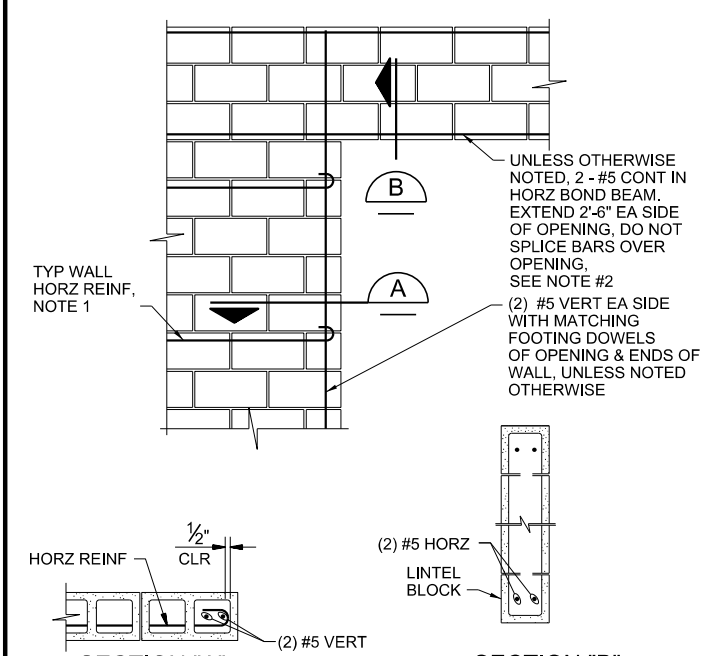


NOTES:
1. THIS DETAIL APPLICABLE WHERE OPNG LESS THEN 3'-0" IN ANY DIMENSION. SEE DETAIL 4004 FOR LARGER OPENINGS.
2. TERMINATE HORZ REINF WITH 180° HOOK AT WALL ENDS AND CMU CONTROL JOINTS PER DETAIL.

CMU OPENINGS LESS THAN 3'-0"

NTS

4003

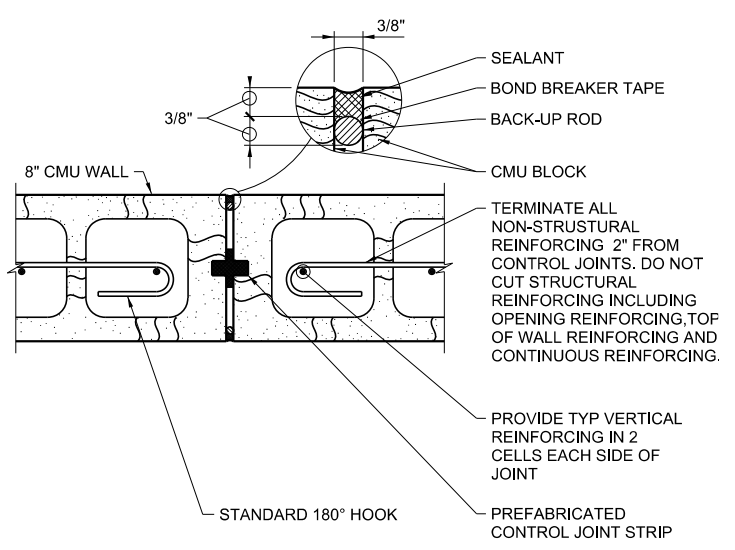


NOTES:
1. TERMINATE HORZ REINF WITH 180° HOOK AT WALL ENDS, JAMB OPENINGS AND CMU CONTROL JOINTS.
2. PLACE (2) #5 HORZ AT WINDOW SILLS, SIM TO TOP OF OPENING.

CMU OPENINGS GREATER THAN 3'-0"

NTS

4004



NOTE:
12" CMU WALL WITH 2 LAYERS OF REINFORCING IS SIMILAR.

CMU CONTROL JOINT

NTS

4100

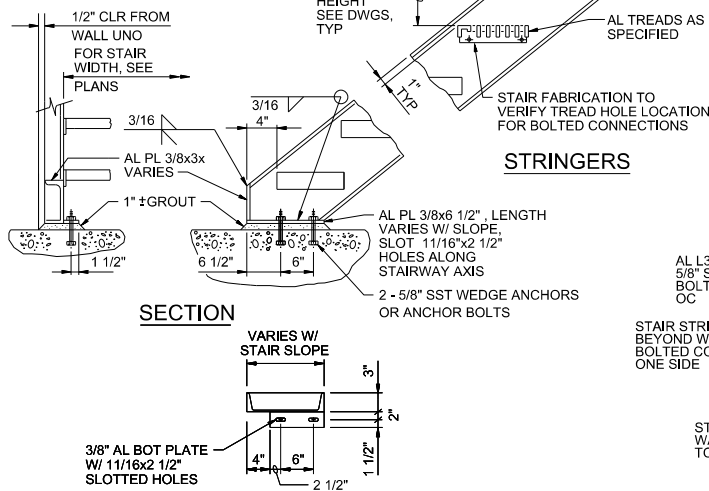
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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL STANDARD DETAILS 25			
DATE NOVEMBER 2019		PROJECT NUMBER 17-083	
DRAWING NUMBER WD00-G-044		SHEET NUMBER 40	

STAIRWAY WIDTH	BEARING BARS
2'-3" OR LESS	1"x3/16"
2'-9" OR LESS	1 1/4"x3/16"
3'-5" OR LESS	1 1/2"x3/16"
4'-2" OR LESS	1 3/4"x3/16"

- NOTES:
1. PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE AS SPECIFIED.
 2. GRIND EXPOSED FACES ONLY.
 3. STAIR HANDRAIL NOT SHOWN FOR CLARITY, PROVIDE STAIR HANDRAIL BOTH SIDES.
 4. FABRICATOR TO COORDINATE BOLTED TREADS AND RAIL POST CONNECTIONS

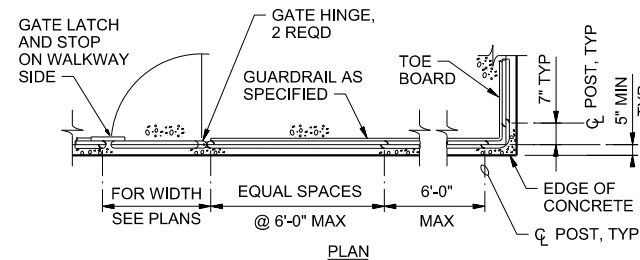


PLAN
BOTTOM

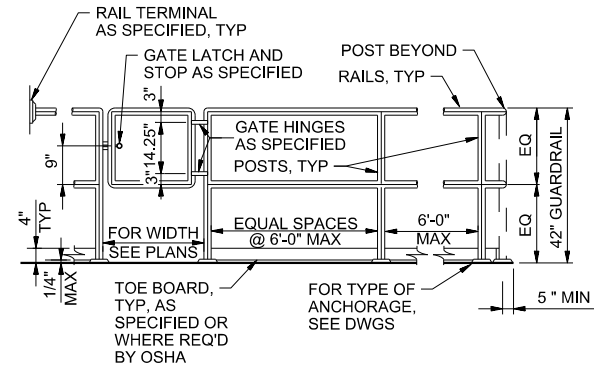
ALUMINUM STAIRS

NTS

5100



PLAN



ELEVATION

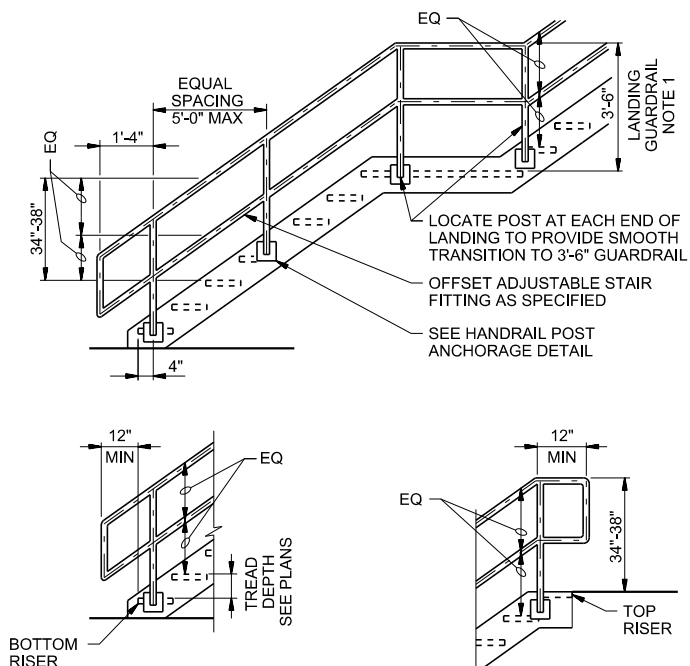
NOTE:

1. FOR GUARDRAIL MATERIAL REFERENCE DRAWINGS AND/OR JOB SPECIFICATIONS

TWO-RAIL GUARDRAIL

NTS

5200A



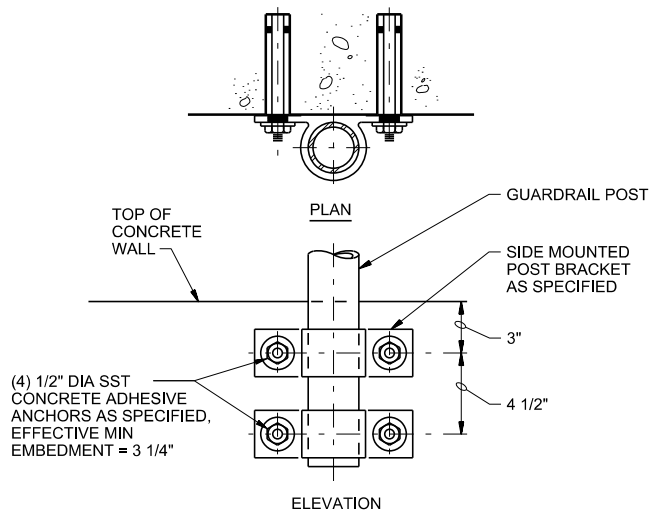
NOTES:

1. SEE TYPICAL GUARDRAIL DETAIL (5200A).
2. SEE SPECIFICATIONS FOR HANDRAIL MATERIAL.

TWO-RAIL HANDRAIL AT STAIRS

NTS

5201A



ELEVATION

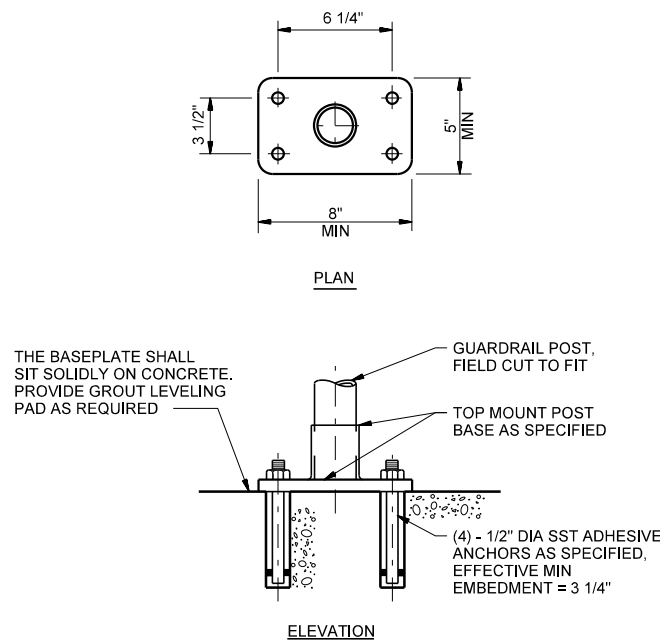
NOTES:

1. PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE PER SPECIFICATIONS.
2. USE SIDE MOUNTED POST BRACKET AS A TEMPLATE FOR THE ANCHOR BOLTS.
3. MAINTAIN THE CLEARANCES BETWEEN THE TOE BOARD AND THE CONCRETE SURFACES REQUIRED BY ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

GUARDRAIL POST ANCHORAGE-ALUMINUM

NTS

5250B



ELEVATION

NOTES:

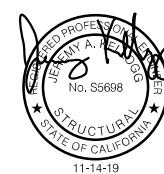
1. PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE PER SPECIFICATIONS.

GUARDRAIL POST ANCHORAGE-TYPE C

NTS

5250C

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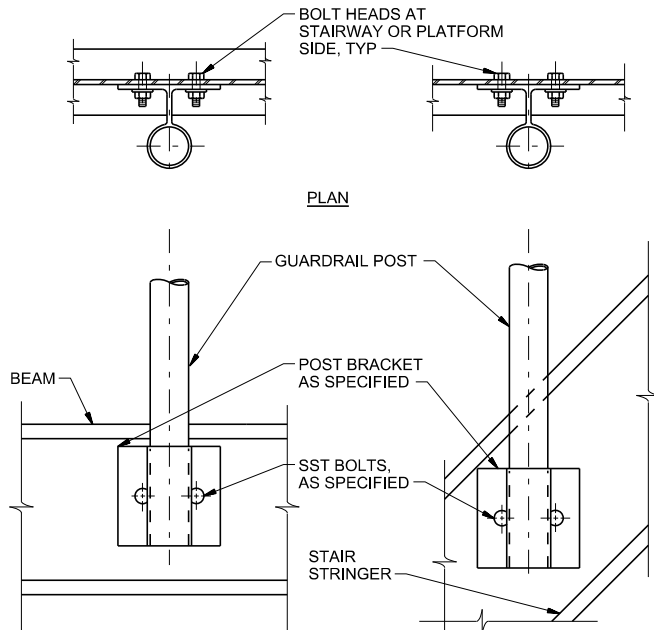
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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

GENERAL
STANDARD DETAILS 26

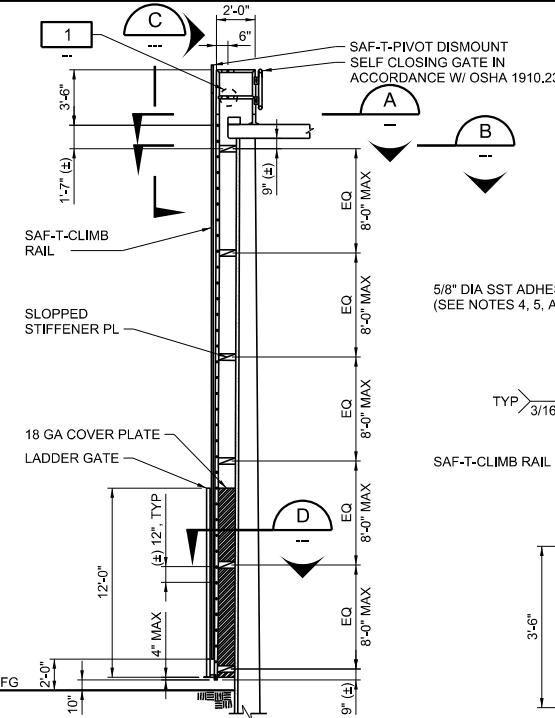
DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD00-G-045
SHEET NUMBER	41



- NOTES:**
1. PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE PER SPECIFICATIONS.
 2. HANDRAIL POST ANCHORAGE TO ALSO BE USED FOR GUARDRAIL POST ANCHORAGE.
 3. REFERENCE DRAWINGS AND OR SPECIFICATIONS FOR MATERIALS.

GUARDRAIL POST ANCHORAGE-TYPE D

5250D

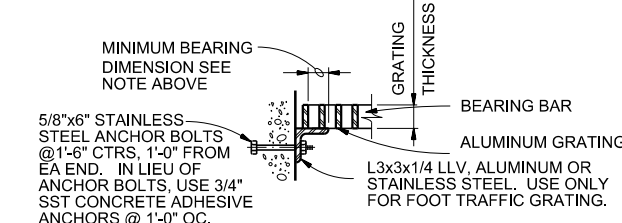
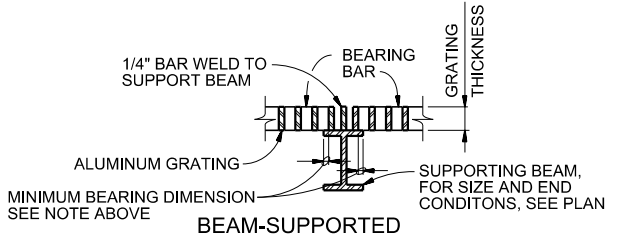
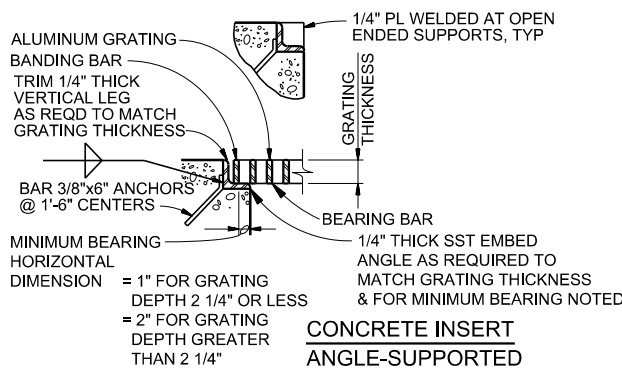


- EXTERIOR LADDER NOTES:**
1. ALL LADDER MATERIALS TO BE HOT DIPPED GALVANIZED AFTER FABRICATION. ALL MATERIALS FOR SAF-T-CLIMB TO BE SST 304.
 2. LADDER RUNGS TO BE SOLID BARS.
 3. ALL WELDS TO BE 3/16" MINIMUM.
 4. USE SST 316 FOR ALL BOLTS UNLESS SHOWN OTHERWISE.
 5. WHERE SST BOLTS ARE IN CONTACT WITH DISSIMILAR METALS, USE INSULATING SLEEVES AND PHENOLIC WASHERS TO ELECTRICALLY ISOLATE THE BOLTS.
 6. WHERE SST BOLTS ARE PLACED IN THE WALL EXTERIOR, DRILL AND PLACE AFTER WRAPPING AND BEFORE SHOTCRETING. TAKE EXTREME CARE TO AVOID DAMAGING PRESTRESSING. PLACE A STEEL PIPE AROUND THE DRILL BIT TO KEEP BIT FROM COMING IN CONTACT WITH THE PRESTRESSING. INSTALL BOLTS BEFORE SHOTCRETING. LOCATE TO AVOID VERTICAL THREADBARS.

EXTERIOR TANK LADDER

NTS

5301B



LEDGER ANGLE-SUPPORTED

ALUMINUM GRATING

NTS

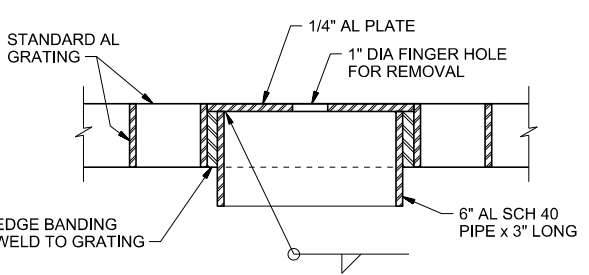
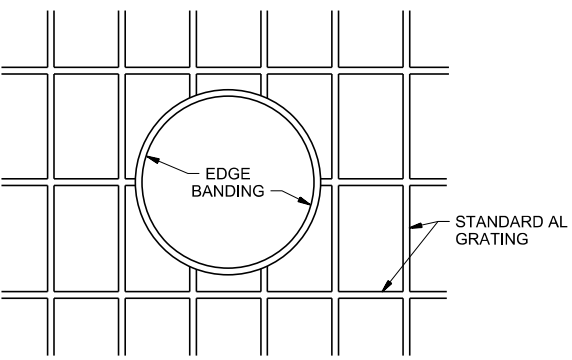
5400

GRATING NOTES

1. EXTEND GRATING CONTINUOUSLY OVER GATE GUIDES AND GATES.
2. NOTCH GRATING SUPPORTS AT GATES AS REQUIRED.
3. GRATING SPAN — SEE PLAN.
4. WIDTH OF GRATING SECTIONS SHALL NOT EXCEED 3'-0" AND INDIVIDUAL SECTION WEIGHT SHALL NOT EXCEED 150 POUNDS.
5. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
6. MATERIAL FOR SUPPORTS OF ALUMINUM GRATING TO BE SAME AS GRATING. EXCEPT METAL SUPPORTS THAT ARE TO BE EMBEDDED IN CONCRETE SHALL BE TYPE 316 STAINLESS STEEL.
7. UNLESS NOTED OTHERWISE ON PLANS, GRATING THICKNESS SHALL BE AS TABULATED IN "GRATING THICKNESS TABLE" FOR APPLICABLE TRAFFIC.
8. BEARING BAR THICKNESS FOR GRATING TO BE 3/16" MINIMUM.
9. BAND ALL EDGES WITH 3/16 x DEPTH OF BEARING BAR.
10. PROVIDE MISCELLANEOUS GRATING FASTENERS AS REQUIRED.
11. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 1/4" NOR GREATER THAN 1/2" AND AS SPECIFIED.
12. ALL GRATING SECTIONS, WHEN IN PLACE, SHALL ALWAYS BE FIRMLY ANCHORED TO THEIR SUPPORTS AS SPECIFIED.
13. PROVIDE SUPPORT TYPE SHOWN IN DRAWINGS OR MOST APPLICABLE FOR THE INSTALLATION CONDITIONS.

FOOT TRAFFIC GRATING THICKNESS TABLE

MAXIMUM SPAN	ALUMINUM (IN.)
3'-6"	1 1/4"
4'-0"	1 1/2"
4'-6"	1 3/4"
5'-0"	1 3/4"
5'-6"	2"
6'-0"	2 1/4"
6'-6"	2 1/4"
7'-0"	2 1/2"



OPERATING NUT ACCESS HOLE

NTS

5405

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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)

ROSEVILLE, CALIFORNIA

GENERAL

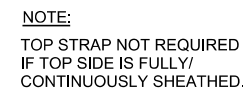
STANDARD DETAILS 27

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-G-046

SHEET NUMBER
42



NTS

[illegible]

NTS

NOTE:
FOR DETAIL 5814 CLOSURES, LOCATE ANCHORS SO THEY DO NOT
CONFLICT WITH LEDGER ANGLE.

NTS

PLAN

- SOLID GROUT CELL EACH SIDE OF BLOCKOUT
- STANDARD OVERSIZED HOLES
- 8" GA FOR BEAMS W/ FLANGE WIDTH < 5 1/2", 3 1/2" GA FOR BEAMS W/ FLANGE WIDTH > 5 1/2"
- CL WALL & BEARING
- 3/4" CLR
- 6"
- 6"
- 1/4"
- STEEL BEAM, SEE FRAMING PLANS

ELEVATION

- FILL VOID AROUND BEAM W/ GROUT
- 2 - 3/4"x0"-10" ANCHOR BOLTS W/ LEVELING NUTS & 2 - HEAVY WASHERS
- NON-SHRINK GROUT MASONRY EXTERIOR BEARING WALL
- CONTINUE FACE SHELLS OF MASONRY ACROSS SEAT BLOCKOUT
- BLOCKOUT DEPTH, SEE NOTE 1
- PL 3/4x4x10 1/2"
- 8" BOND BEAM W/ 2 TYP HORIZONTAL BARS CONTINUOUS (#5 MIN) ABOVE AND BELOW BLOCKOUT (5'-4" MIN LENGTH CENTERED ON SINGLE BEAM SEAT)
- 2"
- 2"

NOTE:

NOTE: PROVIDE BLOCKOUT DEPTH AS REQUIRED FOR SETTING BEAMS, (BEAM DEPTH + 6") MIN, OR SET BEAMS BEFORE COMPLETING WALL ABOVE.

NTS

SEE NOTE 4

1 1/4" MIN AT COPED BEAM FLANGE

2 1/2"

4" MAX

DOUBLE ANGLES MIN 5/16" THICK, SIZE AS REQD BY AISC STD CONN

3/4" DIA A325N BOLTS

VARIABLES

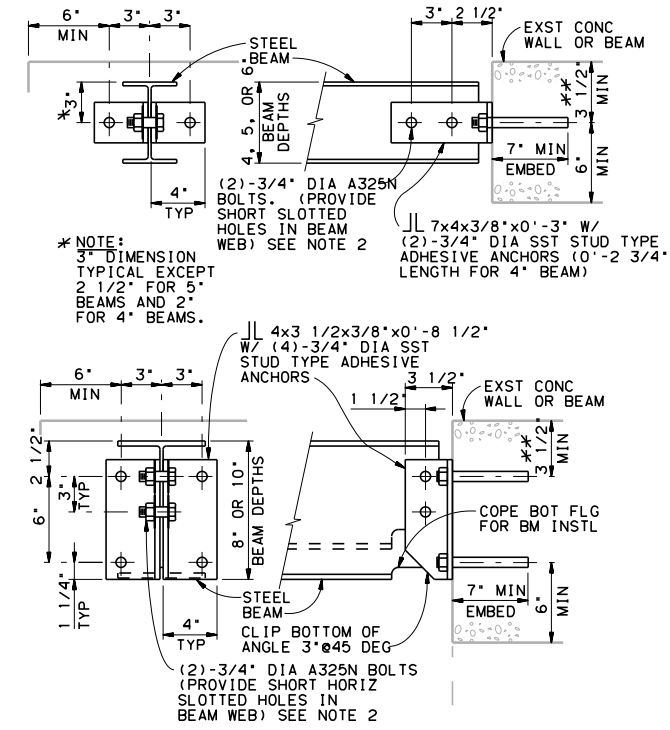
NOMINAL BEAM DEPTH, INCHES	ROWS OF BOLTS	LENGTH (3) OF ANGLE
36	7	1'-8 1/2"
30-33	6	1'-5 1/2"
24-27	5	1'-2 1/2"
18-21	4	11 1/2"
12-15	3	8 1/2"
8-10	2	5 1/2"
6	1	3"
4	1	2 1/2"

NOTES:

1. NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS TO ENCLOSED WEB.
2. ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OTHERWISE ON FRAMING PLANS.
3. ADD 1 1/2 " TO ANGLE LENGTH FOR STAGGERED BOLT CONNECTIONS.
4. 3" DIMENSION TYP EXCEPT AS RECOMMENDED BY AISC FOR LARGER MEMBERS.

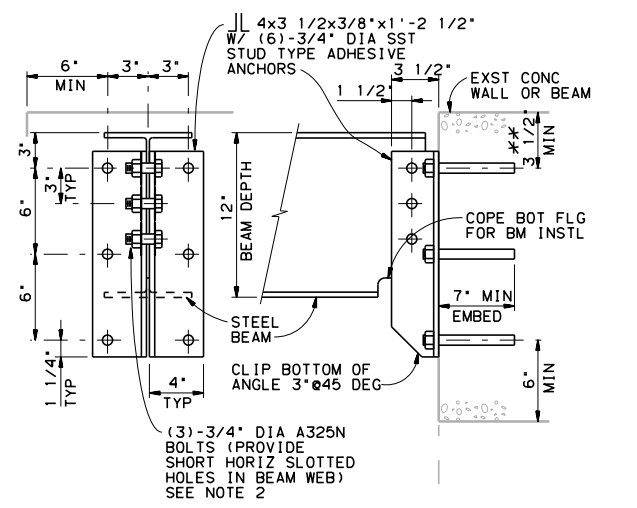
NTS

MASONRY EXTERIOR BEARING WALL  ELEVATION NOTE: PROVIDE BLOCKOUT DEPTH AS REQUIRED FOR SETTING BEAMS, (BEAM DEPTH + 6") MIN, OR SET BEAMS BEFORE COMPLETING WALL ABOVE. BEAM SEAT/EXTERIOR WALL NTS 5814	HORIZONTAL BARS CONTINUOUS (#5 MIN) ABOVE AND BELOW BLOCKOUT (5'-4" MIN LENGTH CENTERED ON SINGLE BEAM SEAT) 2. ALL FRAMING CONNECTIONS SHALL CONFORM TO SCHEDULE UNLESS DETAILED OTHERWISE ON FRAMING PLANS. 3. ADD 1 1/2 " TO ANGLE LENGTH FOR STAGGERED BOLT CONNECTIONS. 4. 3" DIMENSION TYP EXCEPT AS RECOMMENDED BY AISC FOR LARGER MEMBERS. TYPICAL BEAM FRAMING CONNECTION-STEEL NTS 5825		FOR PROPOSAL PURPOSES ONLY, NOT FOR CONSTRUCTION  FILENAME: WD5400G020.dgn PLOT DATE:
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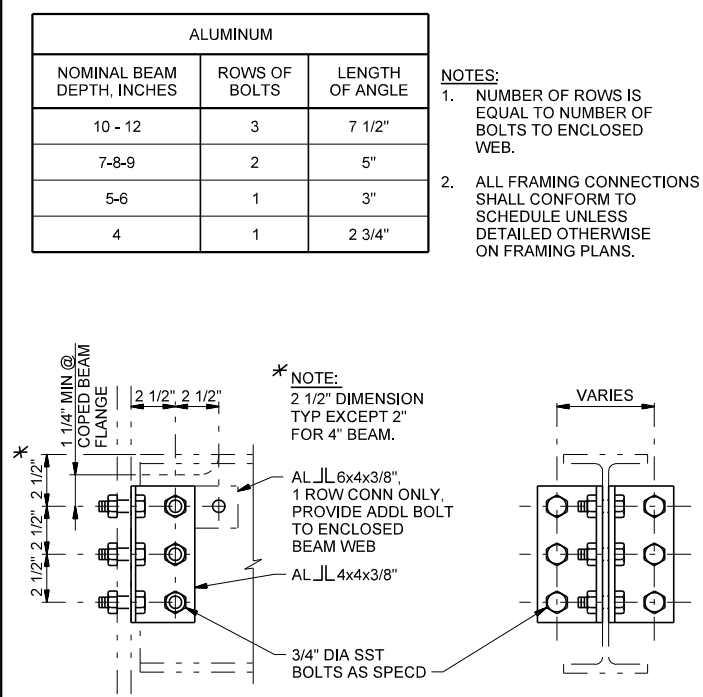


BEAM / WALL CONNECTION - STEEL
NTS

5826

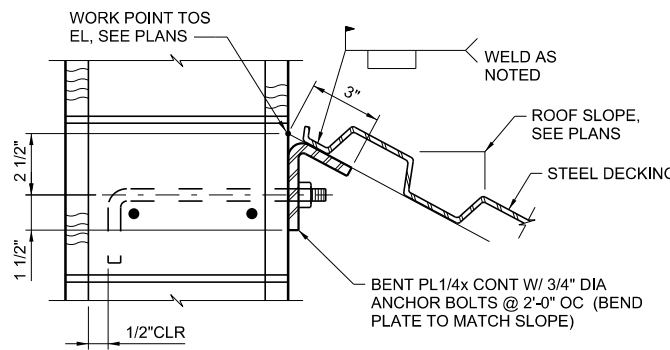


- NOTES:
- DO NOT CUT EXISTING CONCRETE BEAM TOP REINFORCING DURING DRILL-IN ANCHOR INSTALLATION. FIELD LOCATE BEAM REINFORCING PRIOR TO FABRICATION. ADD LENGTH TO CLIP ANGLES AS REQUIRED TO LOWER ANCHORS TO CLEAR REINFORCING WHILE MAINTAINING SPACING AND EDGE DISTANCE AS SHOWN.
 - AT ONE END ONLY, TIGHTEN SNUG TIGHT & BACK OFF 1/2 TURN AND DOUBLE NUT.

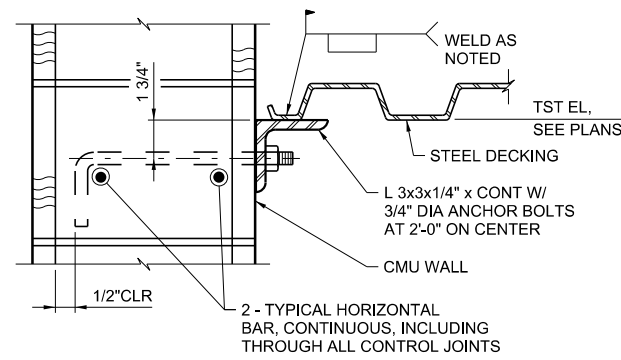


TYPICAL FRAMING
CONNECTION - ALUMINUM
NTS

5827



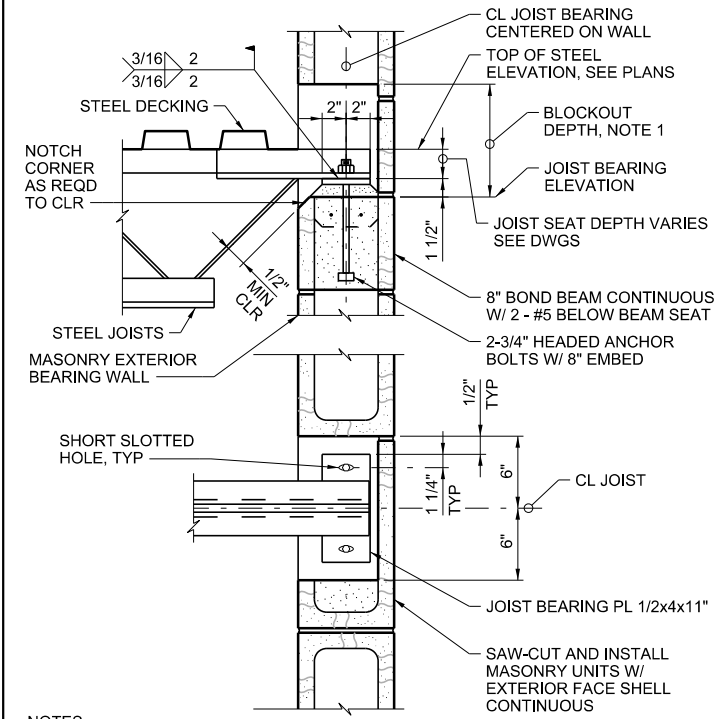
DECKING AT ANGLE TO WALL



DECKING LEDGER SUPPORT ANGLE

DECKING LEDGER SUPPORT ANGLE
NTS

5900



- NOTES:
- PROVIDE BLOCKOUT DEPTH AS REQUIRED FOR SETTING JOISTS, 8\"/>

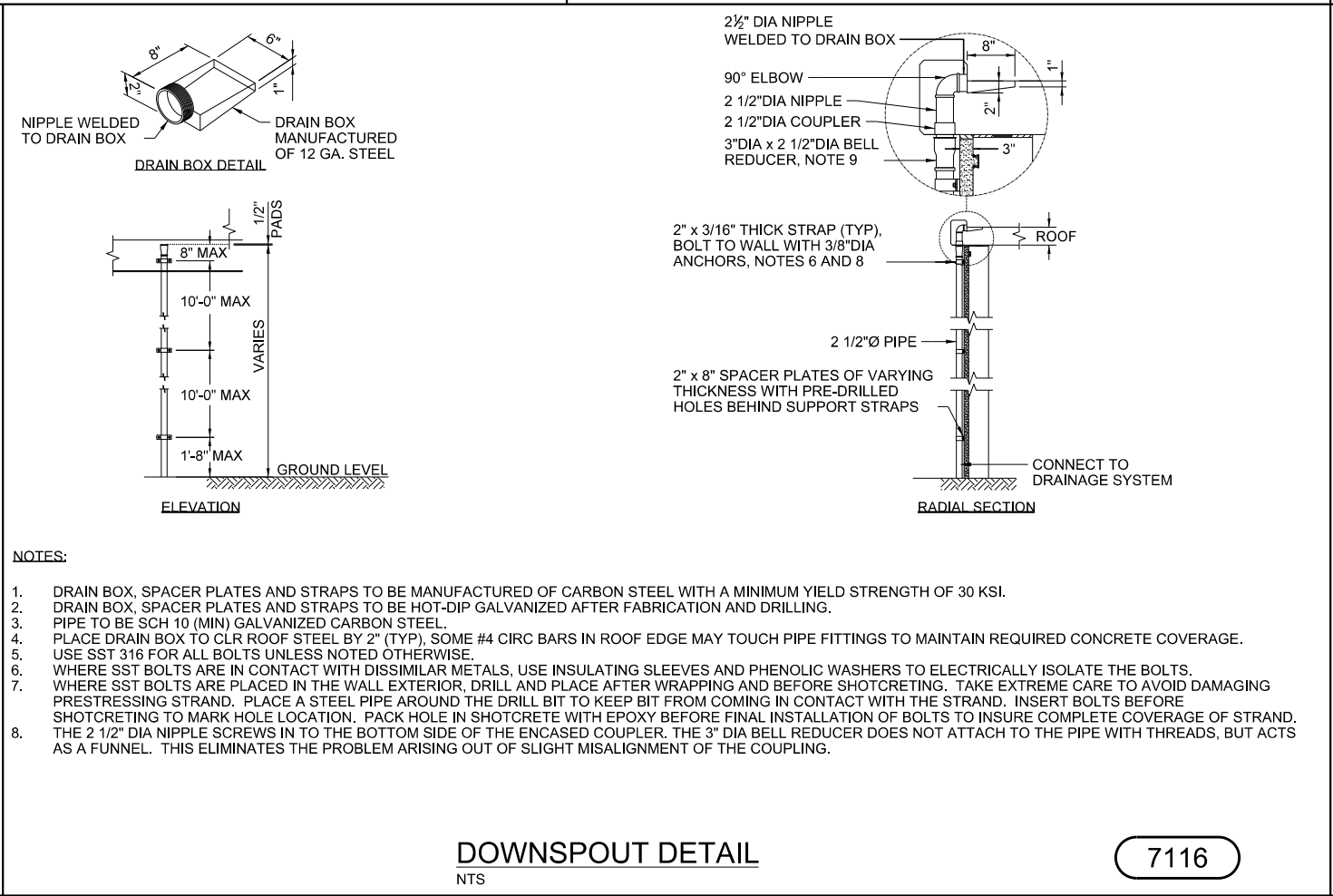
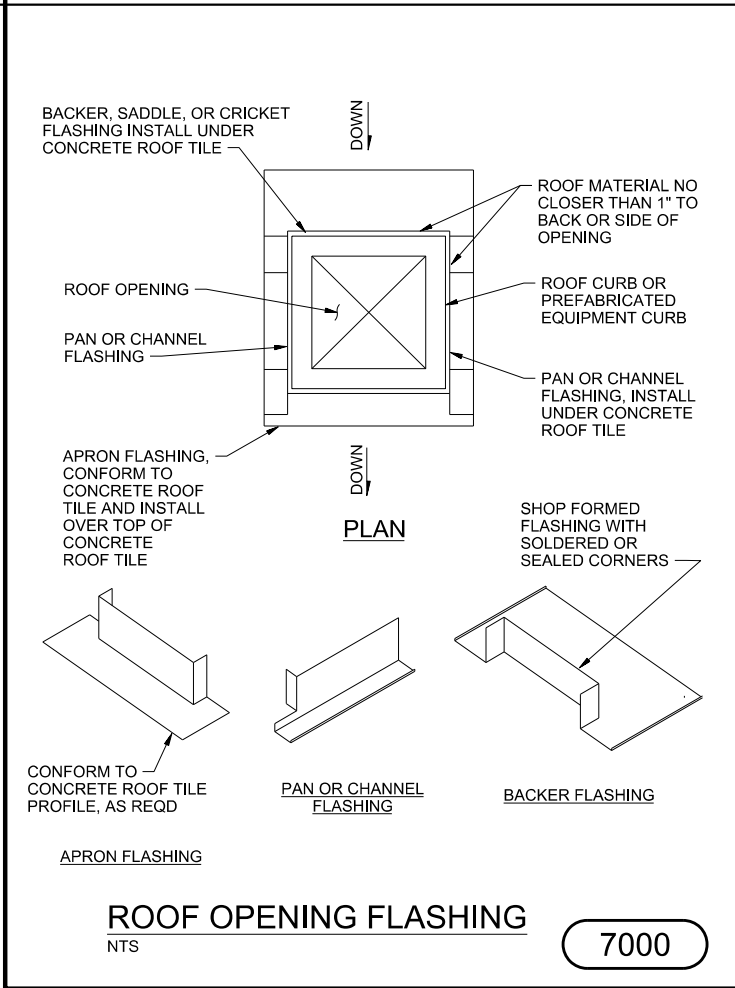
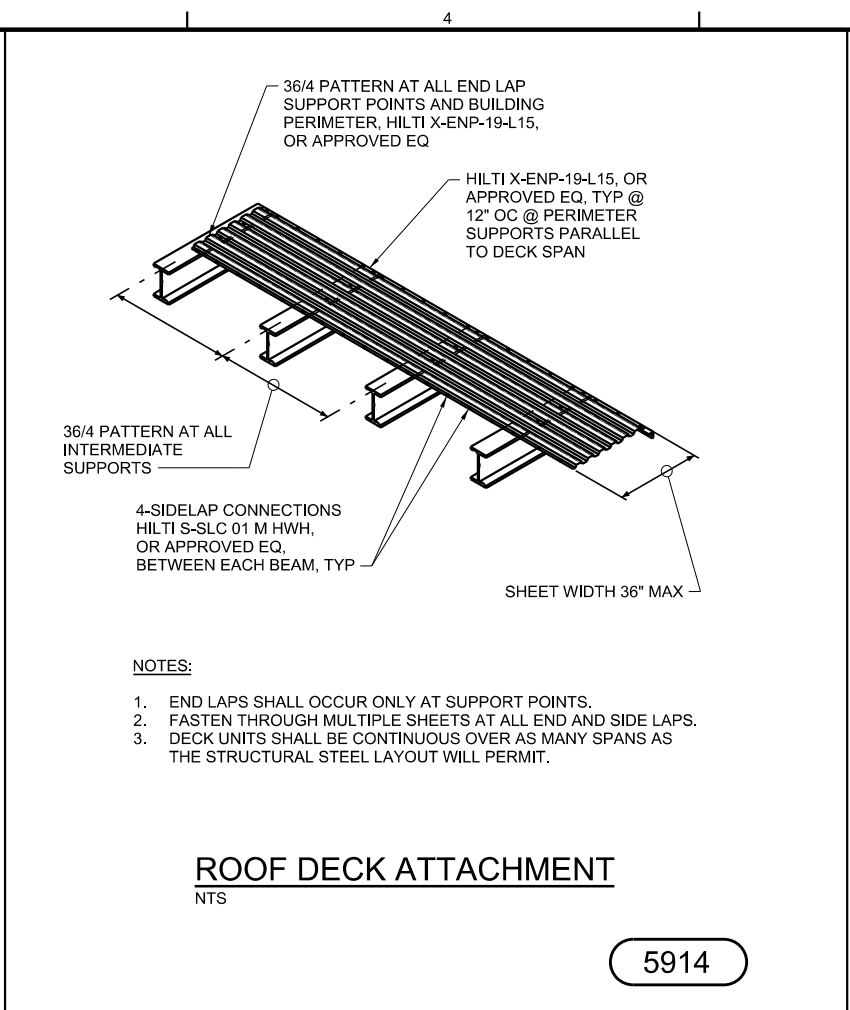
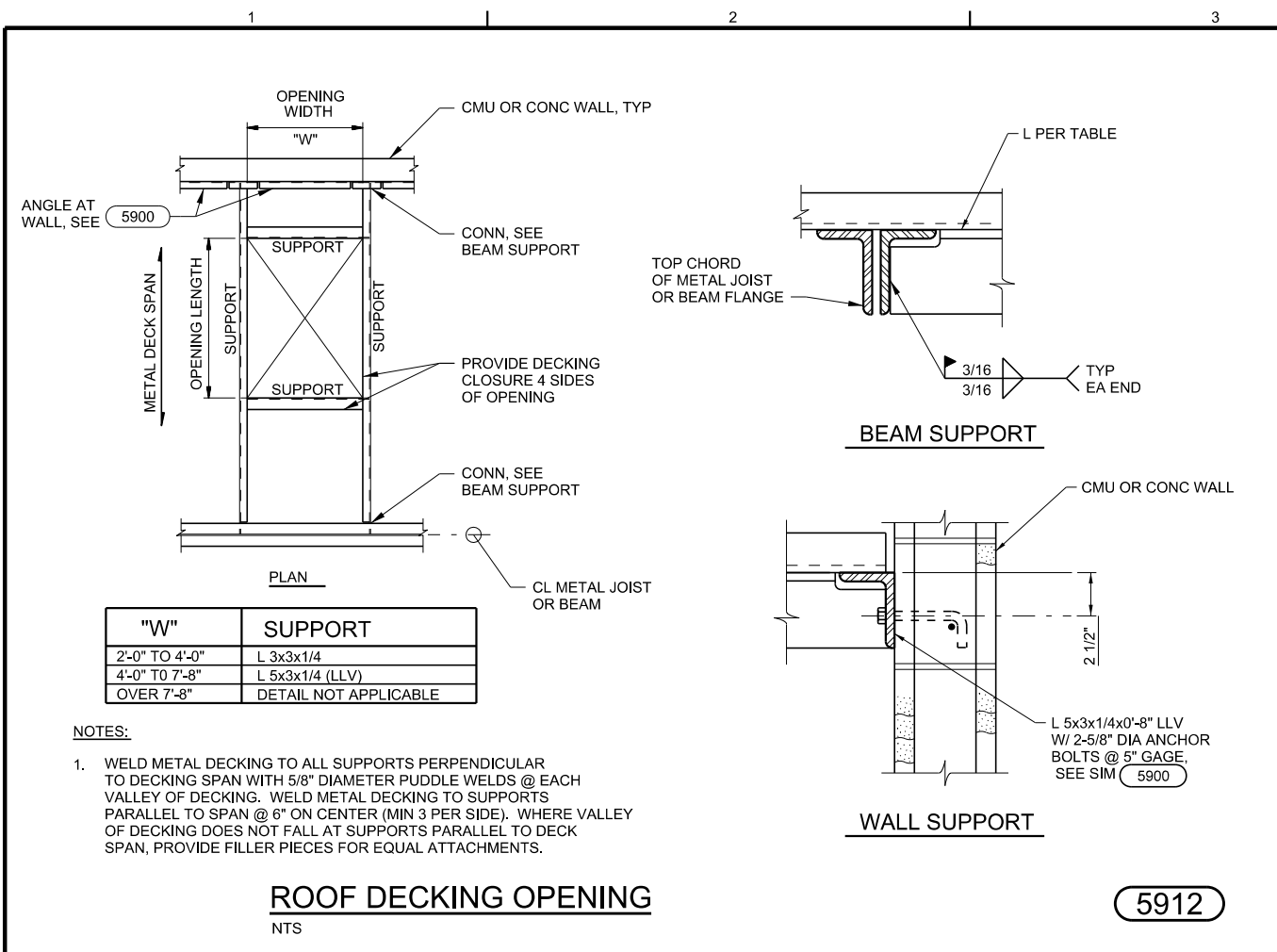
STEEL JOIST SEAT/EXTERIOR WALL
NTS

5907

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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL STANDARD DETAILS 29			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-G-048			
SHEET NUMBER 44			



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WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)

ROSEVILLE, CALIFORNIA

GENERAL

STANDARD DETAILS 30

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

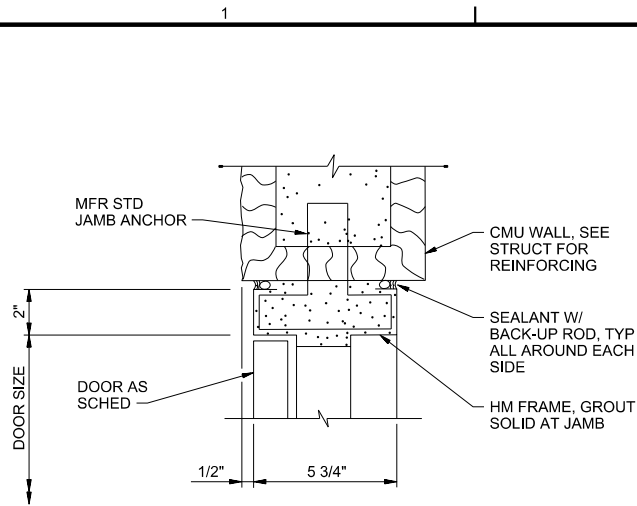
DRAWING NUMBER
WD00-G-049

SHEET NUMBER
45

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ANTHONY A. KADAR
No. S5698
STRUCTURAL
STATE OF CALIFORNIA
11-14-19

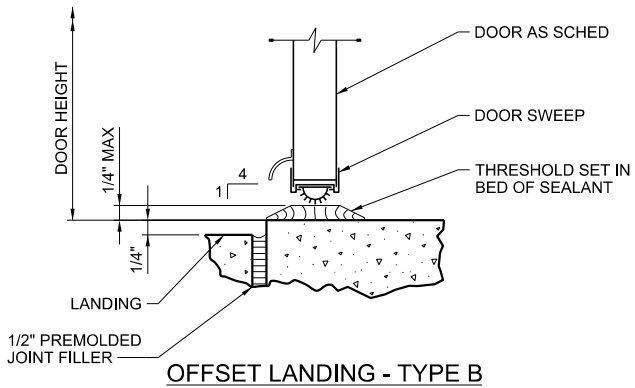
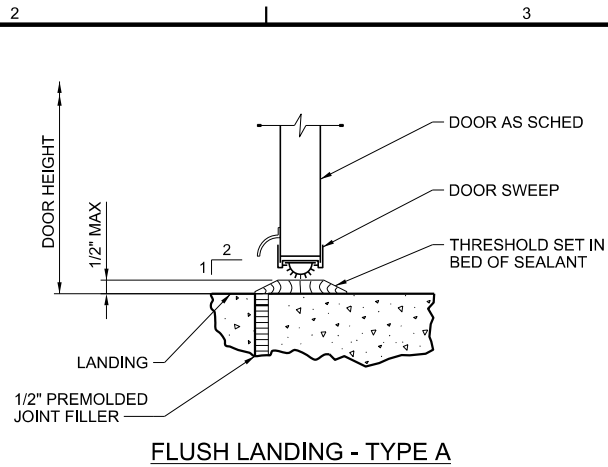
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NOTE:
HEAD SIMILAR

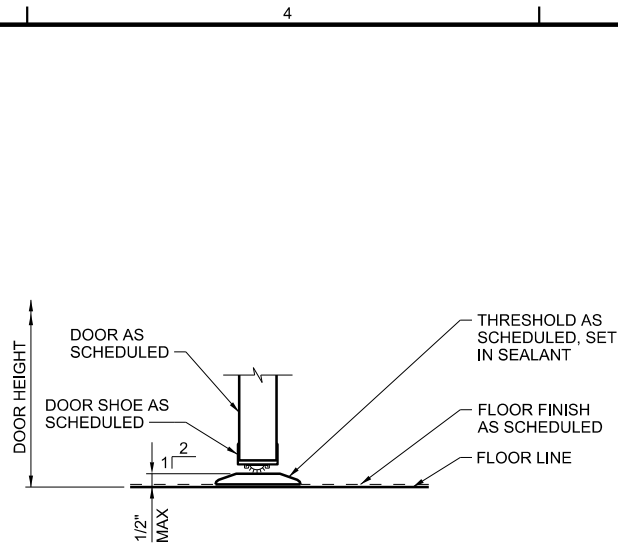
DOOR JAMB - 8" CMU
NTS

8100



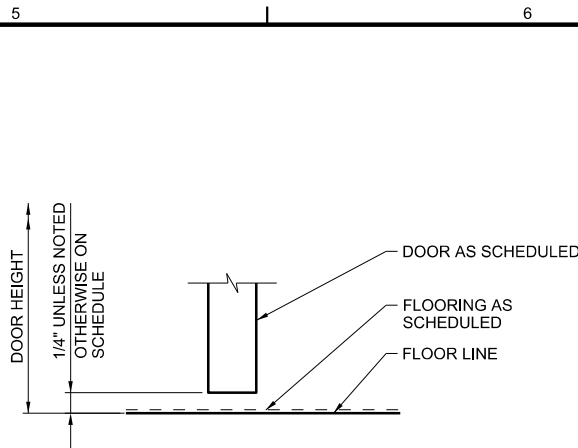
DOOR THRESHOLD
NTS

8110



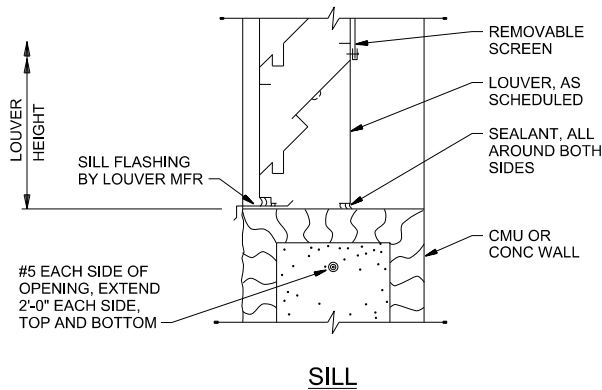
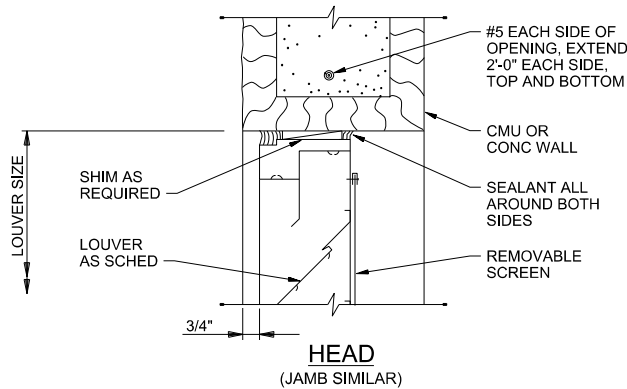
DOOR THRESHOLD
NTS

8111



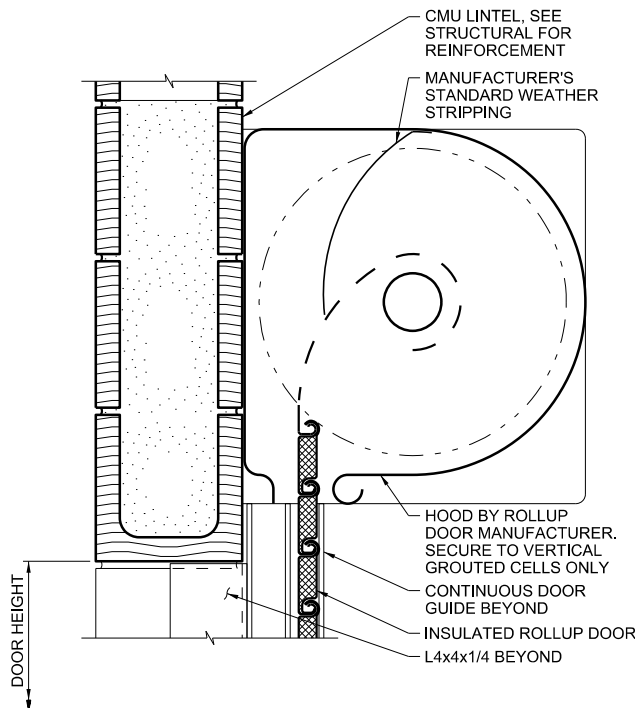
DOOR THRESHOLD
NTS

8112



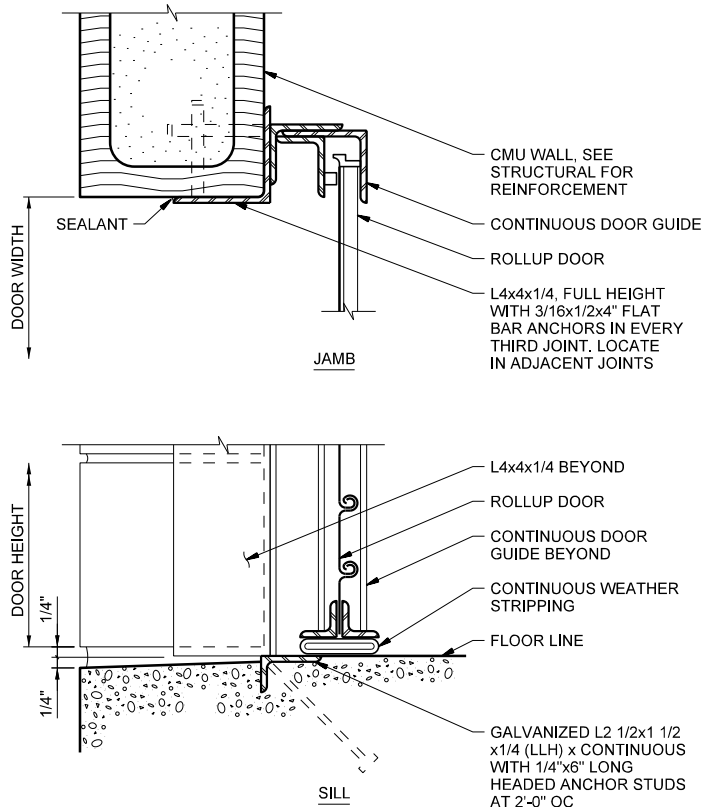
LOUVER
NTS

8115



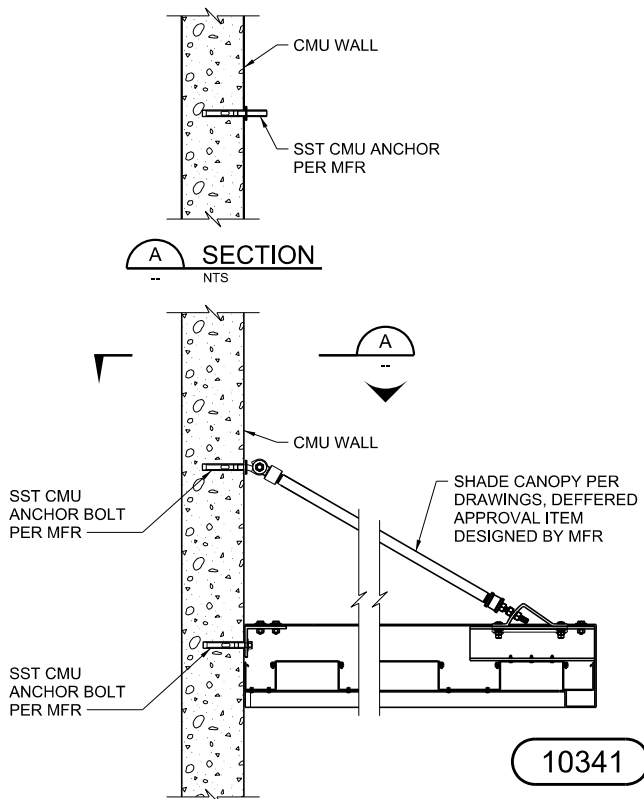
ROLLUP DOOR HEAD
NTS

8300



ROLLUP DOOR JAMB AND SILL
NTS

8301



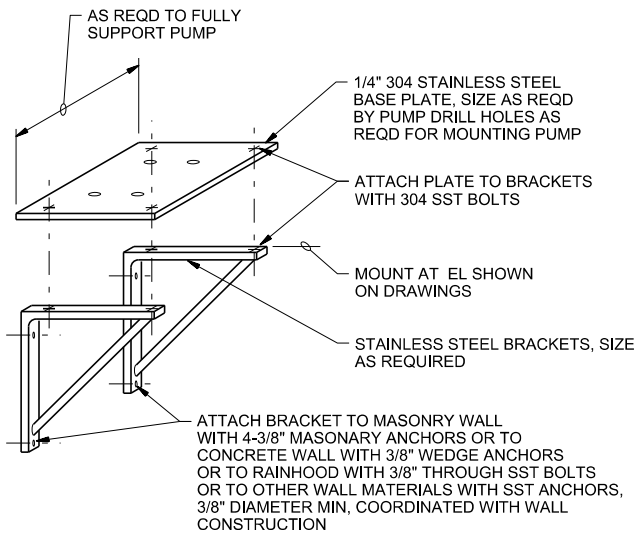
SUN SHADE CANOPY ATTACHMENT (CMU WALL)
NTS

10341

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NOT FOR
CONSTRUCTION

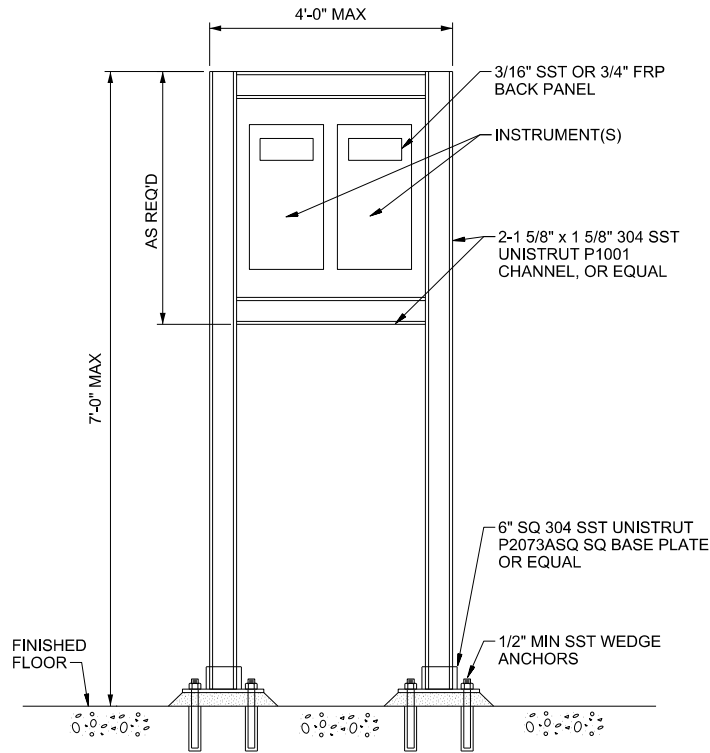


DESIGNED J KELLOGG	DRAWN J MARTIN	CHECKED S KADER	APPROVED M FISHER
CITY OF ROSEVILLE CALIFORNIA			
WATERWORKS ENGINEERS 2280 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-785-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL STANDARD DETAILS 31			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-G-050			
SHEET NUMBER 46			



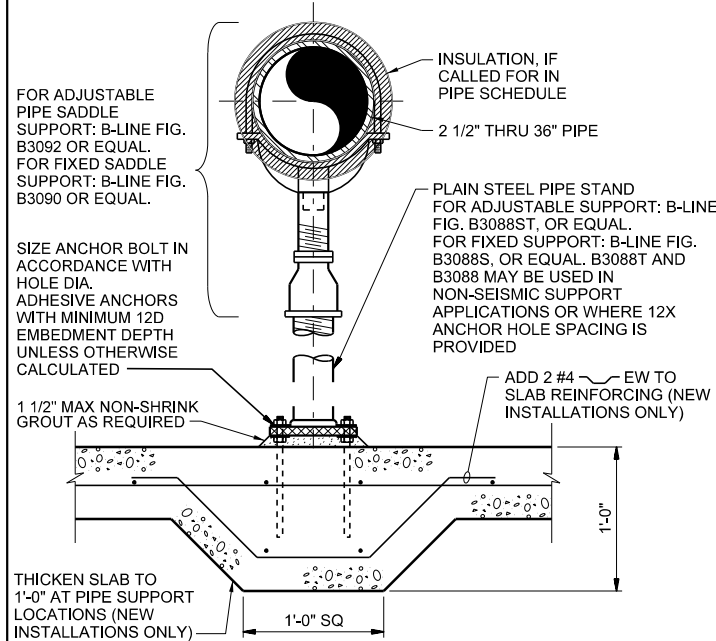
SMALL PUMP SUPPORT
NTS

11900



DOUBLE CHANNEL SUPPORT FOR INSTRUMENTS
NTS

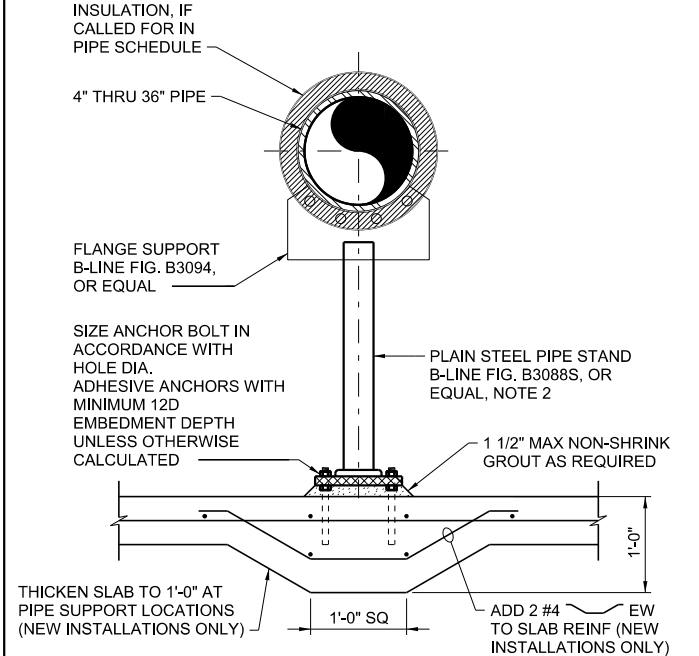
13301



- NOTES:**
1. COAT ALL SHAPES PER SPECIFICATION SECTION 09900 SYSTEM 300.
 2. ADJUSTABLE OR FIXED SUPPORT INSTALLATION AT CONTRACTOR'S DISCRETION, UNLESS SHOWN OTHERWISE.

SADDLE PIPE SUPPORT
NTS

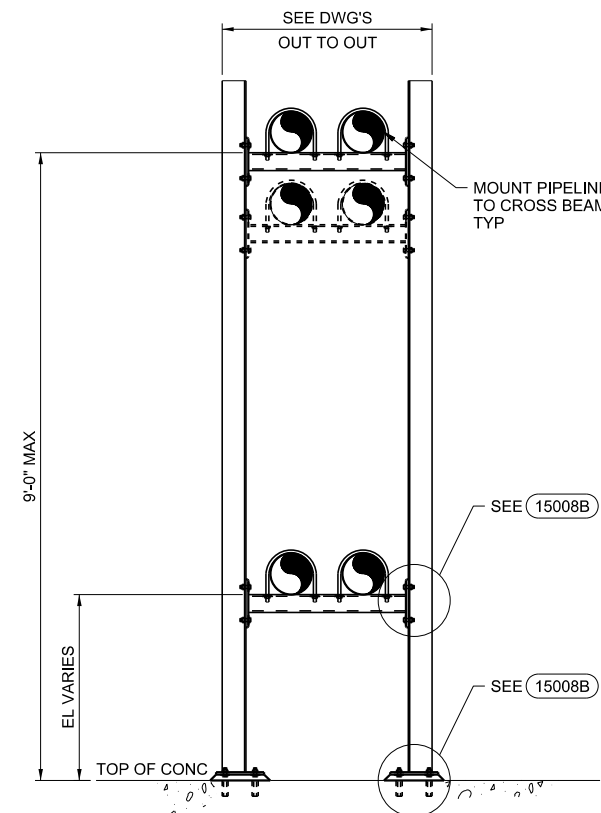
15000



- NOTES:**
1. COAT ALL SHAPES PER SPECIFICATION SECTION 09900 SYSTEM 300.
 2. B-LINE FIG. B3088 MAY BE USED IN NON-SEISMIC SUPPORT APPLICATIONS OR WHERE 12X ANCHOR HOLE SPACING IS PROVIDED. FOR VERTICAL ADJUSTMENTS USE PIPE ADJUSTER B-LINE FIG. B3089 AND FIG. B3088ST OR FIG. B3088T IN NON-SEISMIC SUPPORT APPLICATIONS.

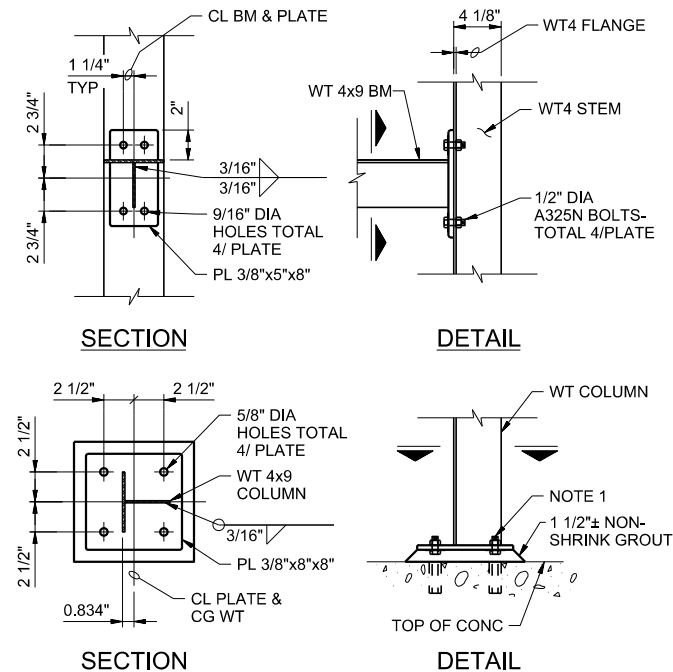
FLANGE MOUNTED PIPE SUPPORT
NTS

15002



FIXED PIPE SUPPORT RACK
NTS

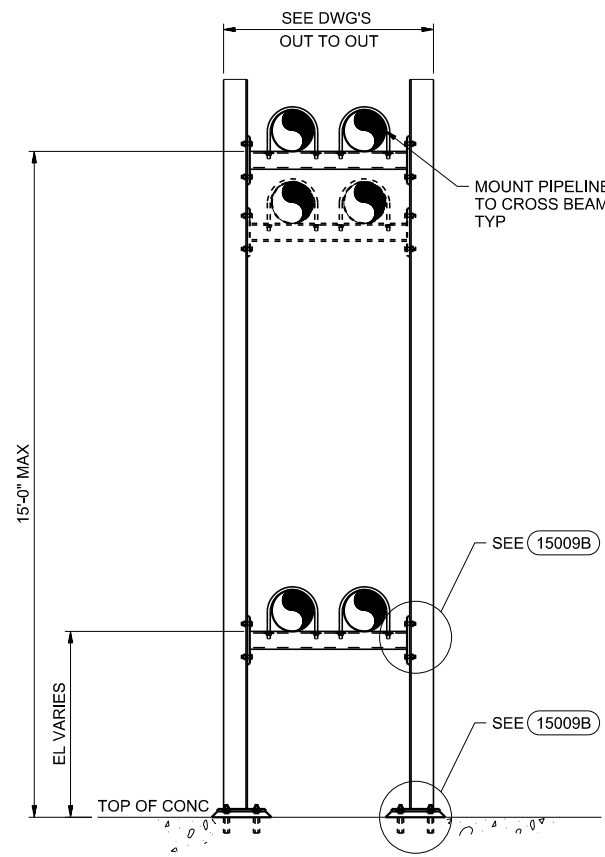
15008A



- NOTE:**
1. 1/2\"/>
 2. ALL SHAPES TO BE MADE OF STEEL AND COATED PER SPECIFICATIONS SECTION 09900.

FIXED PIPE SUPPORT RACK SECTIONS AND DETAILS
NTS

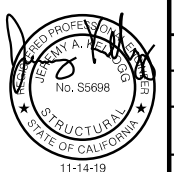
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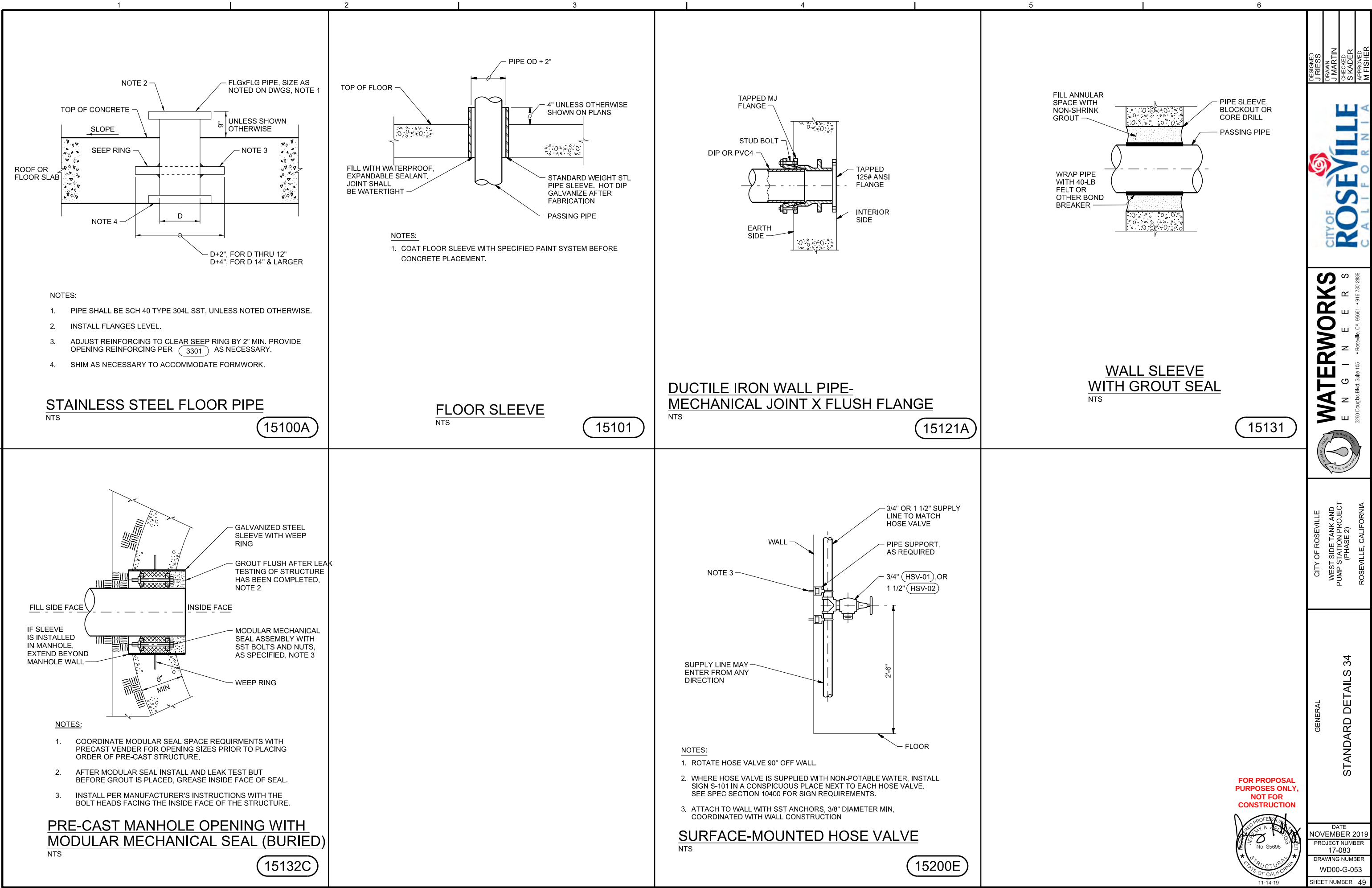


FIXED PIPE SUPPORT RACK
NTS

15009A

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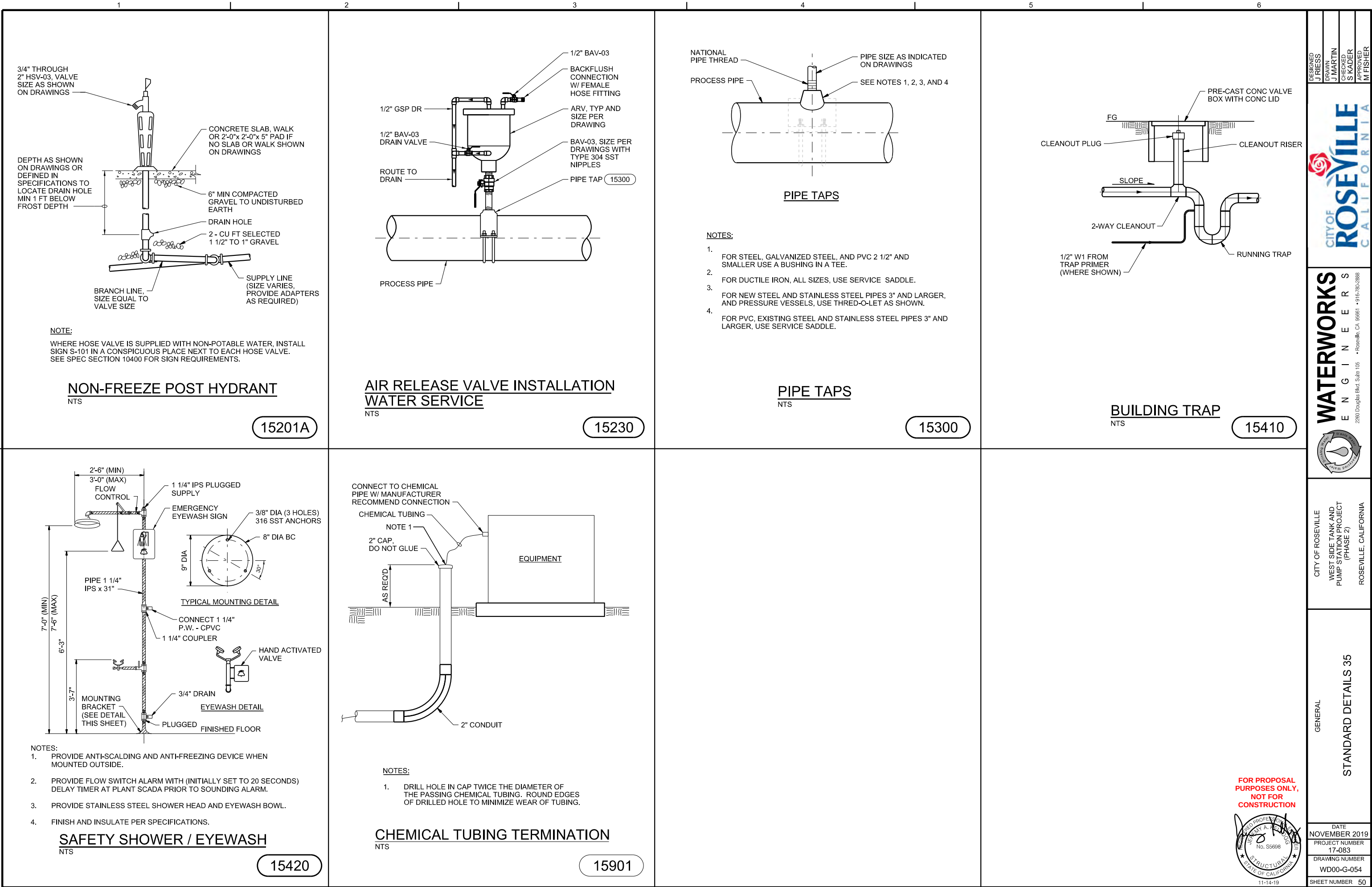




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DESIGNED J. RESS	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
WATERWORKS ENGINEERS 2280 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-785-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
GENERAL STANDARD DETAILS 34			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-G-053			
SHEET NUMBER 49			



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CONSTRUCTION



DESIGNED J. RISS		WATERWORKS ENGINEERS 2280 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-785-2888		CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	GENERAL STANDARD DETAILS 36	DATE NOVEMBER 2019
DRAWN J. MARTIN						PROJECT NUMBER 17-083
CHECKED S. KADER						DRAWING NUMBER WD00-G-055
APPROVED M. FISHER						SHEET NUMBER 51

RESERVED

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PURPOSES ONLY,
NOT FOR
CONSTRUCTION



DESIGNED	J. RISS
DRAWN	J. MARTIN
CHECKED	S. KADER
APPROVED	M. FISHER



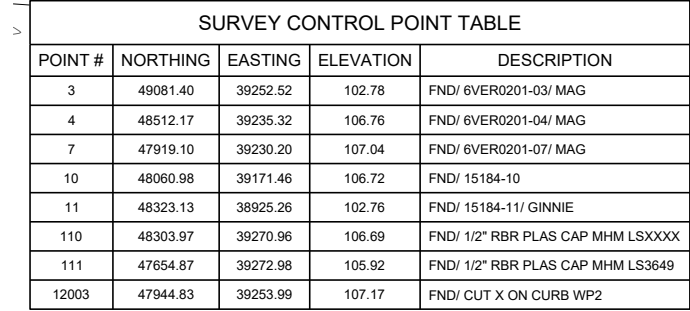
WATERWORKS
ENGINEERS
2280 Douglas Blvd. Suite 105 • Roseville, CA 95661 • 916-785-2888



CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

GENERAL
STANDARD DETAILS 37

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD00-G-056
SHEET NUMBER	52



NOTES:

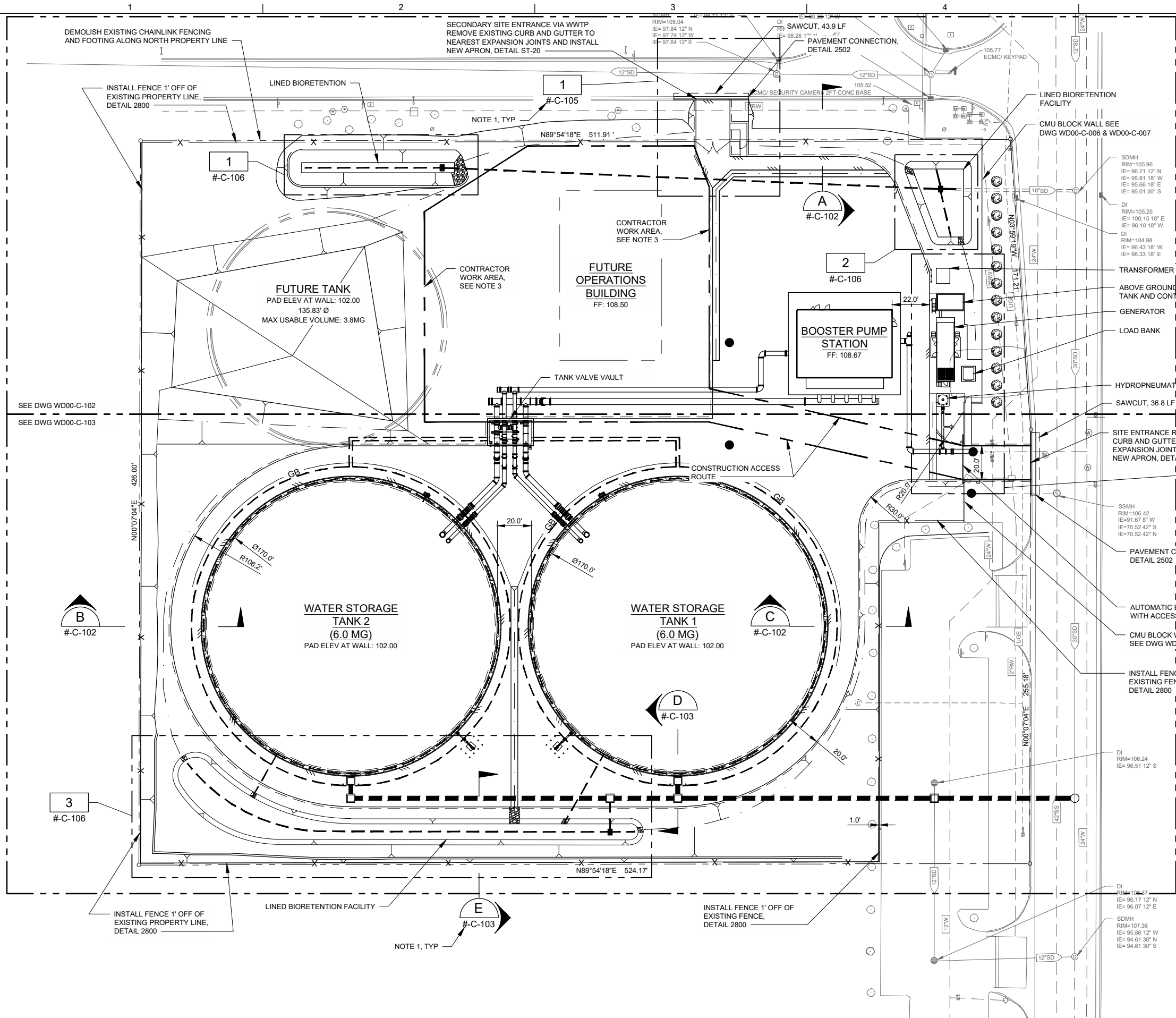
1. VERTICAL CONTROL BENCH MARK:
CITY OF ROSEVILLE BMMH73 3 1/2" BRASS DISC
STAMPED LS6046, DEC, 1995, EAST SIDE OF
FIDDMOND ROAD ON THE TOP OF THE CURB AT THE
DOUBLE DRAIN INLETS AT THE KASEBURG CREEK
ARCH CULVERT ELEVATION = 94.953.
2. BASIS OF BEARING:
BEARING OF N 00°07'04" E BETWEEN FOUND
MONUMENTS IN CENTERLINE OF WESTPARK DRIVE.
AS SHOWN ON THE MAP ENTITLED "WESTPARK PHASE 1"
RECORDED IN BOOK "AA" OF MAPS AT PAGE 4.
PLACER COUNTY OFFICIAL RECORDS.

30 0 30 60 FEET

SCALE 1"=30'

REGISTERED PROFESSIONAL ENGINEER
MICHAEL J. FISHER
No. C67194
CIVIL
STATE OF CALIFORNIA
11-14-19

L:\CAD\PROJECTS\17-083 ROSEVILLE WEST SIDE TANK - PS_(S)\PROJECT FILES\DELIVERABLES\WD5400C101.DWG



NOTES:

- REPLACE "H" IN DRAWING REFERENCES WITH "WD00".
- SEE DWG WD00-C-201 FOR YARD PIPING.
- CITY INTENDS TO INITIATE CONSTRUCTION OF THE FUTURE OPERATIONS/CREW BUILDING IN THE AREA INDICATED ON THE PLANS BEFORE THE COMPLETION OF THIS PROJECT. CONTRACTOR WILL COMPLETE SITE GRADING AND DRAINAGE IMPROVEMENTS FOR THE FUTURE OPERATIONS/CREW BUILDING AREA AND EVACUATE THEIR EQUIPMENT, STAGING, AND ALL OTHER USES OF THIS AREA IN ACCORDANCE WITH PROJECT MILESTONE 2. THIS CONSTRUCTION WORK AREA IS DEDICATED FOR CREW FACILITY CONTRACTOR AFTER MILESTONE 2. KEEP CLEAR AT ALL TIMES AND COORDINATE OPERATIONS AND SWPPP ACTIVITIES WITH CREW FACILITY CONTRACTOR.

GRADING NOTES:

- NON-POTABLE WATER SHALL BE SPRAYED ON ALL EXPOSED EARTH SURFACES DURING CLEARING, GRADING, EARTH MOVING, AND OTHER SITE PREPARATION ACTIVITIES. THE EXPOSED EARTH SHALL BE WATERED THROUGHOUT THE DAY TO MINIMIZE DUST.
- TARPAULINS OR OTHER EFFECTIVE COVERS SHALL BE USED ON ALL STOCKPILED EARTH MATERIAL AND ON HAUL TRUCKS TO MINIMIZE DUST.
- THE CITY SHALL HAVE THE AUTHORITY TO STOP ALL GRADING OPERATIONS, IF, IN THE OPINION OF CITY STAFF, INADEQUATE DUST CONTROL MEASURES ARE BEING PRACTICED OR EXCESSIVE WIND CONDITIONS CONTRIBUTE TO FUGITIVE DUST EMISSIONS.
- ADJACENT STREET FRONTAGES SHALL BE SWEEPED AT LEAST ONCE A DAY TO REMOVE SILT AND OTHER DIRT WHICH IS EVIDENT FROM CONSTRUCTION ACTIVITIES. REFER TO SCHEDULES WITHIN SWPPP.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING CONSTRUCTION VEHICLES LEAVING THE SITE ON A DAILY BASIS TO PREVENT DUST, SILT AND DIRT FROM BEING RELEASED OR TRACKED OFFSITE. REFER TO SWPPP FOR SPECIFIC REQUIREMENTS.
- CONSTRUCTION SHALL STOP IF CULTURAL RESOURCES ARE SUSPECTED. IT IS POSSIBLE THAT PREVIOUS ACTIVITIES HAVE OBSCURED SURFACE EVIDENCE OF CULTURAL RESOURCES. IF SIGNS OF AN ARCHEOLOGICAL SITE, SUCH AS ANY UNUSUAL AMOUNTS OF STONE, BONE, OR SHELL, ARE UNCOVERED DURING GRADING OR OTHER CONSTRUCTION ACTIVITIES, WORK SHALL BE HALTED WITHIN 100 FEET OF THE FIND AND THE CITY'S ENVIRONMENTAL COORDINATOR SHALL BE NOTIFIED. A QUALIFIED ARCHEOLOGIST SHALL BE CONSULTED FOR AN ON-SITE EVALUATION. THE ARCHEOLOGIST MAY REQUIRE ADDITIONAL MITIGATION.
- SHOULD GRADING OPERATIONS UNCOVER HAZARDOUS MATERIALS, OR WHAT APPEARS TO BE HAZARDOUS MATERIALS, THE FIRE DEPARTMENT SHALL BE CONTACTED IMMEDIATELY AT (916) 774-5820. THE AREA, WHICH CONTAINS THE HAZARDOUS MATERIALS, SHALL BE MARKED OFF UNTIL AN INVESTIGATION BY A MEMBER OF THE FIRE DEPARTMENT IS CONDUCTED.
- THE CONTRACTOR IS EXPECTED TO COMPLY WITH THE FUGITIVE DUST CONTROL REQUIREMENTS FROM THE PLACER COUNTY AIR POLLUTION CONTROL DISTRICT: WWW.PLACER.CA.GOV/APCD
- CONTRACTOR RESPONSIBLE FOR ANY/ALL FINES.

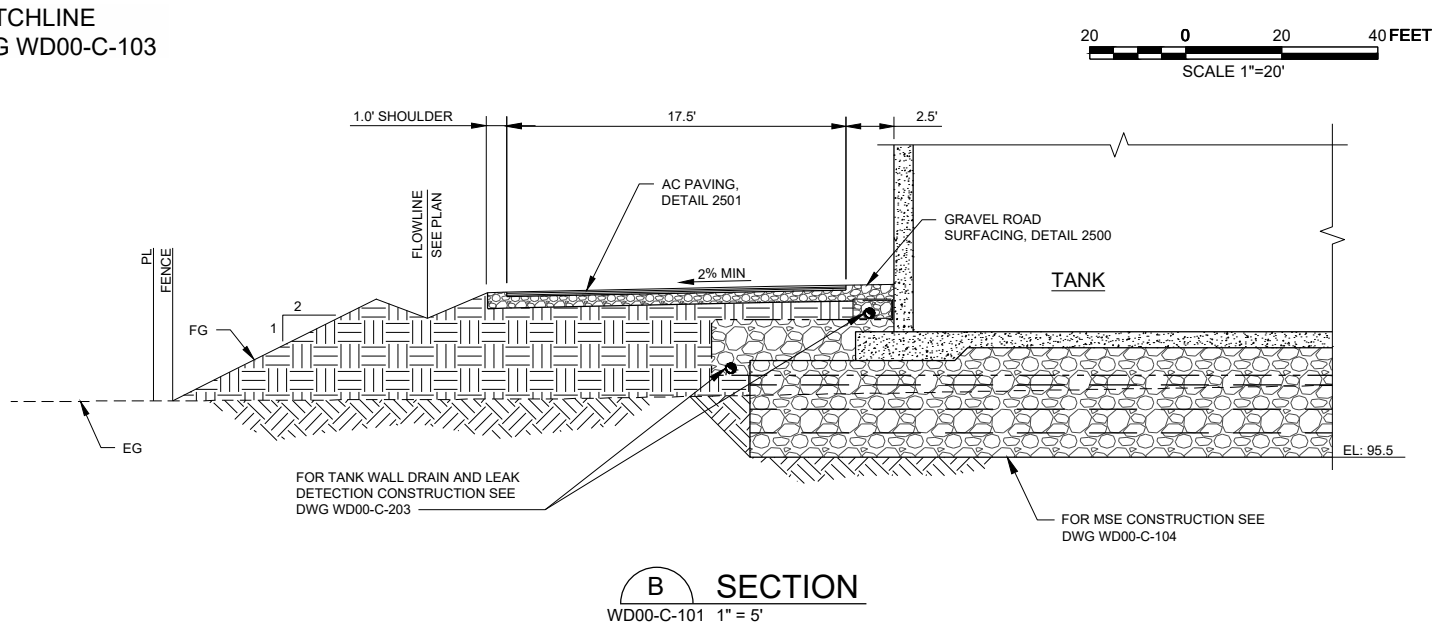
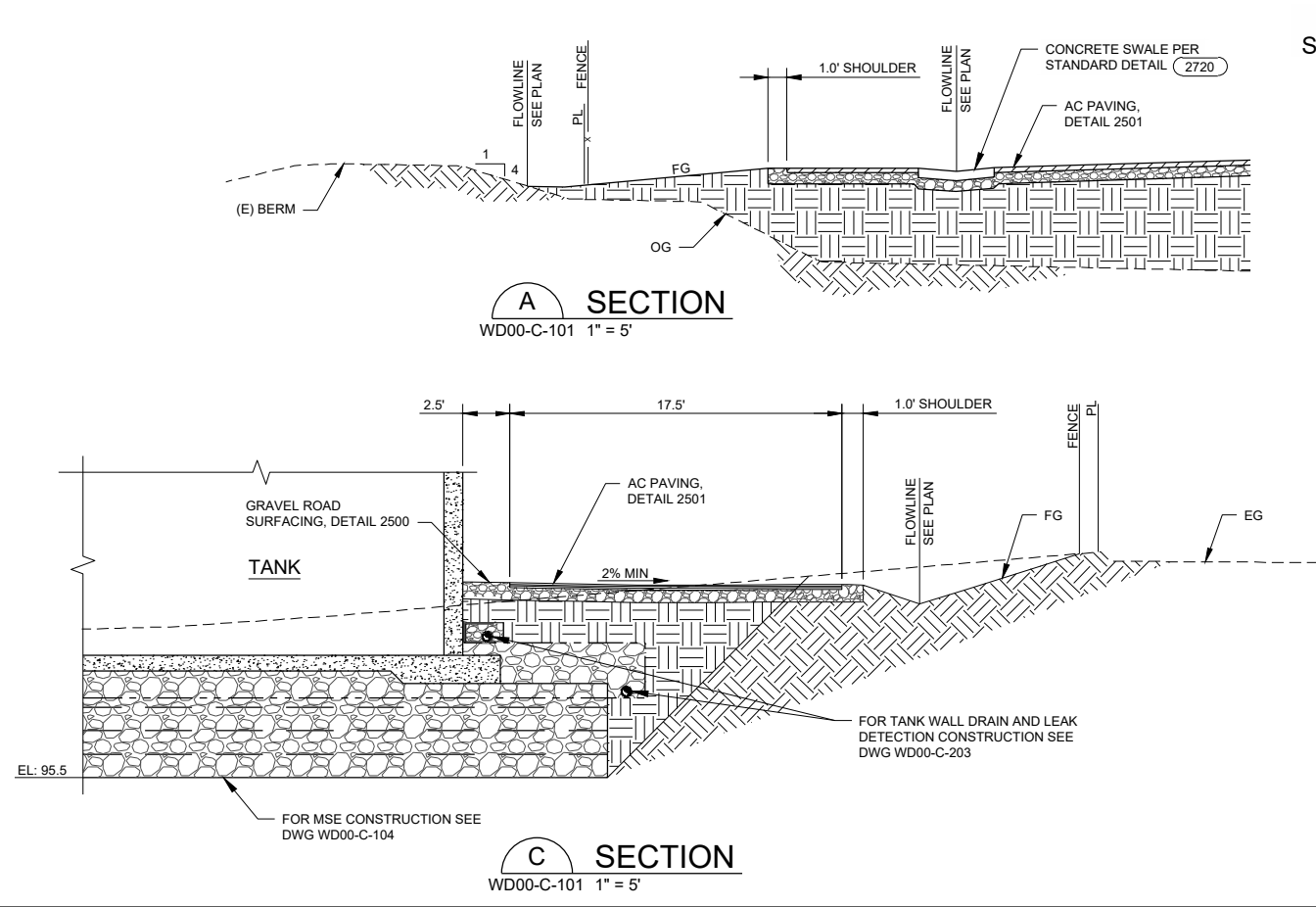
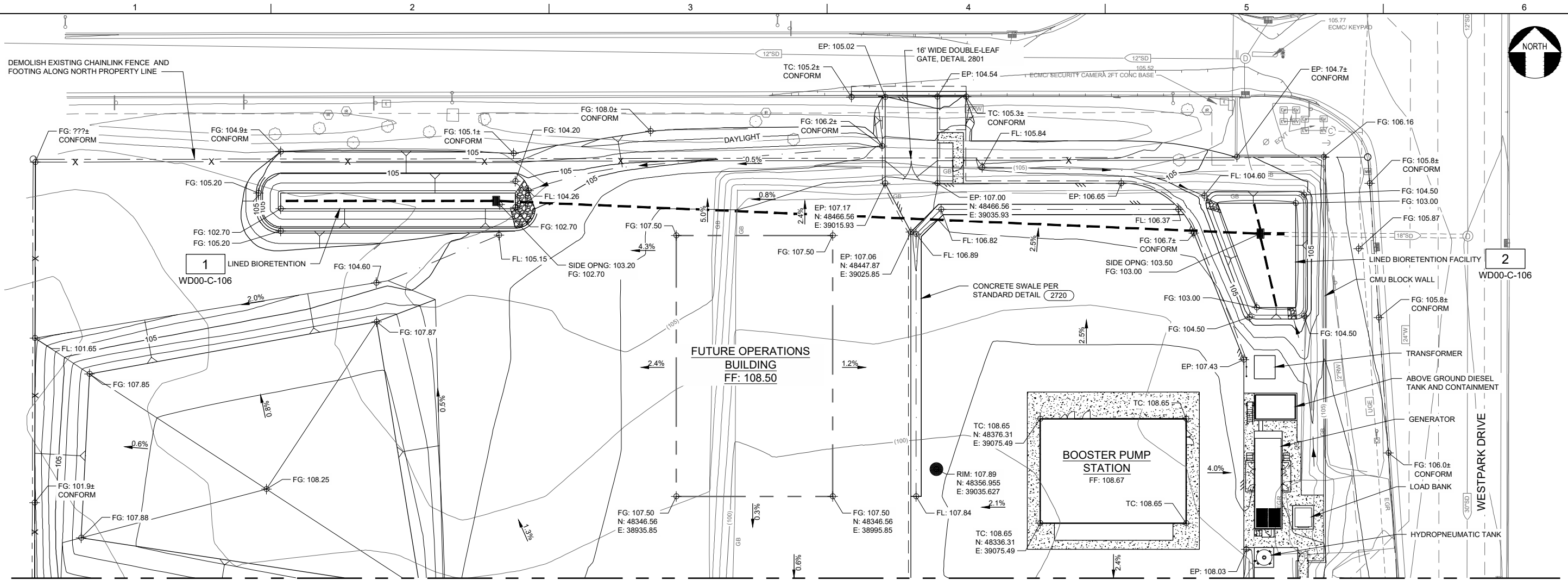
30 0 30 60 FEET
SCALE 1"=30'



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DESIGN P WEBSTER	DRAWN P WEBSTER	CHECKED C BERTSCH	APPROVED M FISHER
WATERWORKS ENGINEERS 2250 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-3888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
CIVIL OVERALL SITE PLAN			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-C-101			
SHEET NUMBER 54			

L:\CAD\PROJECTS\17-083 ROSEVILLE WEST SIDE TANK - PS_(S)\PROJECT FILES\DELIVERABLES\WD5400C102.DWG



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JOB NUMBER: 17-083

FILENAME: WD5400C102.DWG

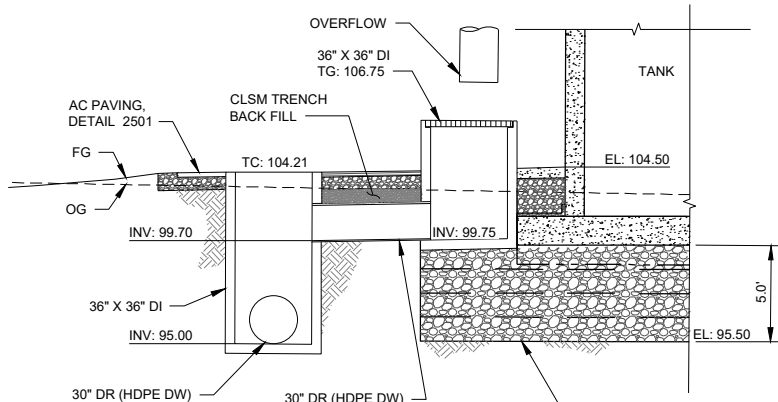
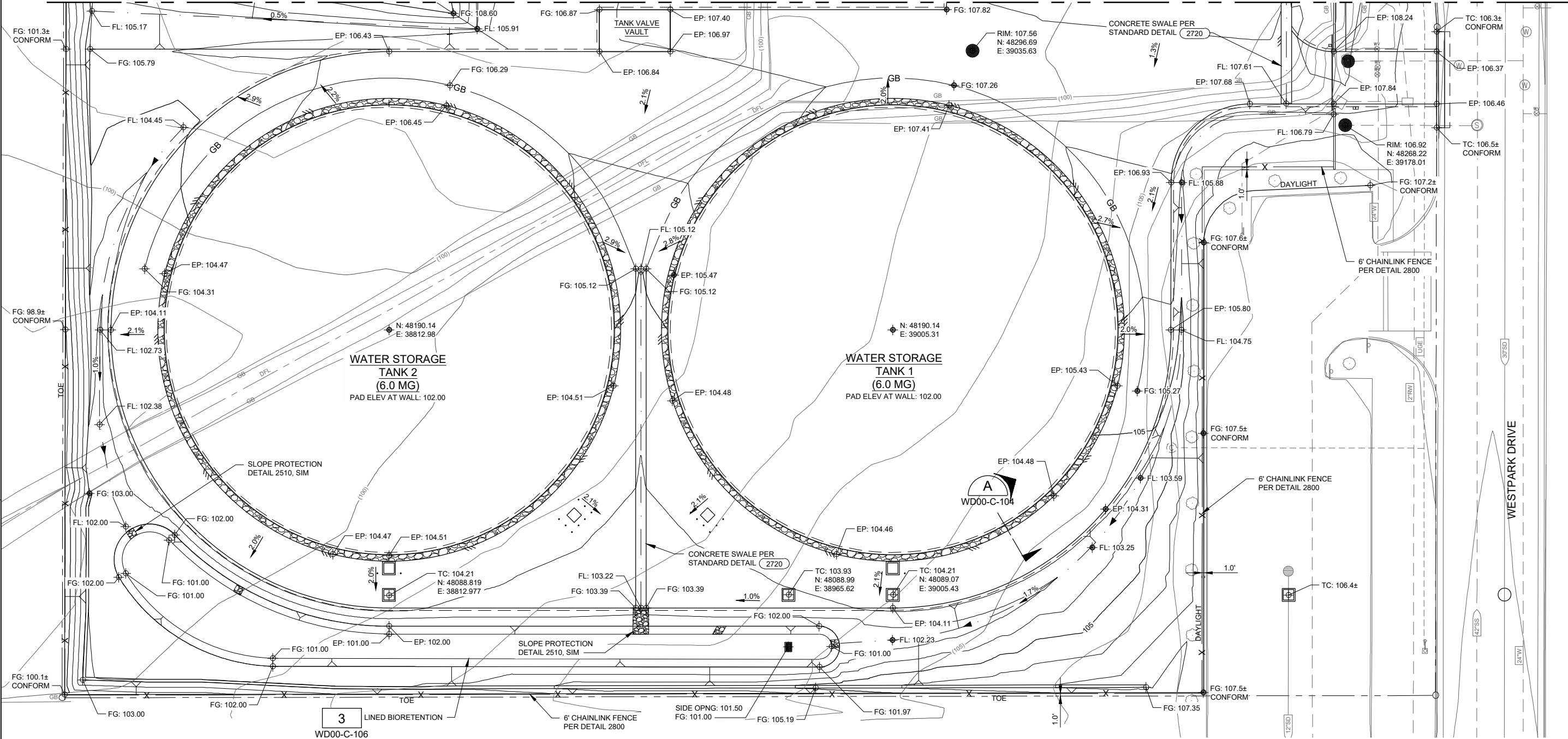
PLOT DATE: 11/7/19

PLOT TIME: 13:55:00

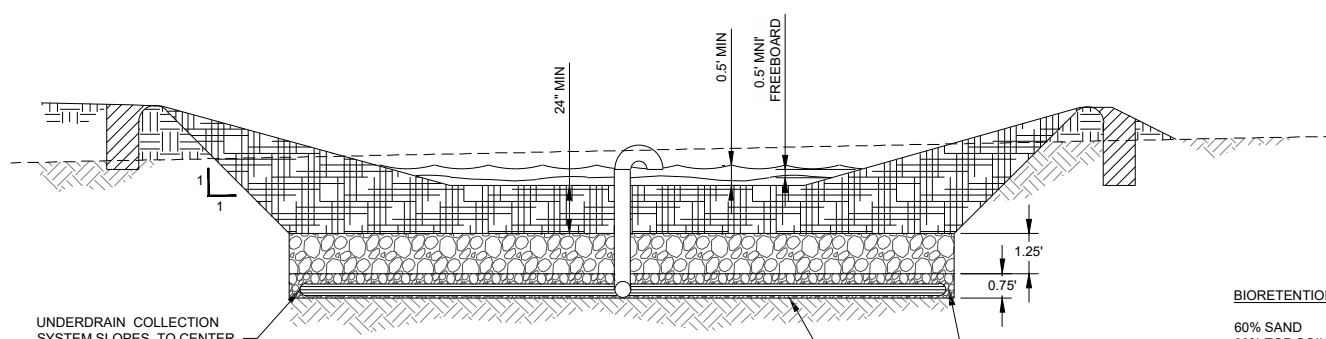
DESIGN P WEBSTER	DRAWN P WEBSTER	CHECKED C BERTSCH	APPROVED M FISHER
CITY OF ROSEVILLE ROSEVILLE, CALIFORNIA			
WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-9888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
CIVIL GRADING PLAN - NORTH			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-C-102			
SHEET NUMBER 55			

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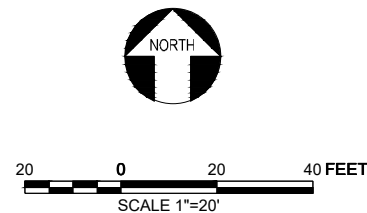
MATCHLINE
SEE DWG WD00-C-102



D SECTION
WD00-C-101 NTS



E SECTION
WD00-C-101 NTS



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JOB NUMBER: 17-083

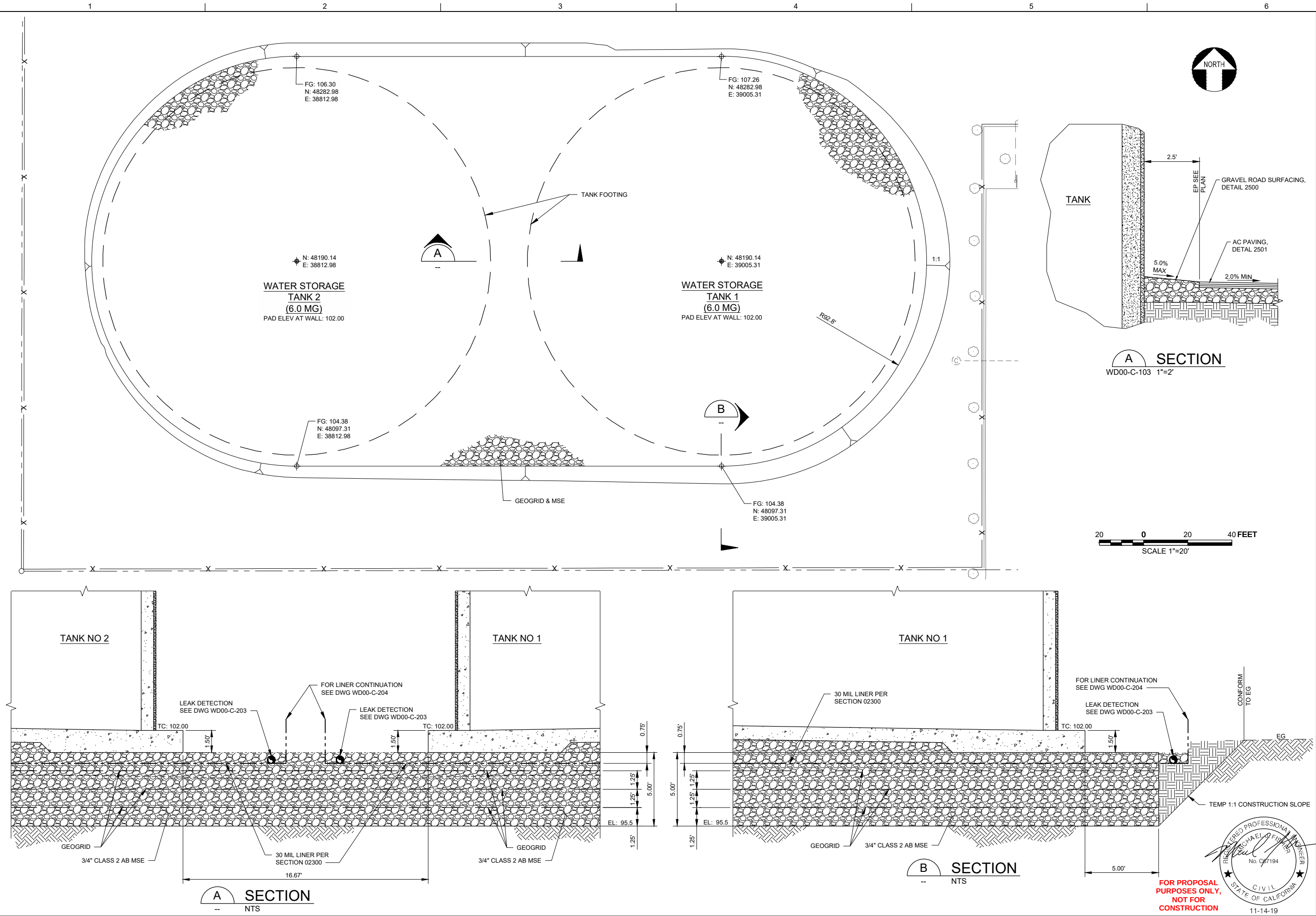
FILENAME: WD5400C103.DWG

PLOT DATE: 11/7/19

PLOT TIME: 13:55:18

DESIGN P WEBSTER	 CITY OF ROSEVILLE CALIFORNIA	WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-9888
DRAWN P WEBSTER		
CHECKED C BERTSCH		
APPROVED M FISHER		
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA		
CIVIL GRADING PLAN - SOUTH		
DATE NOVEMBER 2019		
PROJECT NUMBER 17-083		
DRAWING NUMBER WD00-C-103		
SHEET NUMBER 56		

L:\CAD\PROJECTS\17-083 ROSEVILLE WEST SIDE TANK - PS_(S)\PROJECT FILES\DELIVERABLES\WD5400C104.DWG



DESIGN P WEBSTER	CITY OF ROSEVILLE CALIFORNIA	WATERWORKS ENGINEERS 2280 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-3888	CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	CIVIL	PARTIAL PLAN AND SECTIONS	DATE NOVEMBER 2019
DRAWN P WEBSTER						PROJECT NUMBER 17-083
CHECKED C BERTSCH						DRAWING NUMBER WD00-C-104
APPROVED M FISHER						SHEET NUMBER 57

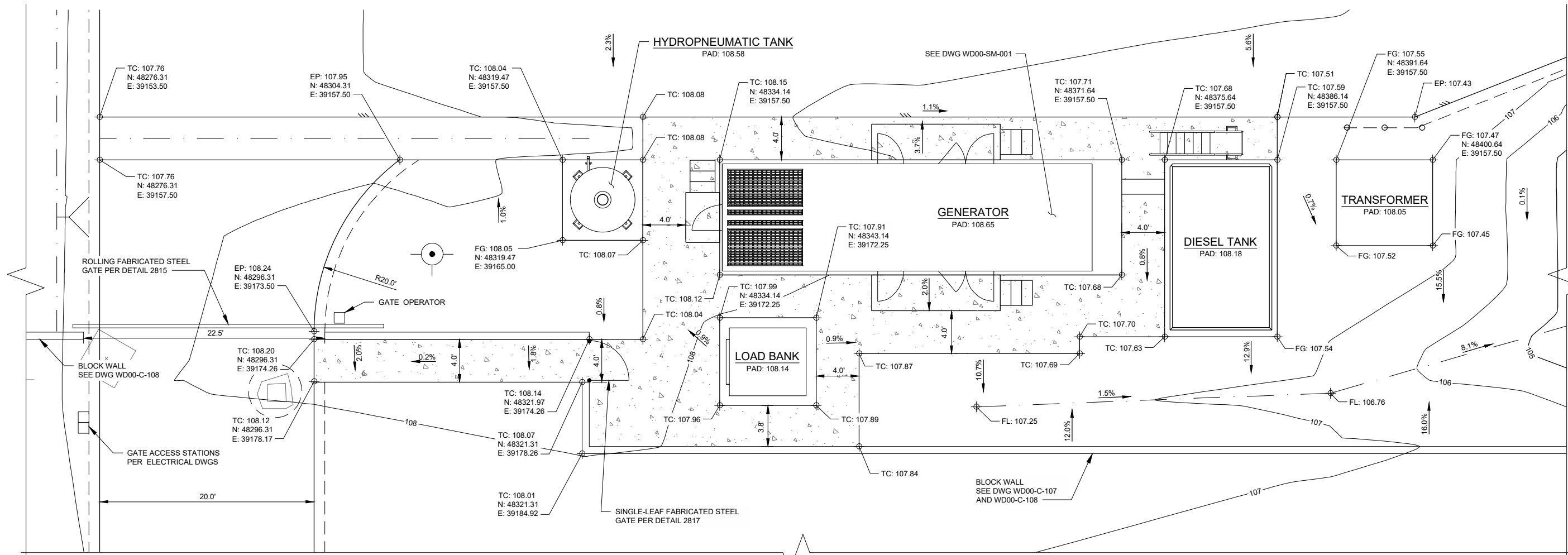
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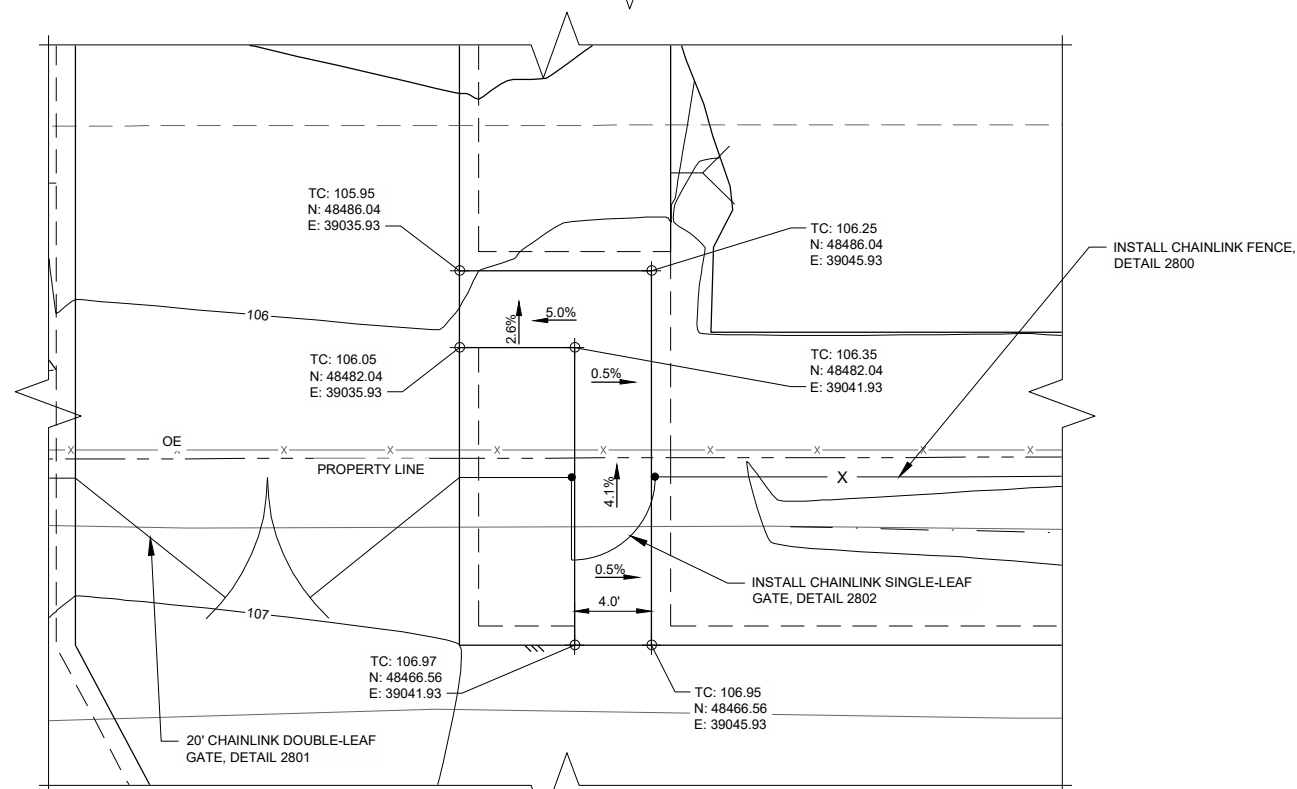
PLOT DATE: 11/7/19

PLOT TIME: 13:55:30

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2 DETAIL
WD00-C-101 SCALE: 1"=5'



1 DETAIL
WD00-C-101 SCALE: 1"=5'



5 0 5 10 FEET
SCALE 1"=5'

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DESIGN P WEBSTER	DRAWN P WEBSTER	CHECKED C BERTSCH	APPROVED M FISHER
			
			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
CIVIL DETAILS			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-C-105			
SHEET NUMBER 58			

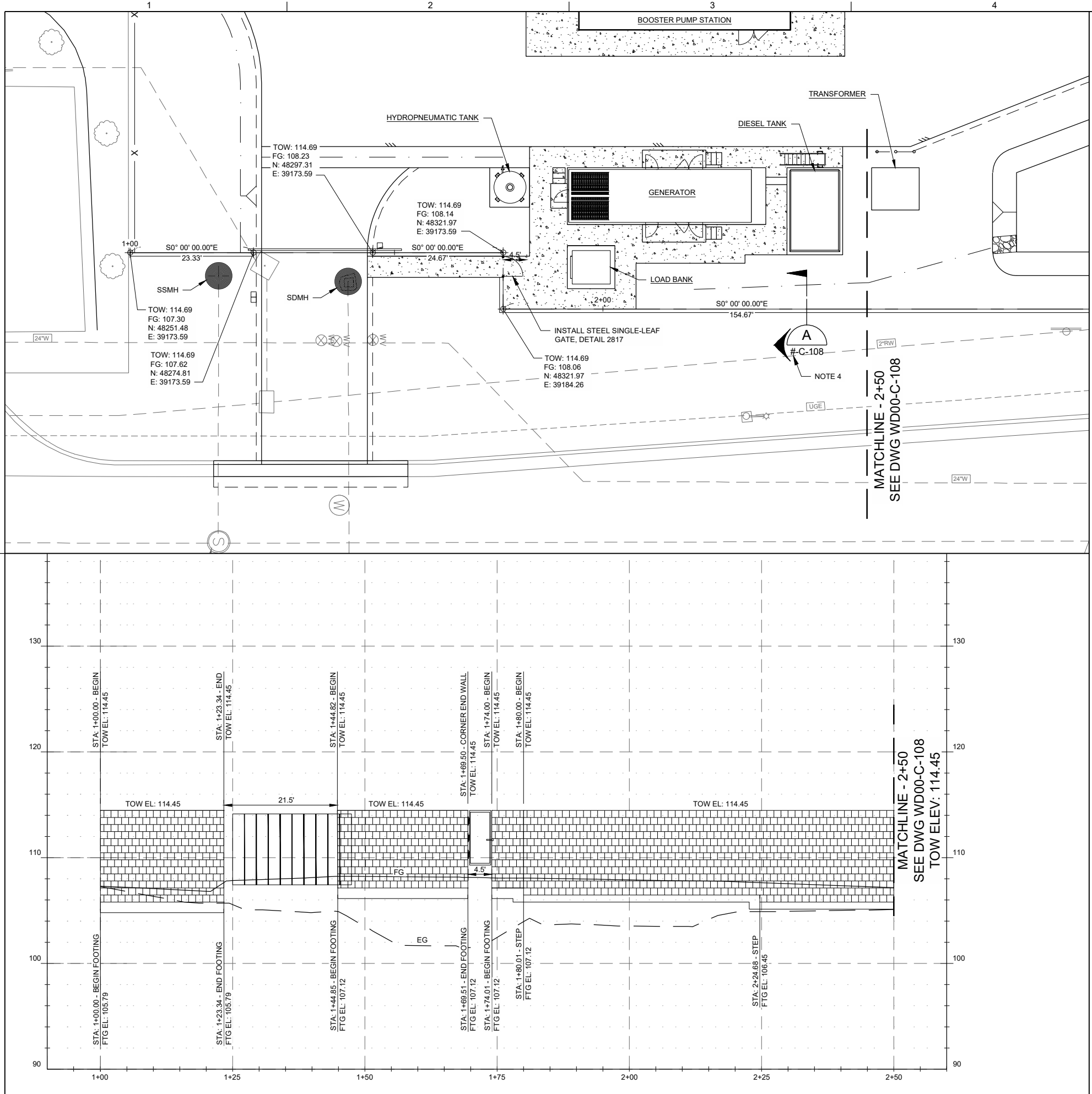
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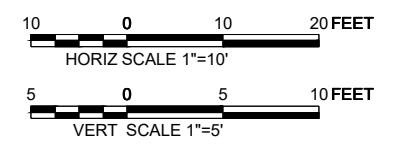
PLOT DATE: 11/7/19

PLOT TIME: 13:55:54

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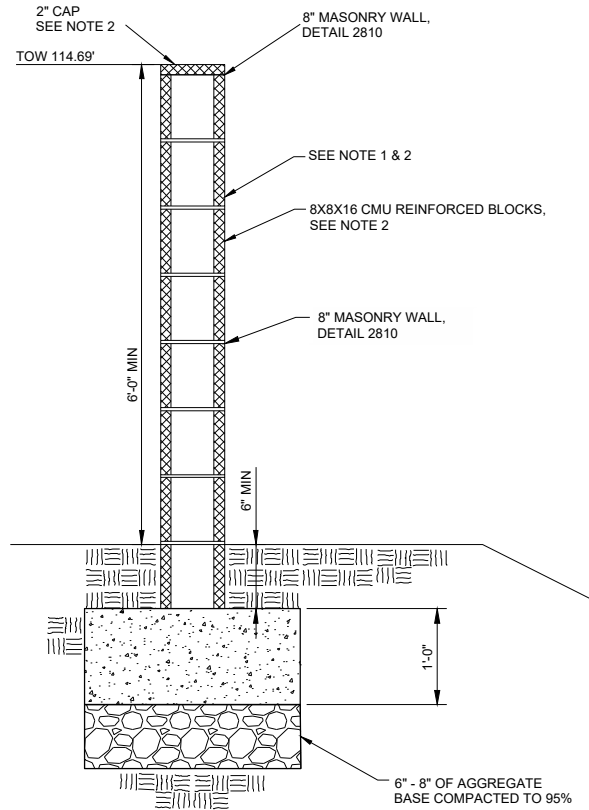
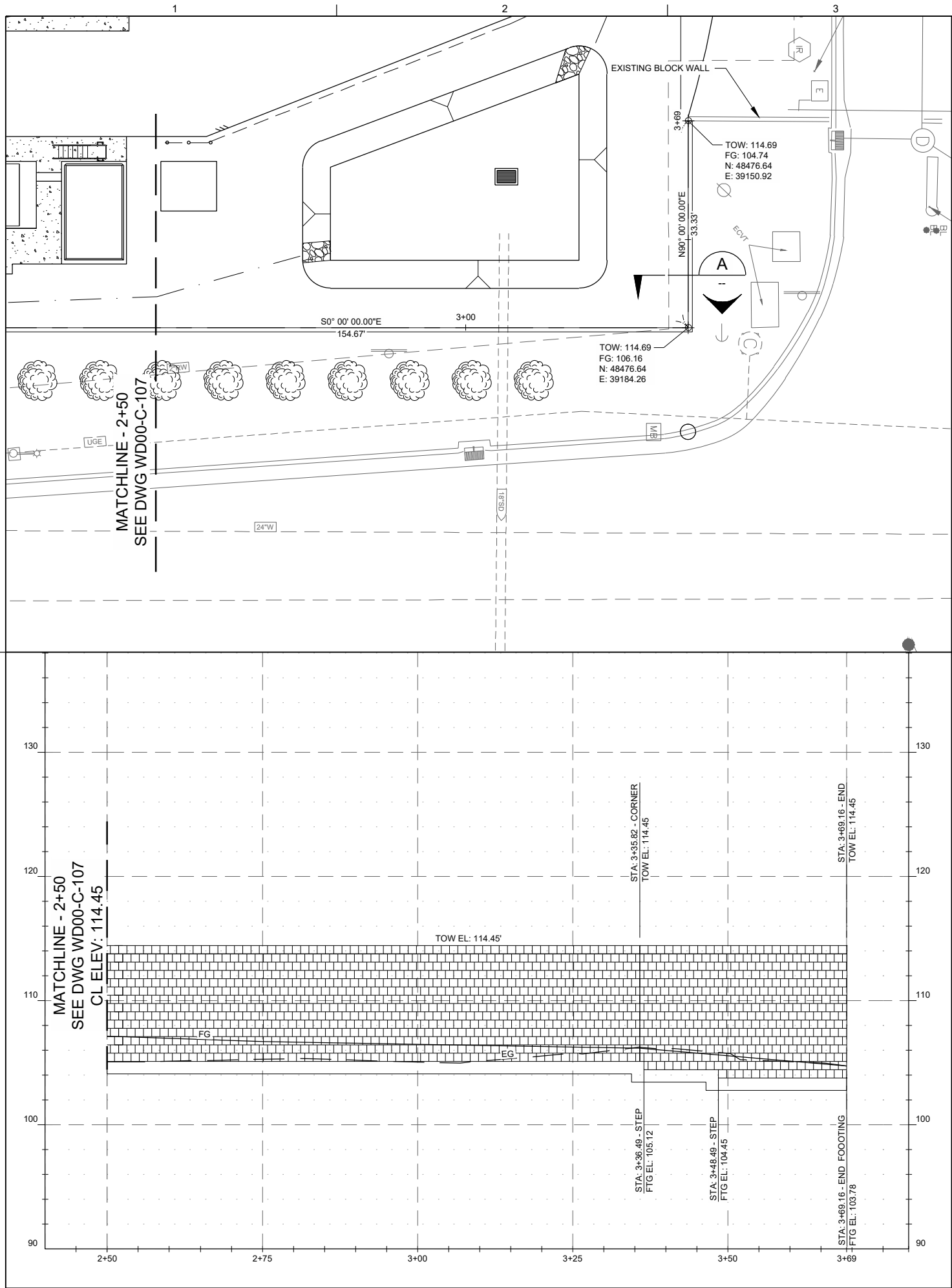
- NOTES:
1. APPLY ANTI-GRAFFITI COATING TO ALL EXTERIOR FACES OF CMU WALL. SHERWIN WILLIAMS B97C150 12 MILS WFT.
 2. ALL CMU BLOCKS AND WALL CAPS TO BE GRAY SPLIT FACED BLOCKS.
 3. WALL IS 6' TALL FROM FINISHED GRADE.
 4. REPLACE "#" IN DRAWING REFERENCES WITH "WD00".



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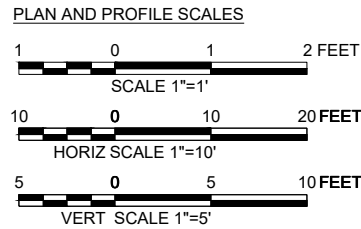
DESIGN P WEBSTER	DRAWN P WEBSTER	CHECKED C BERTSCH	APPROVED M FISHER	 CITY OF ROSEVILLE CALIFORNIA	WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-9888	CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	CIVIL WALL PLAN AND PROFILE BEG TO 2+50	DATE NOVEMBER 2019
								PROJECT NUMBER 17-083
								DRAWING NUMBER WD00-C-107
								SHEET NUMBER 60

L:\CAD\PROJECTS\17-083 ROSEVILLE WEST SIDE TANK - PS_(S)\PROJECT FILES\DELIVERABLES\WD5400C108.DWG



A TYP SECTION
WD00-C-107
SCALE: 1"=1'

- NOTES:
1. APPLY ANTI-GRAFFITI COATING TO ALL EXTERIOR FACES OF CMU WALL. SHERWIN WILLIAMS B97C150 12 MILS WFT.
 2. ALL CMU BLOCKS AND WALL CAPS TO BE GRAY SPLIT FACED BLOCKS.
 3. WALL IS 6' TALL FROM FINISHED GRADE.

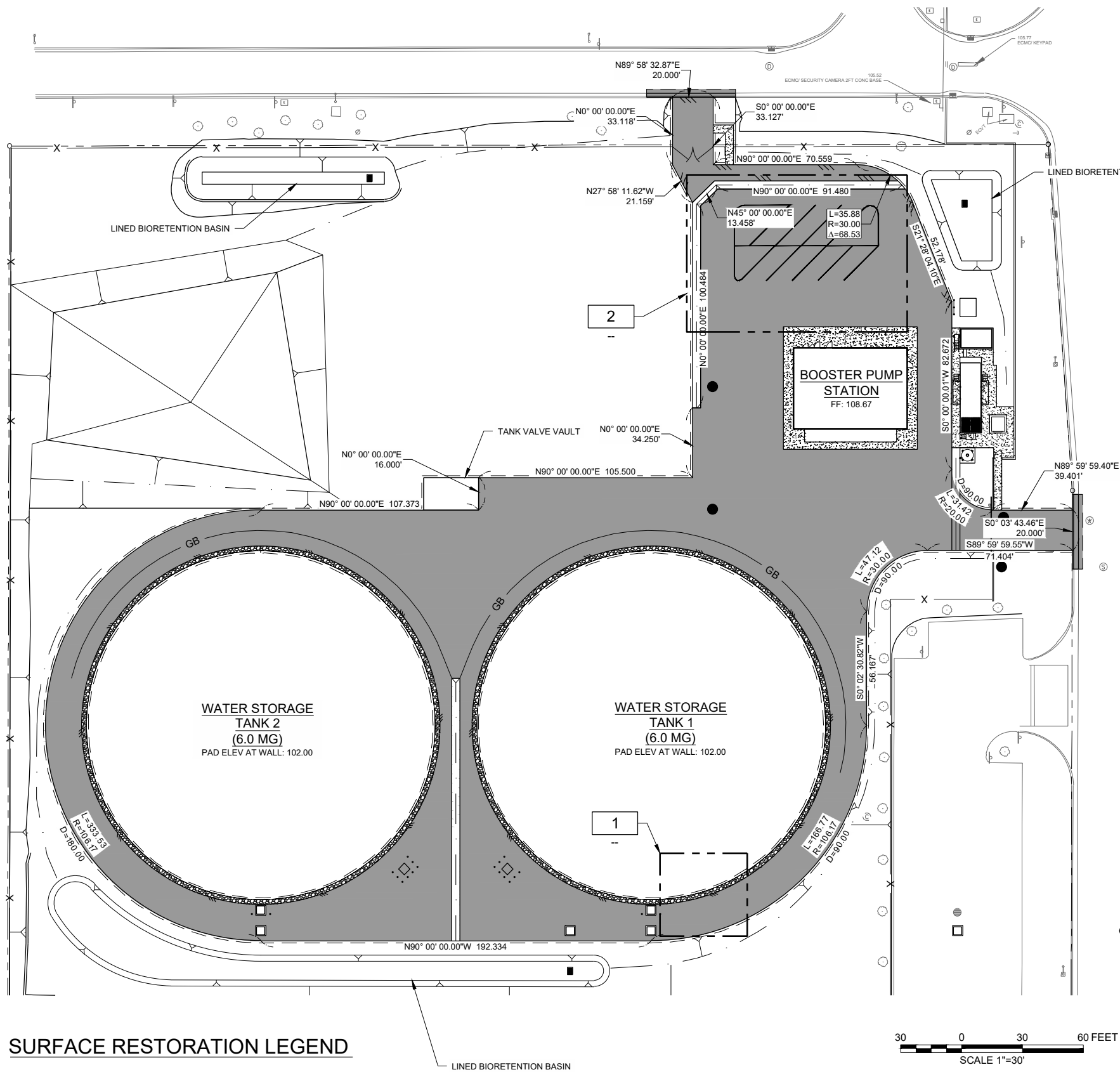


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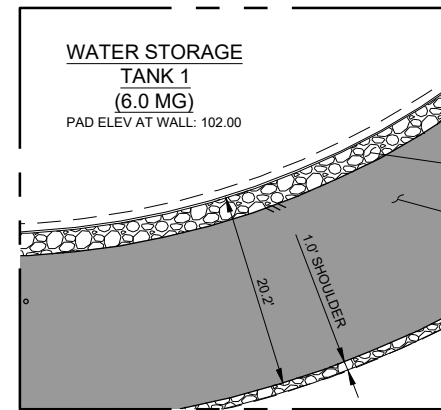
DESIGN P WEBSTER	CITY OF ROSEVILLE ENGINEERS 2280 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-9888	CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	CIVIL WALL PLAN AND PROFILE 2+50 TO END	DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-C-108 SHEET NUMBER 61
DRAWN P WEBSTER				
CHECKED C BERTSCH				
APPROVED M FISHER				

L:\CAD\PROJECTS\17-083 ROSEVILLE WEST SIDE TANK - PS_(S)\PROJECT FILES\DELIVERABLES\WD5400C109.DWG

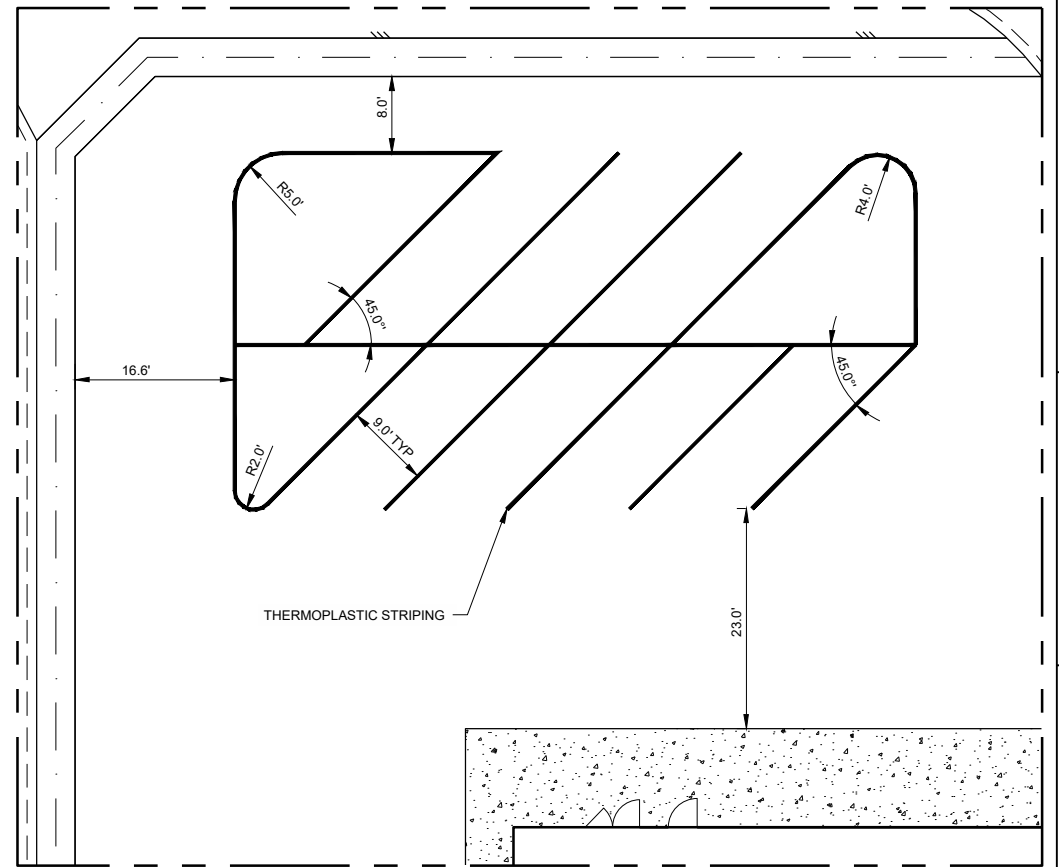


SURFACE RESTORATION LEGEND

- GRAVEL ROAD SURFACING, DETAIL 2500
- AC PAVEMENT, DETAIL 2501
- CONCRETE



1 DETAIL
1"=10'



2 DETAIL
1"=10'

10 0 10 20 FEET
SCALE 1"=10'



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CONSTRUCTION

JOB NUMBER: 17-083

FILENAME: WD5400C109.DWG

PLOT DATE: 11/7/19

PLOT TIME: 13:57:09

WATERWORKS ENGINEERS
2260 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-3888

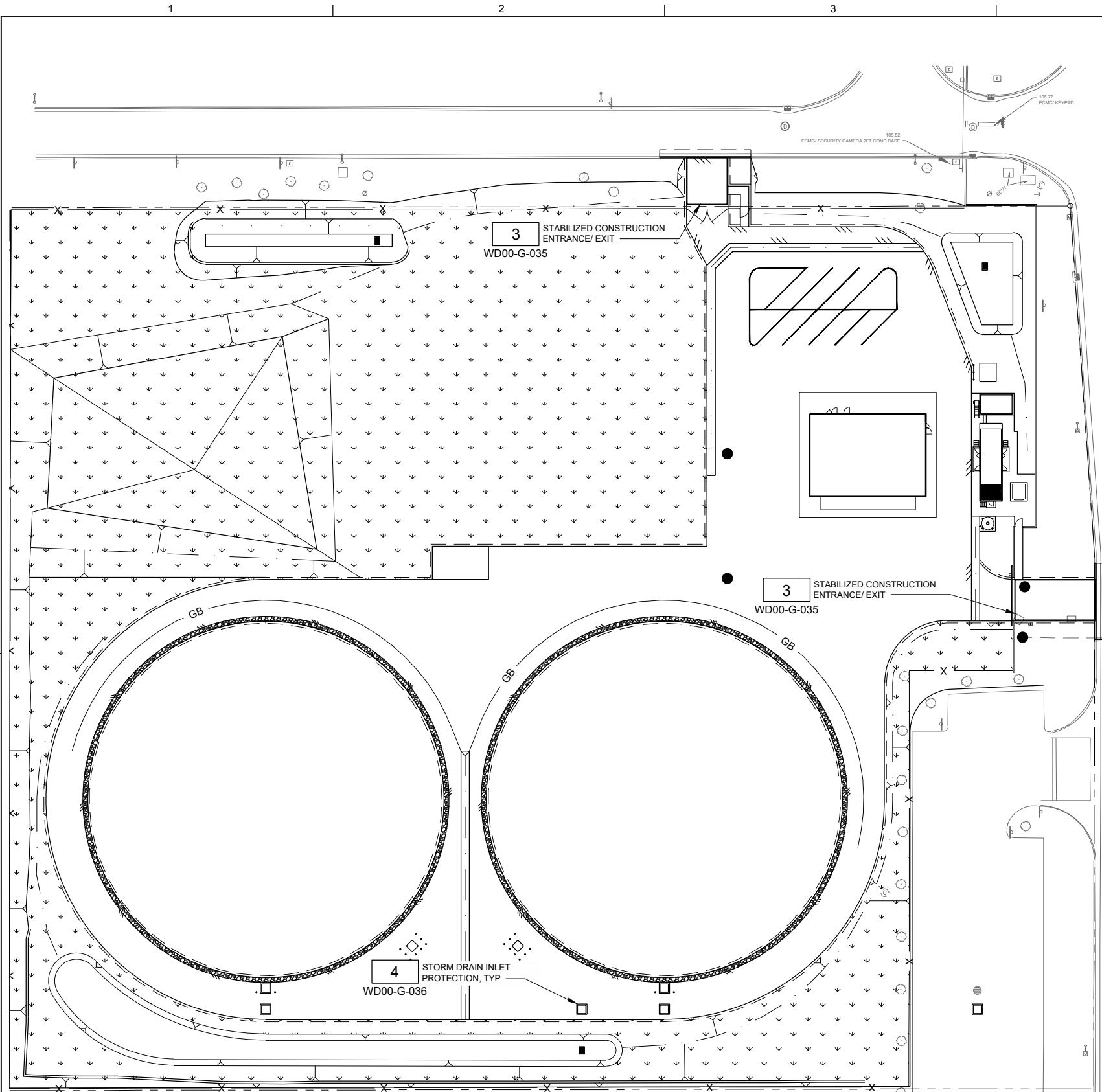
CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

CIVIL
SURFACE RESTORATION PLAN

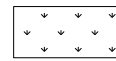
DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD00-C-109
SHEET NUMBER 62

DESIGN
P. WEBSTER
DRAWN
P. WEBSTER
CHECKED
C. BERTSCH
APPROVED
M. FISHER

L:\CAD\PROJECTS\17-083 ROSEVILLE WEST SIDE TANK - PS_(S)\PROJECT FILES\DELIVERABLES\WD5400C110.DWG



EROSION CONTROL LEGEND

 HYDROSEED AND INSTALL EROSION CONTROL MEASURES ON ALL DISTURBED AREAS PER SECTION 02936.

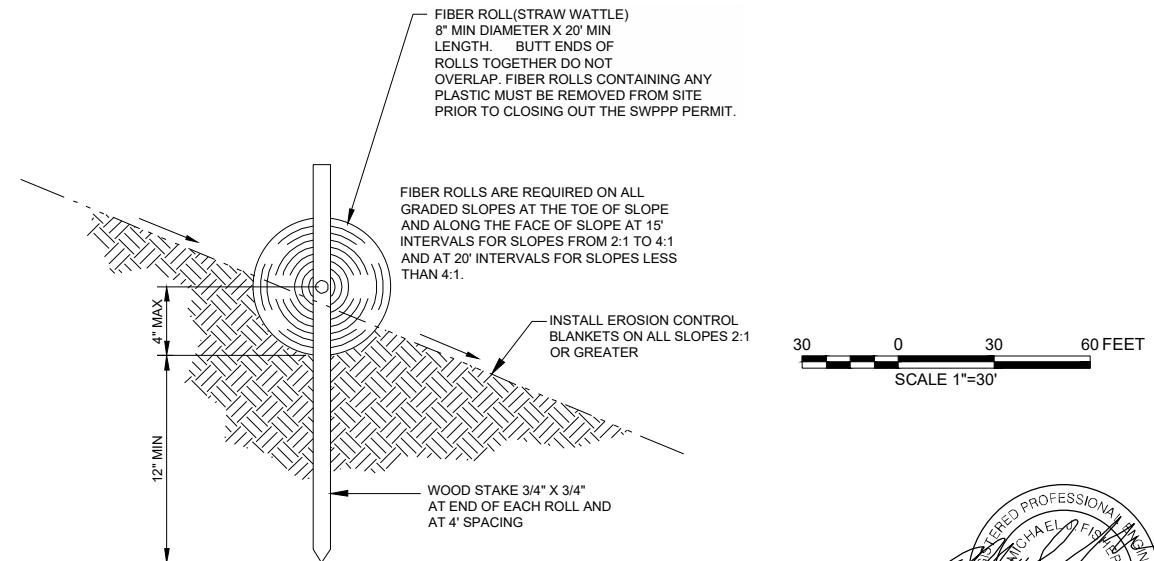
SLOPE TABLE	
SLOPE PERCENTAGE	SHEET FLOW LENGTH NOT TO EXCEED
0-25%	20 FEET
26-50%	15 FEET
OVER 51%	10 FEET

NOTES:

- EROSION CONTROL PER BEST MANAGEMENT PRACTICES AND EROSION NOTES AND DETAILS, SEE PAGES SD-16 AND SD-17.
- HYDROSEEDING (OR EQUIVALENT VEGETATION) WILL BE APPLIED TO INACTIVE DISTURBED AREAS THAT ARE DEEMED SUBSTANTIALLY COMPLETE. HYDROSEEDING (OR EQUIVALENT) WILL BE RE-APPLIED AS NEEDED TO MAINTAIN EFFECTIVENESS.
- STRAW MULCH WILL BE APPLIED TO ALL INACTIVE DISTURBED AREAS. AN INACTIVE DISTURBED AREA IS DEFINED AS AN AREA THAT HAS BEEN DISTURBED, IS NOT YET STABILIZED, AND WORK IS NOT SCHEDULED TO RESUME AT THE AREA WITHIN 14 DAYS. STRAW MULCH WILL BE RE-APPLIED AS NEEDED TO MAINTAIN EFFECTIVENESS.
- DISTURBED SLOPES THAT ARE NOT DEEMED SUBSTANTIALLY COMPLETE WILL BE STABILIZED WITH PLASTIC COVERS (HYDROSEEDING WILL BE USED WHEN DISTURBED SLOPES ARE DEEMED SUBSTANTIALLY COMPLETE). LINEAR SEDIMENT CONTROLS WILL BE DEPLOYED AT THE BASE OF AREAS PROTECTED WITH PLASTIC COVERS.
- LINEAR SEDIMENT CONTROLS (SILT FENCING, FIBER ROLLS, ETC.) WILL BE DEPLOYED ON DISTURBED SLOPES THAT HAVE A SLOPE UP TO 1:4 (V:H), AND A SLOPE LENGTH LESS THAN 100 FEET (FIBER ROLLS WILL BE USED WHEN SLOPE LENGTH EXCEEDS 100 FEET). FIBER ROLLS WILL BE DEPLOYED ON DISTURBED SLOPES GREATER THAN, OR EQUAL TO, 1:4 (V:H). THE CONTRACTOR SHALL APPLY LINEAR SEDIMENT CONTROLS ALONG THE TOE OF THE SLOPE, FACE OF THE SLOPE, AND AT THE GRADE BREAKS OF EXPOSED SLOPES TO COMPLY WITH SHEET FLOW LENGTHS IN ACCORDANCE WITH TABLE 300-1 "CRITICAL SLOPE/SHEET FLOW LENGTH COMBINATIONS", LOCATED ON THIS SHEET. ADDITIONALLY, LINEAR SEDIMENT CONTROLS WILL BE USED AS A PERIMETER CONTROL TO CONTAIN SEDIMENT WITHIN THE PROJECT AREA. IT IS NOT NECESSARY TO DEPLOY PERIMETER CONTROLS AT LOCATIONS WHERE SEDIMENT IS UNABLE TO LEAVE THE PROJECT SITE (SUCH AS AREAS THAT SLOPE INWARD).
- CHECK DAMS WILL BE DEPLOYED TO SLOW FLOW VELOCITIES IN UNLINED SWALES UNTIL GRASS IS ESTABLISHED.
- THE CONTRACTOR SHALL INSPECT ALL IMMEDIATE ACCESS ROADS DAILY. THE CONTRACTOR SHALL REMOVE ANY SEDIMENT OR OTHER CONSTRUCTION ACTIVITY RELATED MATERIALS THAT ARE DEPOSITED ON THE ROADS BY VACUUMING OR SWEEPING ON A DAILY BASIS AND PRIOR TO ANY RAIN EVENT.
- ANY STORM DRAIN INLETS DOWN GRADIENT OF DISTURBED SOIL AREAS WILL BE PROTECTED.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT WILL BE CONSTRUCTED. CONSTRUCTION ACTIVITY TRAFFIC TO AND FROM THE PROJECT WILL BE LIMITED TO THESE STABILIZED CONSTRUCTION ENTRANCES/EXITS. IF THE PROJECT'S STABILIZED CONSTRUCTION ENTRANCES/EXITS DO NOT SUFFICIENTLY REMOVE SEDIMENT FROM THE TIRES OF CONSTRUCTION VEHICLES AND EQUIPMENT, AN ENTRANCE/OUTLET TIRE WASH WILL BE CONSTRUCTED. ADDITIONAL TIRE WASHES WILL BE CONSTRUCTED AS NEEDED.
- ALL STOCKPILES WILL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM CONCENTRATED FLOWS OF STORM WATER, DRAINAGE COURSES, AND INLETS. ALL STOCKPILES WILL BE BERMED. ADDITIONALLY, STOCKPILES WILL BE COVERED AT ALL TIMES (TO PROTECT THEM FROM THE WIND AND THE RAIN) WHEN THEY ARE NOT ACTIVELY BEING USED. STOCKPILES THAT ARE UNSTABILIZED DURING CONSTRUCTION ACTIVITIES WILL BE SPRAYED WITH WATER AS NEEDED FOR DUST CONTROL.
- AN ABOVE GRADE OR MOBILE CONCRETE WASHOUT WILL BE CONSTRUCTED OR PLACED AT THE STAGING AREA IF CONCRETE TRUCKS OR CONCRETE EQUIPMENT WILL BE WASHED ON-SITE. THE WASHOUT WILL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM CONCENTRATED FLOWS OF STORM WATER, DRAINAGE COURSES, AND INLETS. ADDITIONAL WASHOUTS WILL BE UTILIZED AS NEEDED.

EROSION CONTROL NOTES:

- THE STATE'S GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (2009-2009-DWQ) REQUIRES THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR SITES WITH SOIL DISTURBANCES GREATER THAN OR EQUAL TO ONE ACRE, OR FROM SITES SMALLER THAN ONE ACRE IF THE CONSTRUCTION ACTIVITY IS PART OF A LARGER PLAN OF DEVELOPMENT OR SALE THAT DISTURBS ONE ACRE OR MORE. CONSTRUCTION ACTIVITY SHALL NOT COMMENCE, NOR A PRE-CONSTRUCTION MEETING BE PERMITTED TO BE SCHEDULED, PRIOR TO THE SWPPP BEING ACCEPTED BY THE CITY. FOR MORE INFORMATION SEE: http://www.roseville.ca.us/eu/stormwater_management
- THE PROJECT STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IS INCORPORATED BY REFERENCE INTO THIS SET OF PLANS. THE SWPPP IS CONSIDERED A DYNAMIC DOCUMENT AND WILL CHANGE AS CONDITIONS WARRANT. PERMANENT EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AS SHOWN ON THESE PLANS.
- A COPY OF THE SWPPP SHALL BE KEPT AT THE PROJECT SITE AT ALL TIMES.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED AS SPECIFIED IN THE SWPPP.
- ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN ACCORDANCE WITH THE SWPPP.
- THE CONTRACTOR SHALL ESTABLISH A SPECIFIC SITE WITHIN THE DEVELOPMENT FOR MAINTENANCE AND STORAGE OF EQUIPMENT OR ANY OTHER ACTIVITY THAT MAY ADVERSELY CONTRIBUTE TO THE WATER QUALITY OF THE RUNOFF IN ACCORDANCE WITH THE SWPPP.
- NO TRACKING ON PUBLIC STREET.



1 FIBER ROLL DETAIL
-- NTS

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NOT FOR
CONSTRUCTION



DESIGN P WEBSTER	 CITY OF ROSEVILLE CALIFORNIA	A	
DRAWN P WEBSTER			
CHECKED C BERTSCH			
APPROVED M FISHER			
WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-9888 			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			C
CIVIL EROSION CONTROL PLAN			D
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-C-110 SHEET NUMBER 63			

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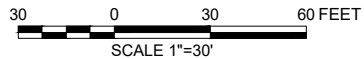
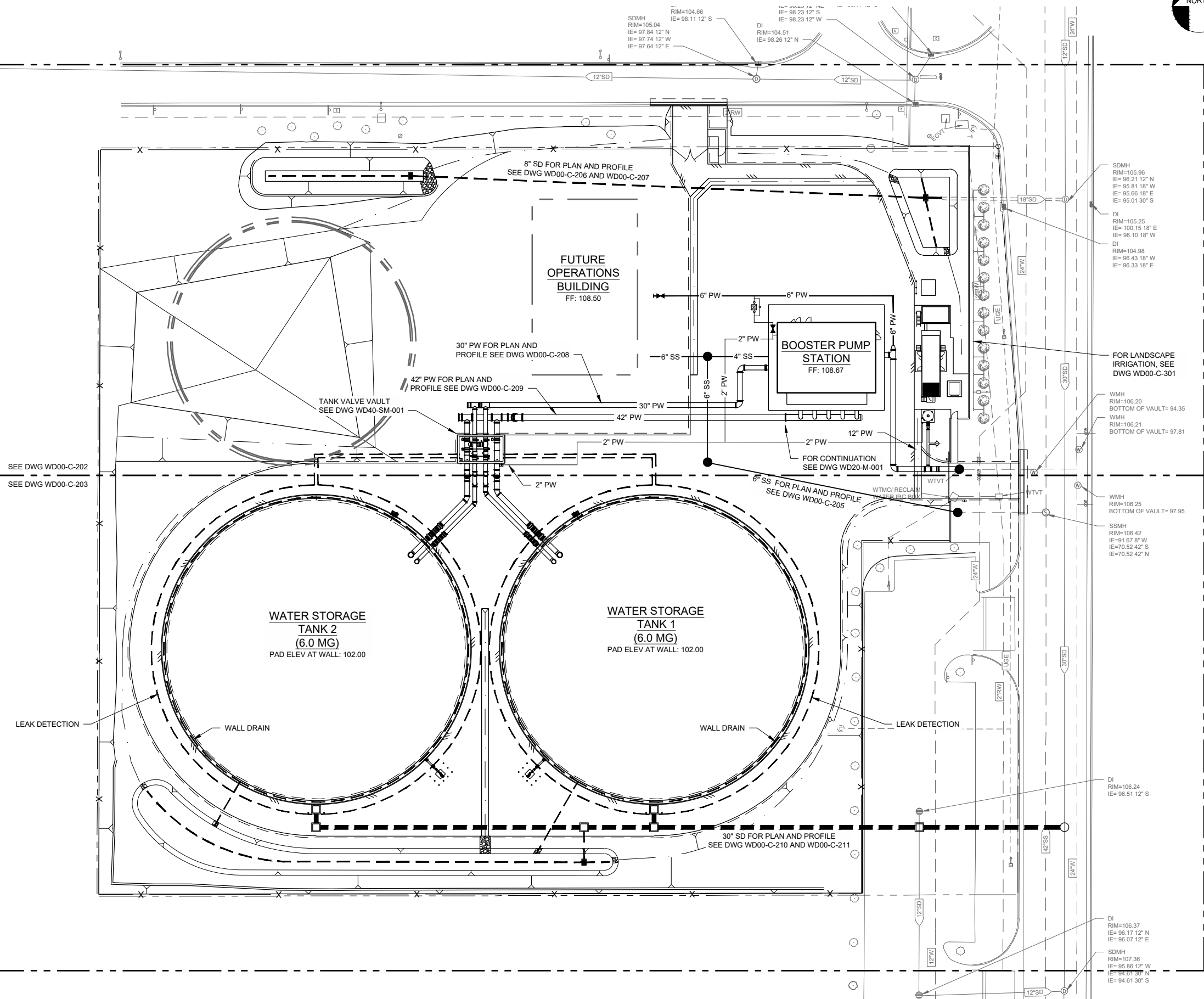
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3

4

5

6



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CONSTRUCTION



JOB NUMBER: 17-083

FILENAME: WD5400C201.DWG

PLOT DATE: 11/7/19

PLOT TIME: 13:57:41

DESIGN
P WEBSTER
DRAWN
P WEBSTER
CHECKED
C BERTSCH
APPROVED
M FISHER



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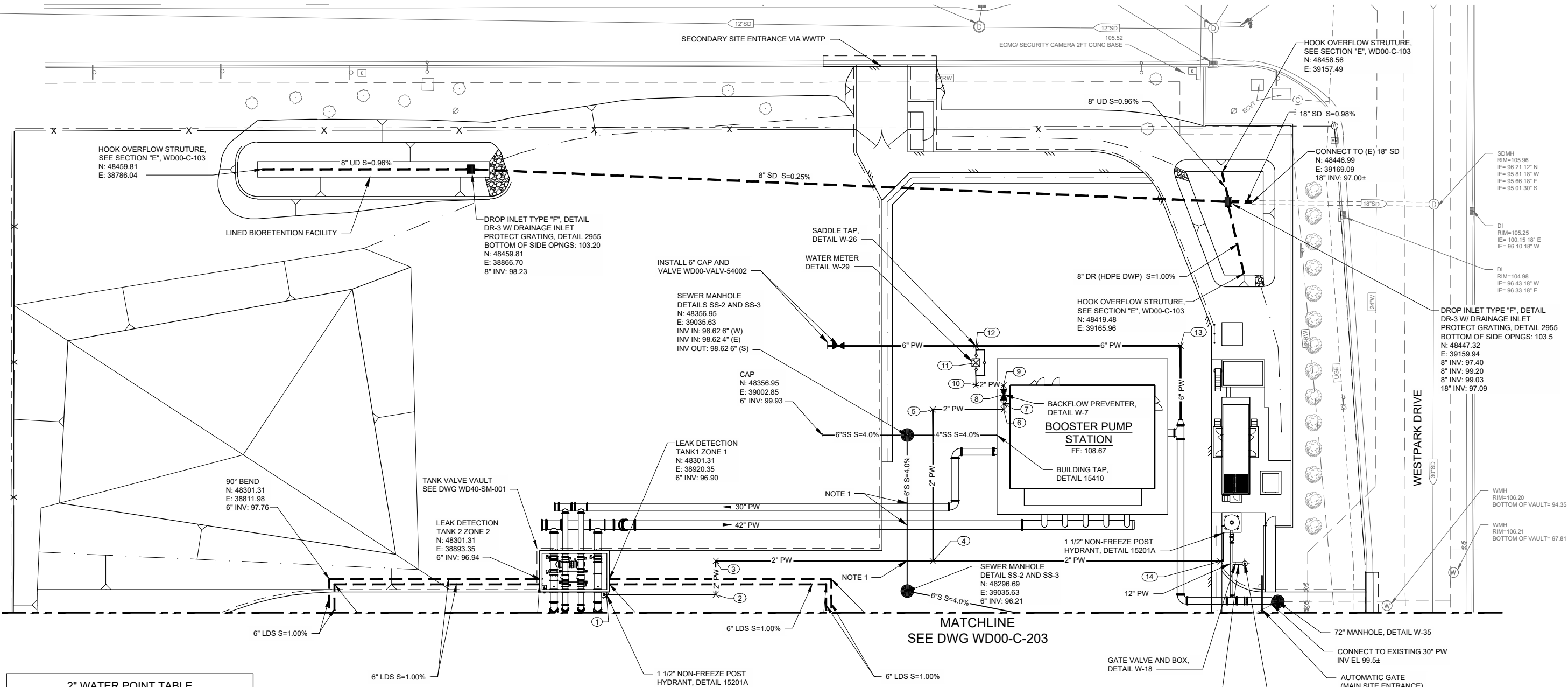
CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

YARD PIPING
OVERALL PLAN

DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD00-C-201
SHEET NUMBER 64

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2" WATER POINT TABLE			
POINT #	NORTHING	EASTING	DESCRIPTION
1	48294.97	38919.25	90° BEND
2	48295.31	38961.56	90° BEND
3	48308.40	38961.57	90° BEND
4	48308.32	39045.63	TEE
5	48366.95	39045.63	90° BEND
6	48366.95	39072.99	90° BEND
7	48369.13	39072.99	TEE
8	48372.72	39072.99	BACKFLOW PREVENTER
9	48376.31	39072.99	90°
10	48376.31	39062.24	90°
11	48385.06	39062.24	WATER METER
12	48391.56	39062.24	TEE
13	48391.56	39141.49	90° BEND
14	48308.23	39156.92	90° BEND



NOTES

1. WATER AND SEWER CROSSING, DETAIL W-39

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JOB NUMBER: 17-083

FILENAME: WD5400C202.DWG

PLOT DATE: 11/7/19

PLOT TIME: 13:58:09

DESIGN
P WEBSTER
DRAWN
P WEBSTER
CHECKED
C BERTSCH
APPROVED
M FISHER

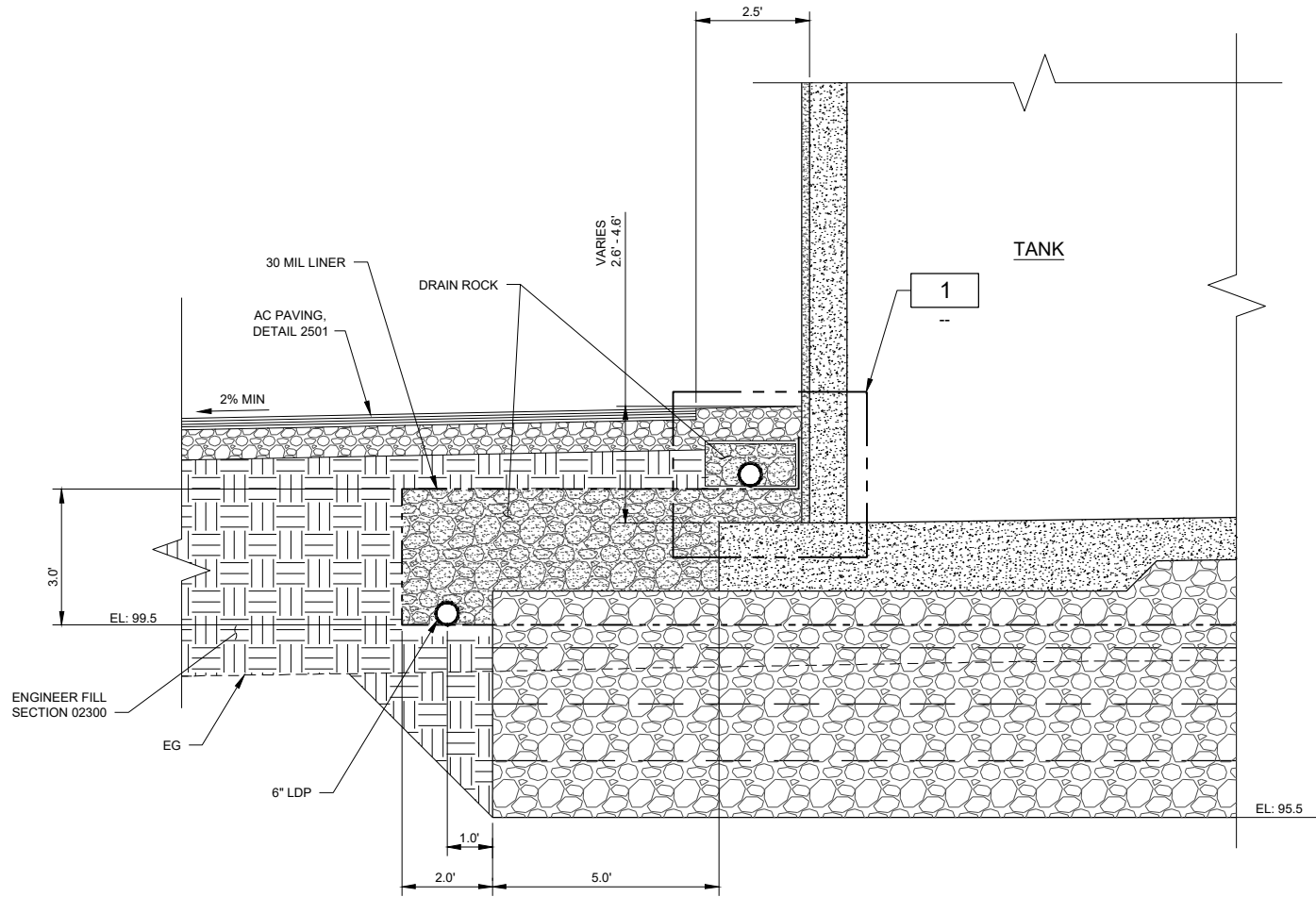


CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

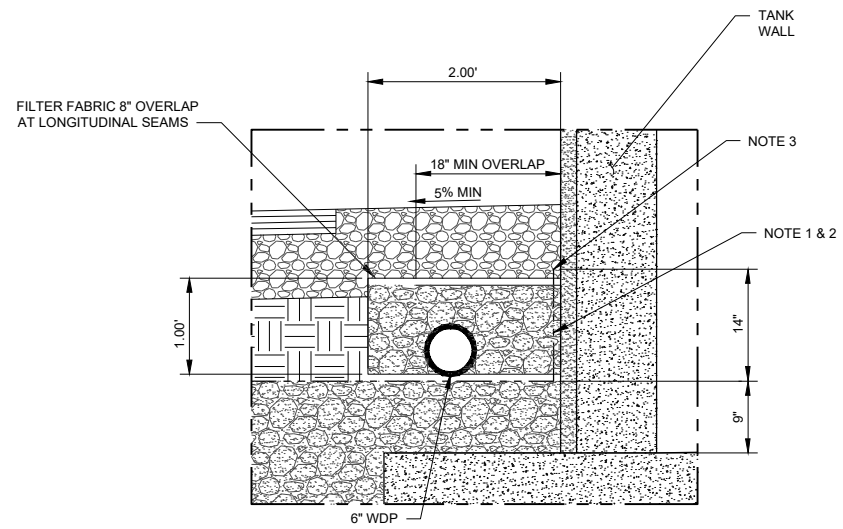
YARD PIPING
PLAN - NORTH

DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD00-C-202
SHEET NUMBER 65

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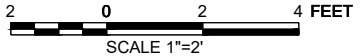
A TYP. SECTION
WD00-C-203 1"= 2'



1 DETAIL
-- NTS

NOTES:

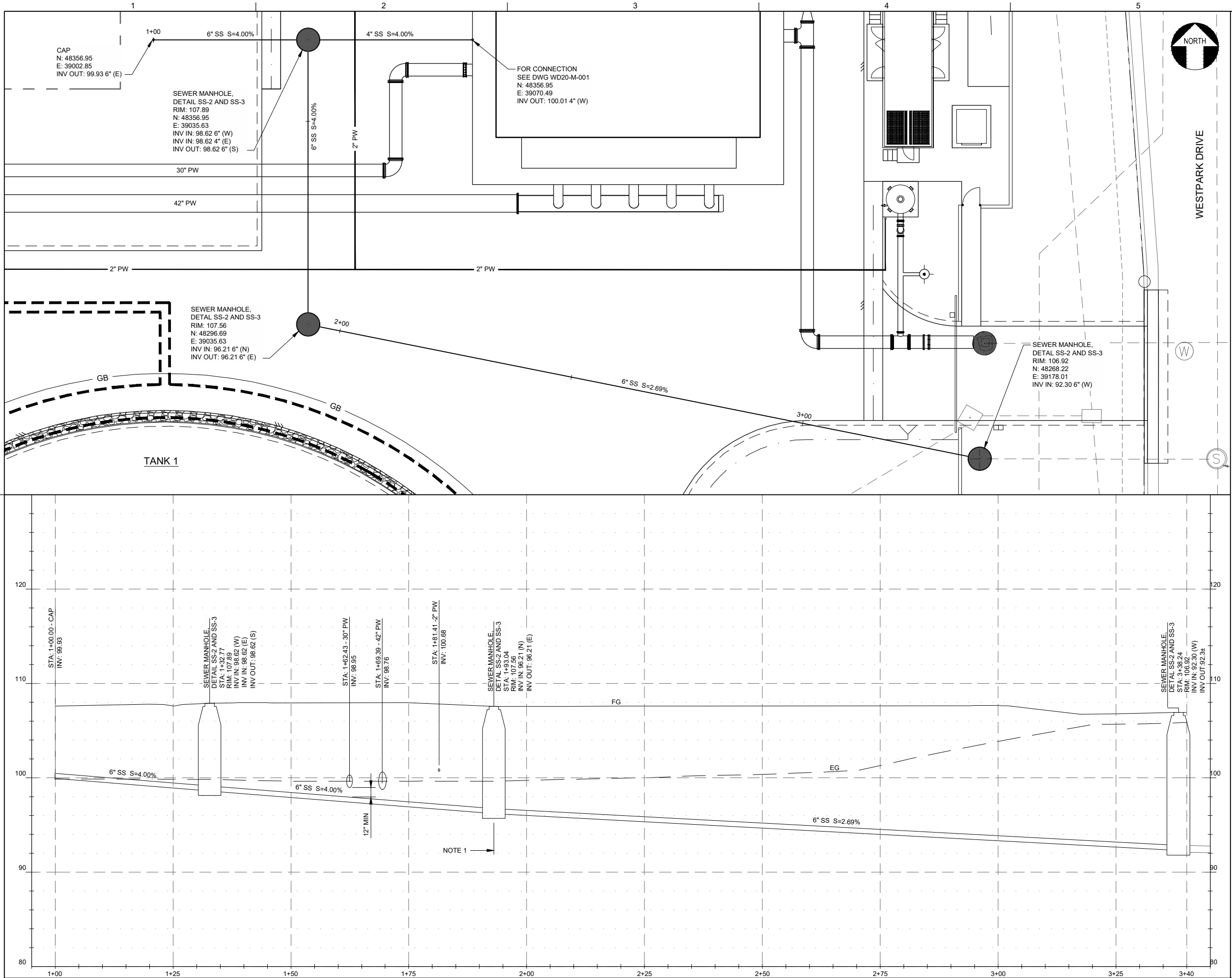
- 30 MIL LINER SHALL BE CUT/FITTED TO PROVIDE A UNIFORM LAYER OF LINER MATERIAL AGAINST TANK WALL. LINER SHALL HAVE A MAX OF 1 FOLD THICKNESS (3 LAYERS OF LINER) AT ANY POINT AROUND TANK.
- LINER SHALL BE HELD TIGHT TO TANK WALL BY TENSIONED BULL TAPE. MINIMUM OF 2 HORIZONTAL WRAPS REQUIRED @ 4" VERTICAL SPACING.
- SEAL TOP EDGE OF 30 MIL LINER TO SHOTCRETE WITH SIKAFLEX 1A.
- INSTALL 12" WIDE X 24" LONG LAYER OF GEOTEXTURE FABRIC AT ALL PIPE JOINTS. TO PROTECT 30 MIL LINER BELOW



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DESIGN P WEBSTER	CITY OF ROSEVILLE CALIFORNIA	WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-9888	CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	SECTIONS AND DETAILS	DATE NOVEMBER 2019
					PROJECT NUMBER 17-083
					DRAWING NUMBER WD00-C-204
					SHEET NUMBER 67

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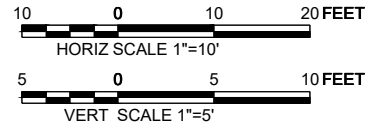
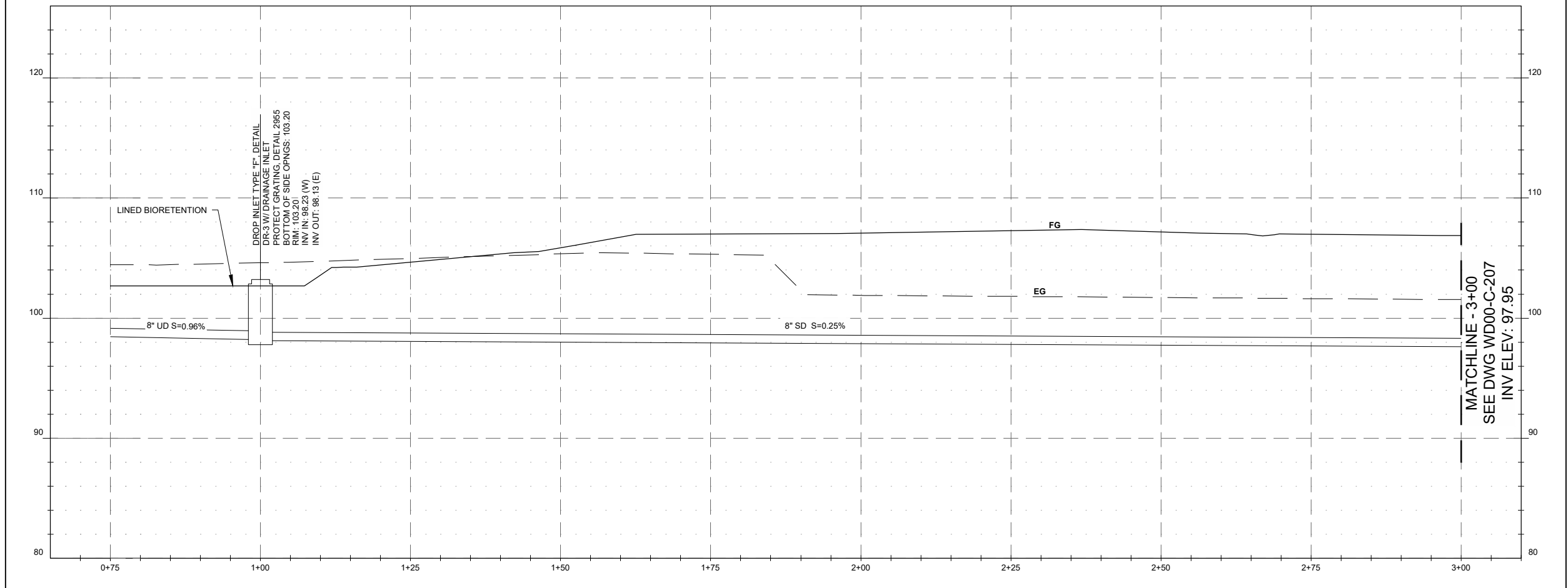
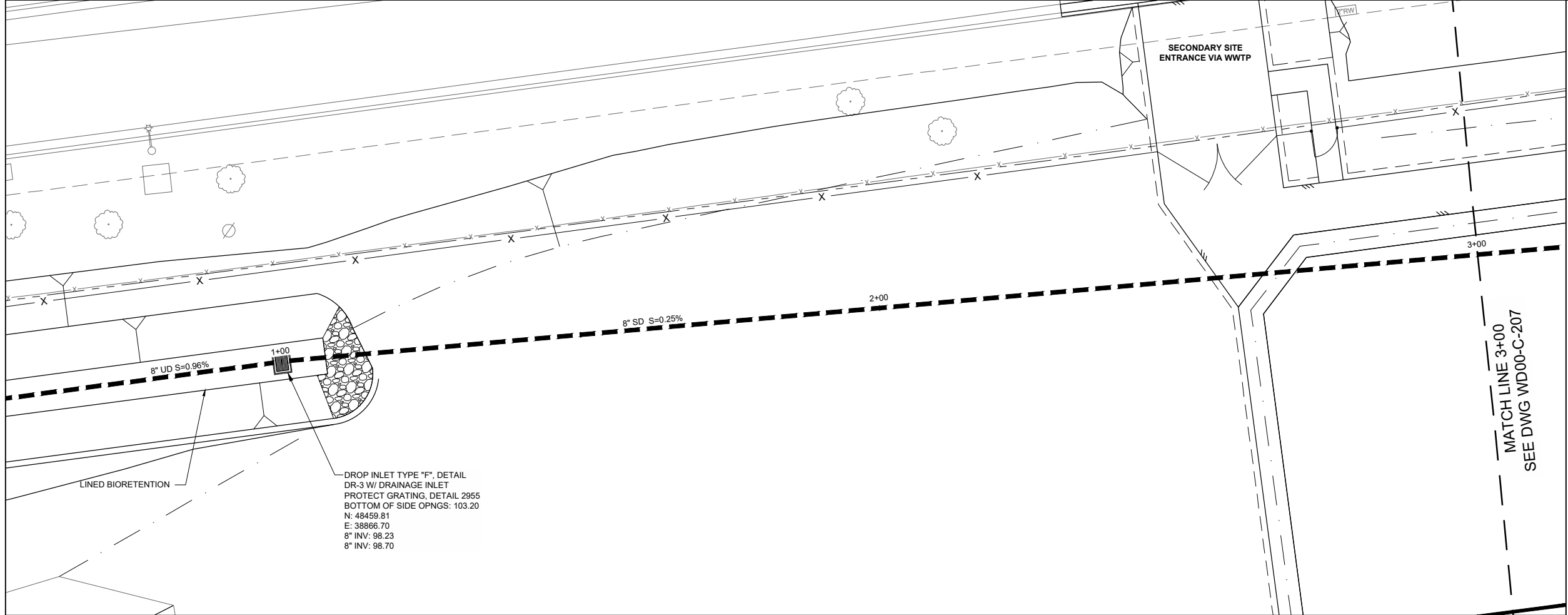
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PLOT DATE: 11/7/19

PLOT TIME: 13:59:05

DESIGN P WEBSTER	 ROSEVILLE CALIFORNIA	 WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-9888
DRAWN P WEBSTER		
CHECKED C BERTSCH		
APPROVED M FISHER		
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2)		CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA
YARD PIPING		SEWER PLAN AND PROFILE
DATE NOVEMBER 2019		SHEET NUMBER 68
PROJECT NUMBER 17-083		
DRAWING NUMBER WD00-C-205		

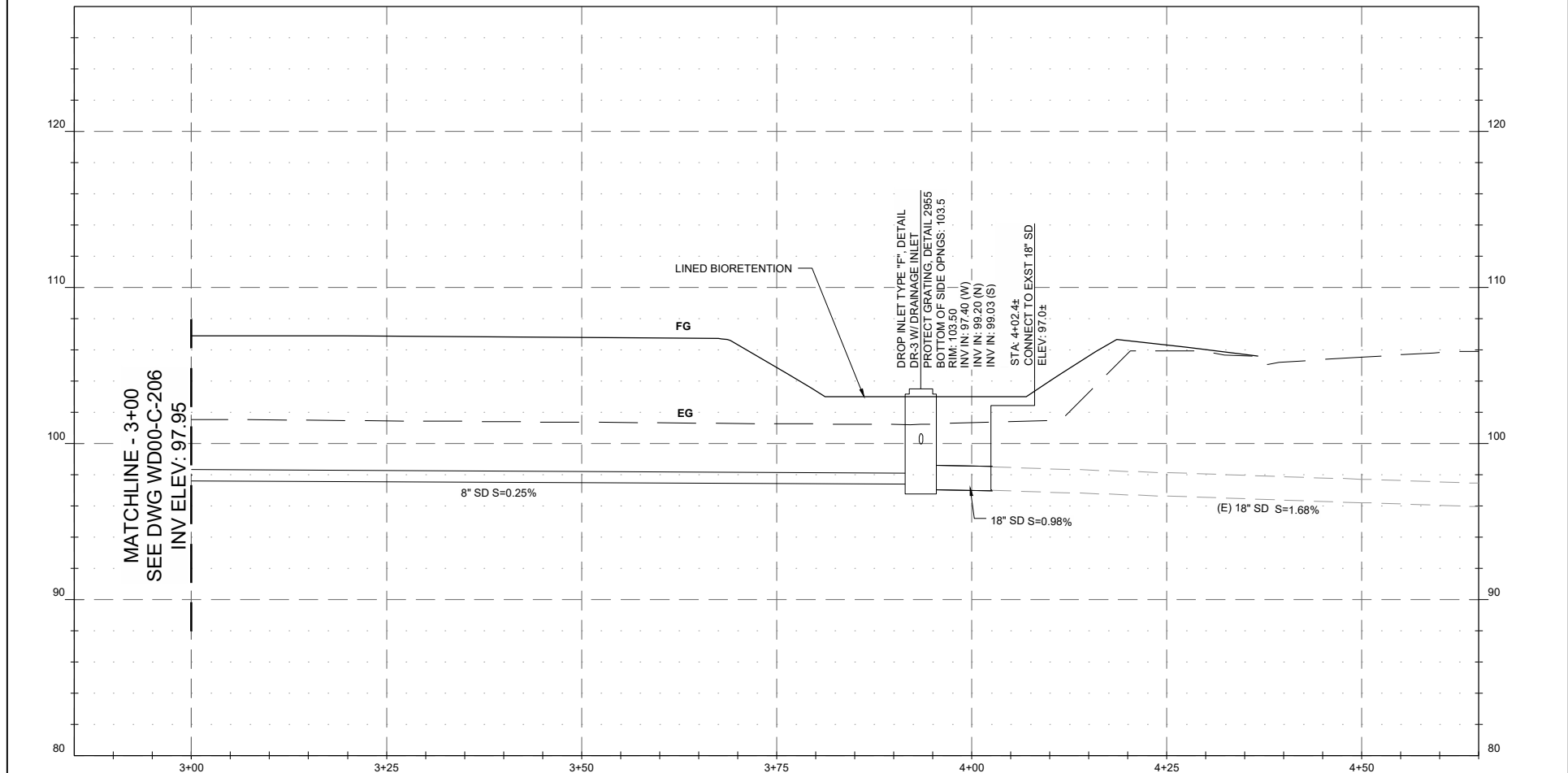
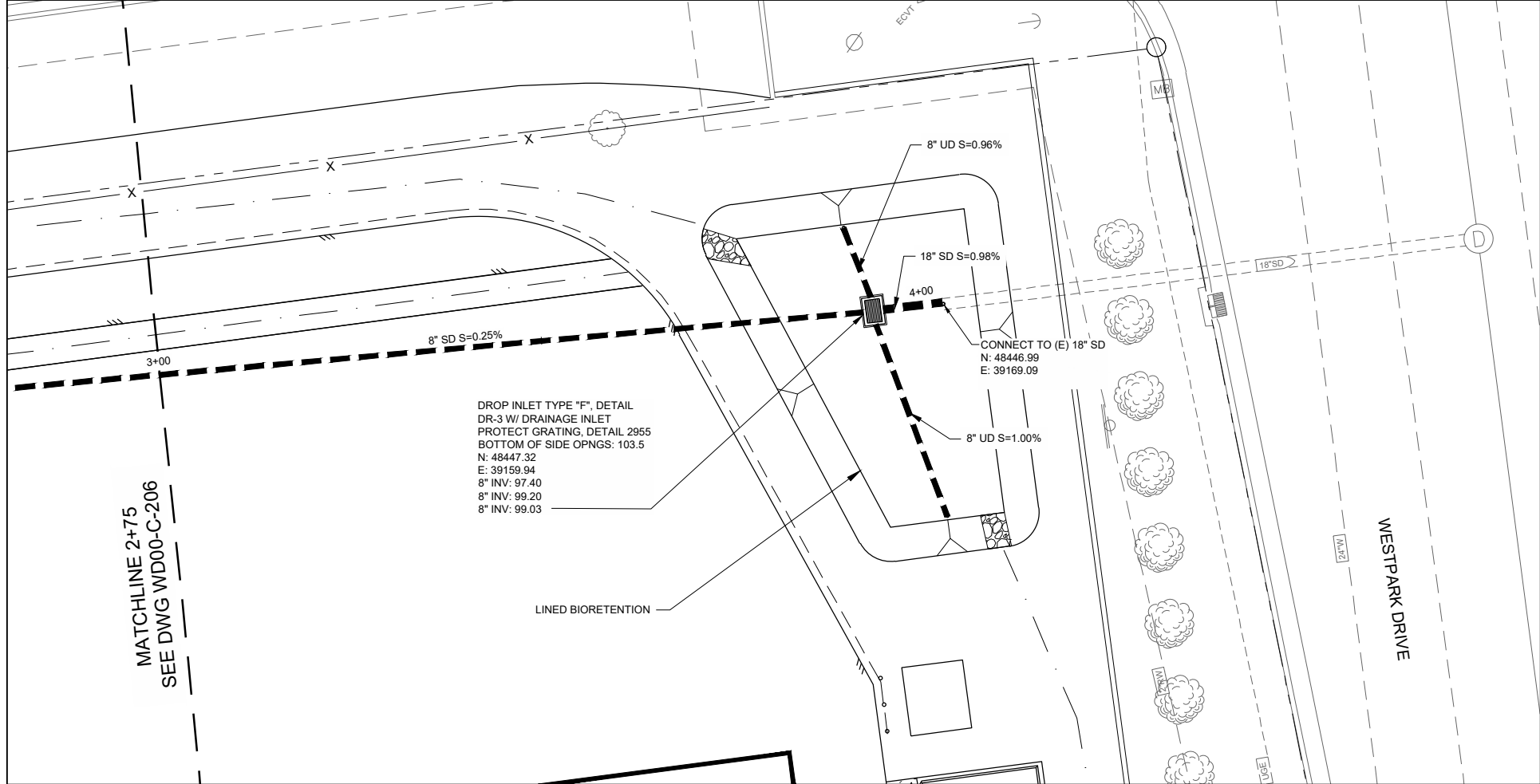
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DRAWN P WEBSTER					PROJECT NUMBER 17-083
CHECKED C BERTSCH					DRAWING NUMBER WD00-C-206
APPROVED M FISHER					SHEET NUMBER 69

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DESIGN
P WEBSTER

DRAWN
P WEBSTER

CHECKED
C BERTSCH

APPROVED
M FISHER

CITY OF ROSEVILLE
CALIFORNIA

WATERWORKS
ENGINEERS

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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

YARD PIPING

STORM DRAIN PLAN AND PROFILE
NORTH - 2+75 TO END

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-C-207

SHEET NUMBER 70

NORTH

10 0 10 20 FEET
HORIZ SCALE 1"=10'

5 0 5 10 FEET
VERT SCALE 1"=5'

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REGISTERED PROFESSIONAL ENGINEER
MICHAEL D FISHER
No. C67194
CIVIL
STATE OF CALIFORNIA
11-14-19

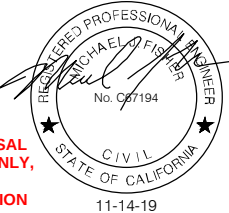
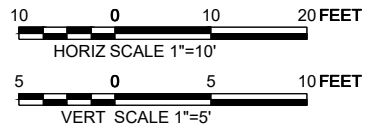
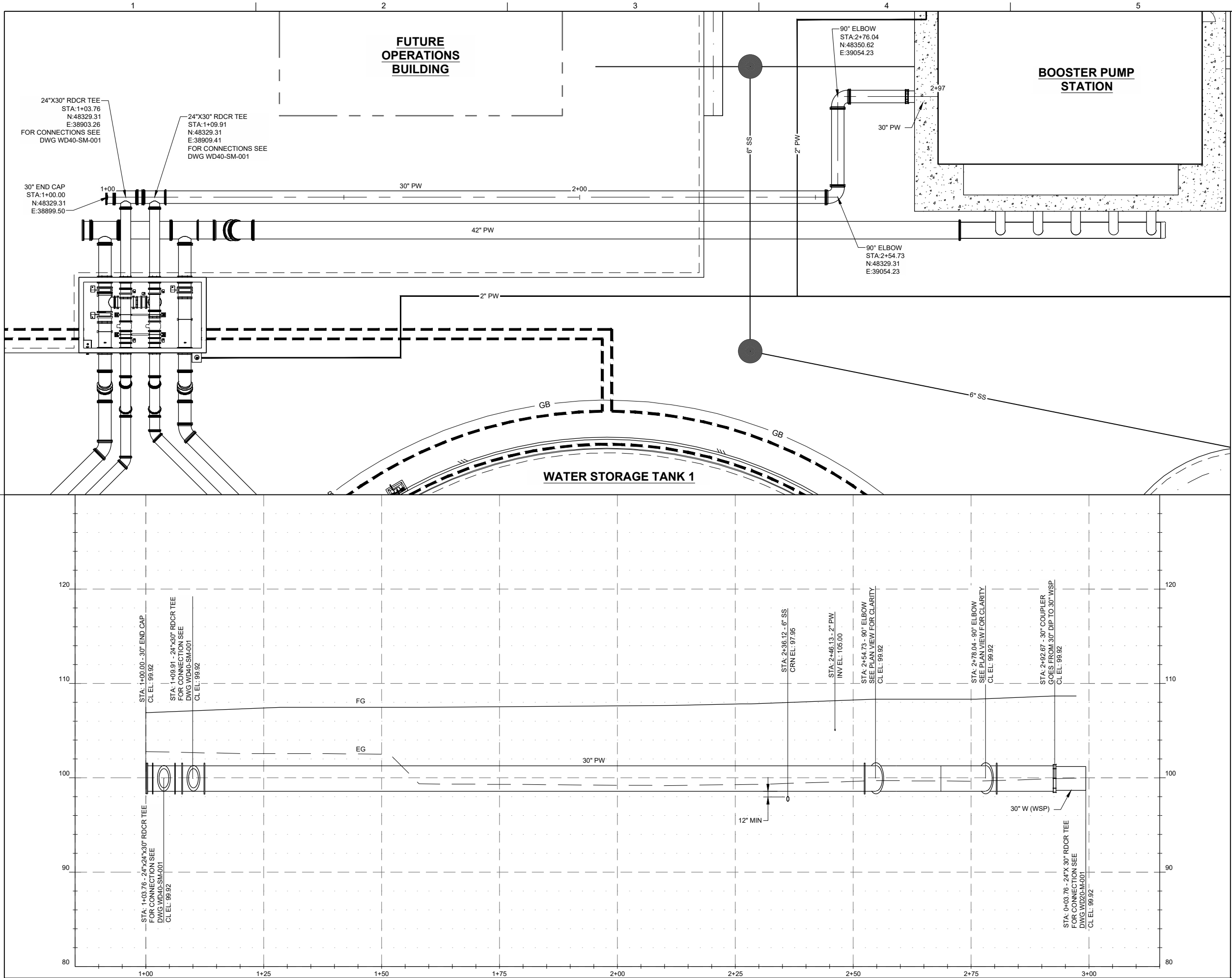
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PLOT DATE: 11/7/19

PLOT TIME: 13:59:46

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JOB NUMBER: 17-083

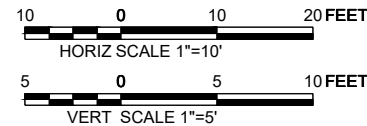
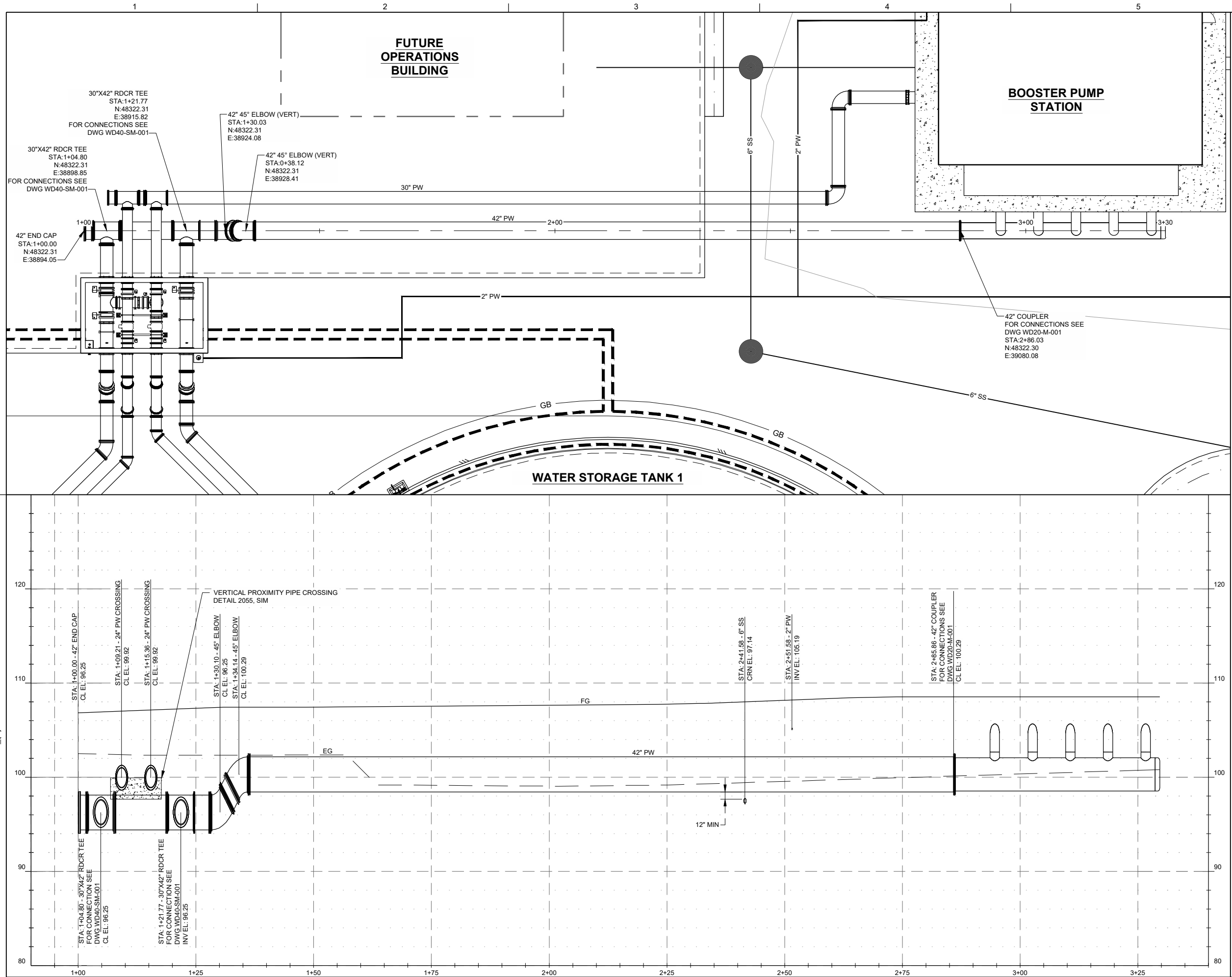
FILENAME: WD5400C208.DWG

PLOT DATE: 11/7/19

PLOT TIME: 14:00:09

DESIGN P WEBSTER	 ROSEVILLE CALIFORNIA	WATERWORKS ENGINEERS 2280 Douglas Blvd. Suite 105 • Roseville, CA 95661 • 916-790-3888
DRAWN P WEBSTER		
CHECKED C BERTSCH		
APPROVED M FISHER		
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2)		ROSEVILLE, CALIFORNIA
YARD PIPING		
30 INCH PW PLAN AND PROFILE		
DATE NOVEMBER 2019		SHEET NUMBER 71
PROJECT NUMBER 17-083		
DRAWING NUMBER WD00-C-208		

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CONSTRUCTION

JOB NUMBER: 17-083

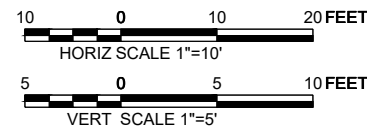
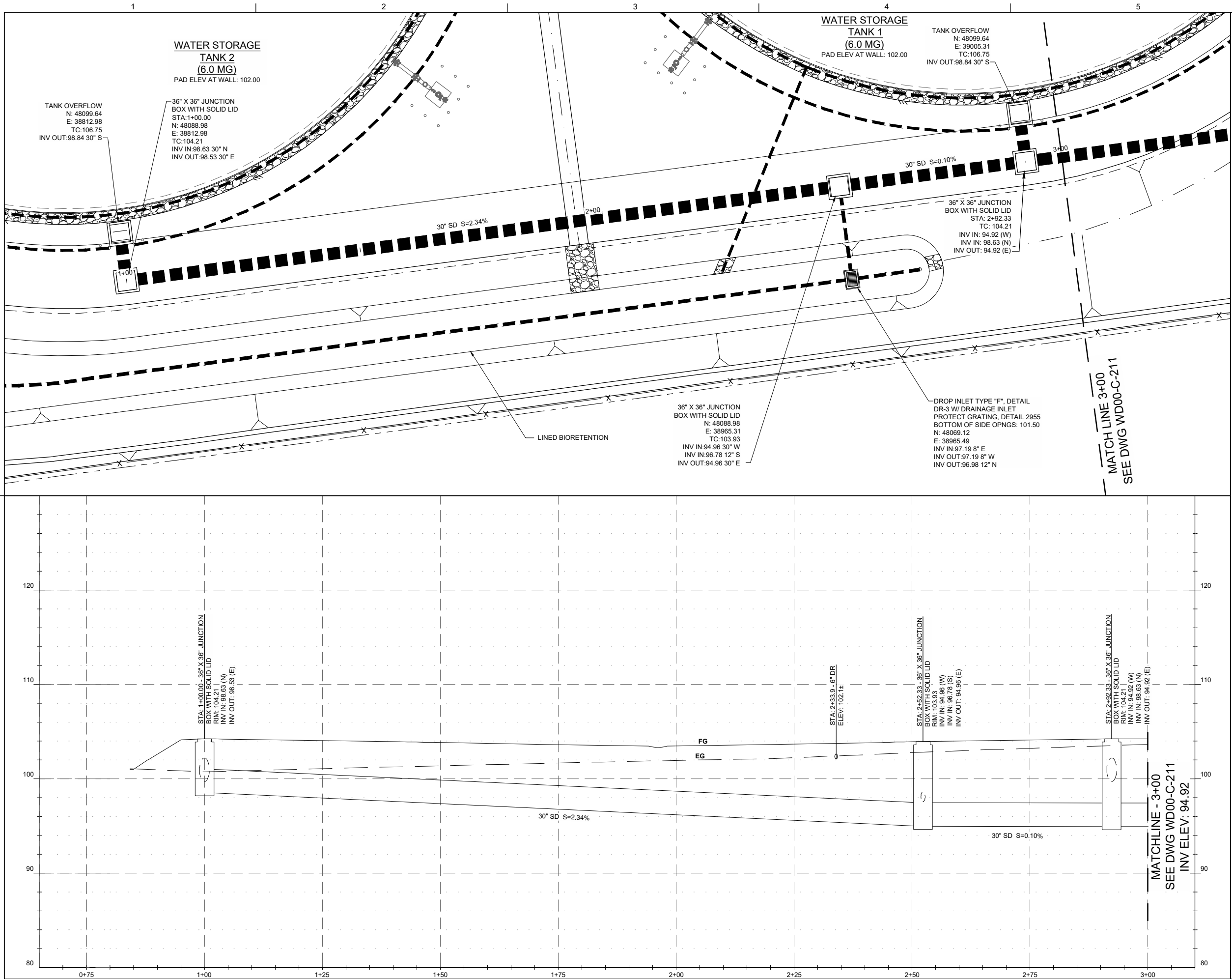
FILENAME: WD5400C209.DWG

PLOT DATE: 11/7/19

PLOT TIME: 14:00:28

DATE NOVEMBER 2019		 CITY OF ROSEVILLE CALIFORNIA	DESIGN P WEBSTER	
PROJECT NUMBER 17-083				DRAWN P WEBSTER
DRAWING NUMBER WD00-C-209				CHECKED C BERTSCH
SHEET NUMBER 72				APPROVED M FISHER
YARD PIPING 42 INCH PW PLAN AND PROFILE				 WATERWORKS ENGINEERS 2280 Douglas Blvd. Suite 105 • Roseville, CA 95661 • 916-790-9888
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA				

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DRAWN P WEBSTER				
CHECKED C BERTSCH				
APPROVED M FISHER				

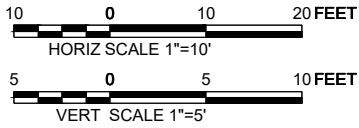
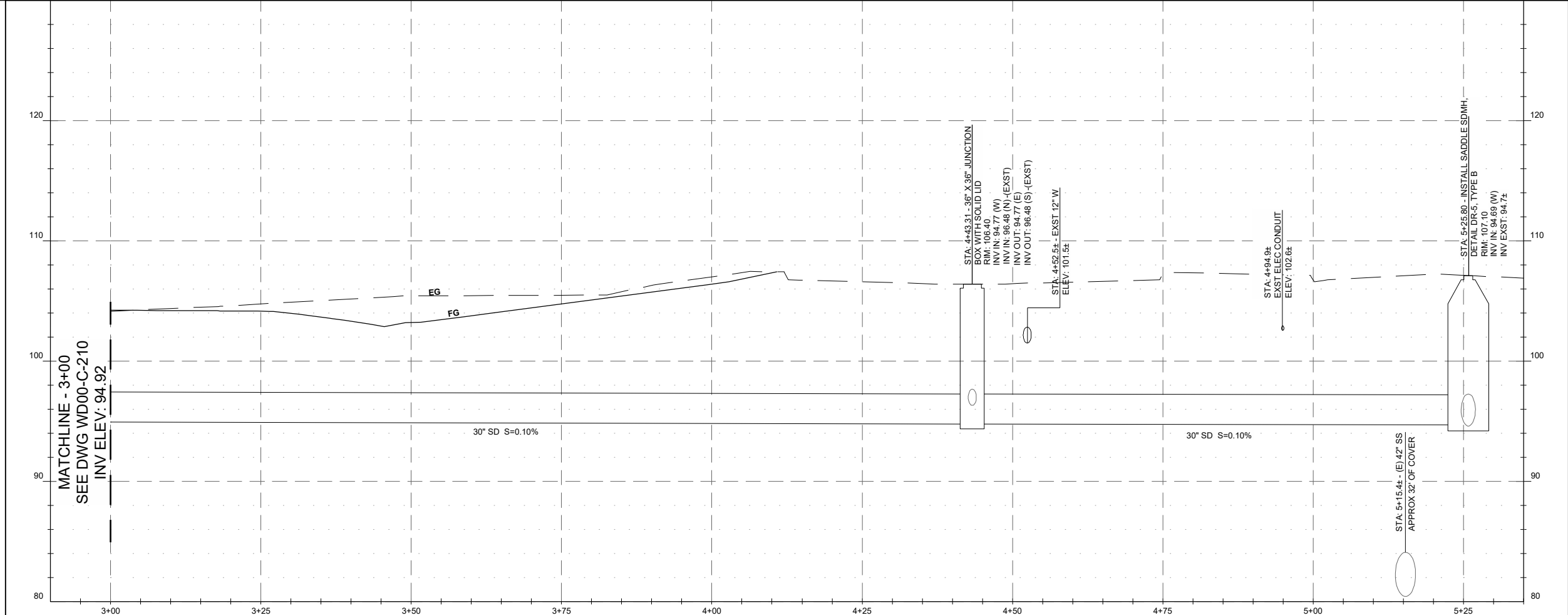
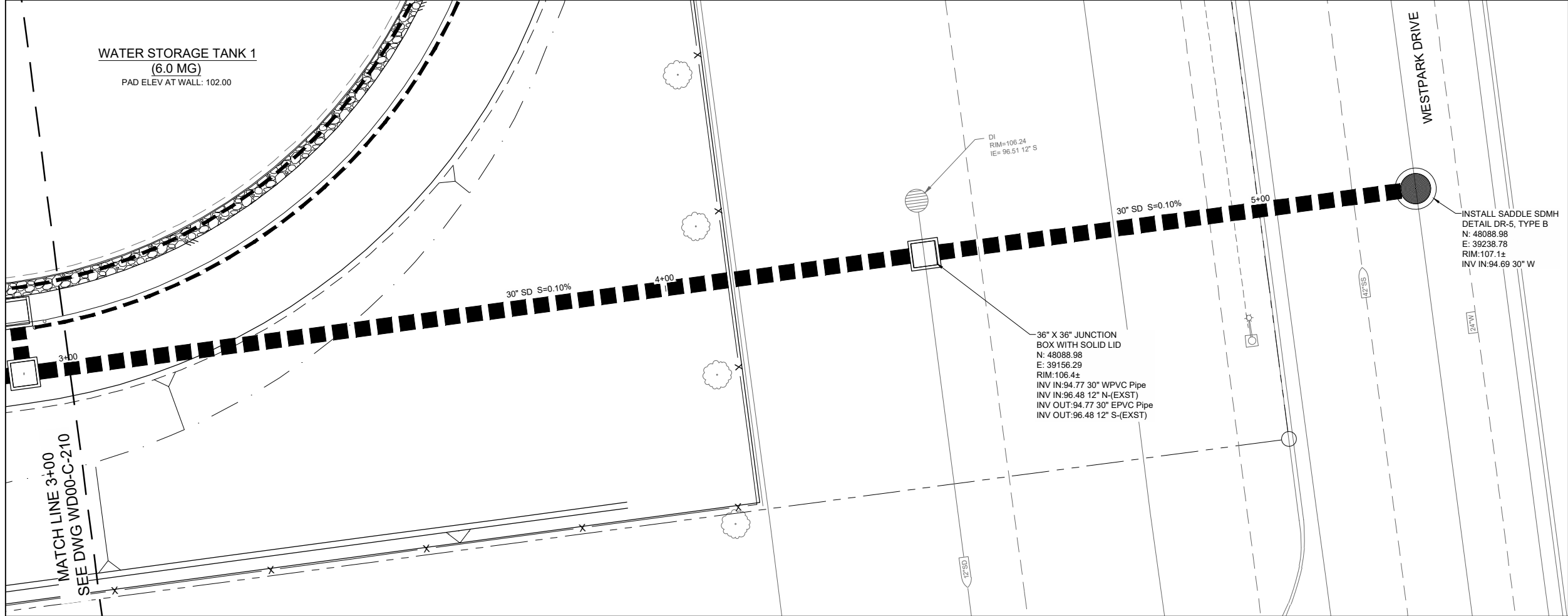
JOB NUMBER: 17-083

FILENAME: WD5400C210.DWG

PLOT DATE: 11/7/19

PLOT TIME: 14:01:09

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CONSTRUCTION

JOB NUMBER: 17-083

FILENAME: WD5400C211.DWG

PLOT DATE: 11/7/19

PLOT TIME: 14:01:27

DESIGN P WEBSTER		CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	YARD PIPING STORM DRAIN PLAN AND PROFILE SOUTH - 3+00 TO END	DATE NOVEMBER 2019
DRAWN P WEBSTER				PROJECT NUMBER 17-083
CHECKED C BERTSCH				DRAWING NUMBER WD00-C-211
APPROVED M FISHER				SHEET NUMBER 74

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CITY OF ROSEVILLE RECYCLED WATER SPECIAL ON SITE IRRIGATION NOTES:

- THE INSTALLATION OF THE RECYCLED WATER SYSTEM SHALL CONFORM TO THE REGULATIONS FOR THE CONSTRUCTION OF RECYCLED WATER SYSTEMS WITHIN THE CITY OF ROSEVILLE AND THE ACCOMPANYING PLANS AND SPECIFICATIONS.
- ALL ON-SITE RECYCLED AND POTABLE WATER PIPING INSTALLED ON THIS PROJECT SHALL BE IDENTIFIED IN ACCORDANCE WITH THE CITY OF ROSEVILLE CONSTRUCTION STANDARDS FOR RECYCLED WATER INFRASTRUCTURE AND THE IRRIGATION SPECIFICATIONS.
- CITY OF ROSEVILLE ENVIRONMENTAL UTILITIES DEPARTMENT SHALL BE NOTIFIED TWO DAYS PRIOR TO THE START OF CONSTRUCTION AT (916) 774-5750 AND EACH WORKDAY THEREAFTER UNTIL COMPLETION OF PROJECT FOR COMMERCIAL IRRIGATION SYSTEMS. CITY OF ROSEVILLE PARKS DEPARTMENT SHALL BE NOTIFIED TWO DAYS PRIOR TO THE START OF CONSTRUCTION AT (916) 746-1758 FOR LANDSCAPE CORRIDORS AND PARKS. A PRE-CONSTRUCTION MATERIALS INSPECTION MUST BE ARRANGED PRIOR TO THE START OF CONSTRUCTION.
- NO FACILITY IS TO BE BACKFILLED UNTIL INSPECTED BY THE CITY OF ROSEVILLE ENVIRONMENTAL UTILITIES DEPARTMENT AND/OR PARKS DEPARTMENT INSPECTOR.
- ALL RECYCLED WATER INFRASTRUCTURE, BOTH ON-SITE AND OFF-SITE SHALL BE INSPECTED BY CITY OF ROSEVILLE ENVIRONMENTAL UTILITIES AND/OR PARKS DEPARTMENT. FOR INSPECTION OF RECYCLED WATER SYSTEM CONTACT ENVIRONMENTAL UTILITIES AT 774-5750 FORTY- EIGHT (48) HOURS IN ADVANCE. POINTS OF INSPECTION ARE:
 - PRE-CONSTRUCTION MATERIALS INSPECTION.
 - IRRIGATION SYSTEM INSTALLATION BEFORE LINES ARE COVERED.
 - PRESSURE TESTING.
 - SYSTEM CROSS CONNECTION CONTROL TEST.
 - SYSTEM COVERAGE TEST.
- ALL RECYCLED WATER PIPING SHALL BE PURPLE COLORED PVC UNLESS OTHERWISE SPECIFIED. WHERE PURPLE PVC IS NOT USED, PIPE SHALL BE IDENTIFIED (MARKED) IN ACCORDANCE WITH THE CITY OF ROSEVILLE CONSTRUCTION STANDARDS.
- MARKING ON THE PURPLE COLORED PVC PIPE SHALL INCLUDE THE FOLLOWING:

"CAUTION: RECYCLED WATER- DO NOT DRINK". NOMINAL PIPE SIZE. PVC-1120. PRESSURE RATING IN POUNDS PER SQUARE INCH AT 73 DEGREES. ASTM DESIGNATIONS SUCH AS 1785, 2241, 1672, 3139. PRINTING SHALL BE PLACED CONTINUOUSLY ON TWO SIDES OF THE PIPE.
- ALL RECYCLED WATER SPRINKLER CONTROL VALVES, VALVE RISERS, SPRINKLER RISERS, AND SWING JOINTS SHALL BE TAGGED WITH IDENTIFICATION TAGS OR ADHESIVE LABELS AS FOLLOWS:
 - TAGS SHALL BE WEATHERPROOF PLASTIC, 3" X 4", PURPLE COLOR WITH THE WORDS "WARNING: RECYCLED WATER- DO NOT DRINK" IMPRINTED ON ONE SIDE, AND "AVISA: AGUA IMPURA- NO TOMAR" ON THE OTHER SIDE. IMPRINTING SHALL BE PERMANENT AND BLACK IN COLOR. USE TAGS AS MANUFACTURED BY T. CHRISTY ENTERPRISES OR APPROVED EQUAL.
 - ONE TAG SHALL BE ATTACHED TO EACH VALVE AS FOLLOWS:
 - ATTACH TO VALVE STEM DIRECTLY OR WITH PLASTIC TIE-WRAP, OR
 - ATTACH TO SOLENOID WIRE DIRECTLY OR WITH PLASTIC TIE-WRAP.
 - RECYCLED WATER WARNING LABELS OR STICKERS THAT ARE CONSISTENT WITH CITY OF ROSEVILLE CONSTRUCTION STANDARDS FOR RECYCLED WATER INFRASTRUCTURE AND THE IRRIGATION SPECIFICATIONS MUST BE ATTACHED TO ALL PIPING NOT IN COMPLIANCE.
 - ALL SPRINKLER HEADS MUST BE DESIGNED FOR RECYCLED WATER USAGE, WITH PURPLE RECYCLED WATER WARNING CAPS.
 - SPRINKLER RISERS AND SWING JOINTS SHALL BE IDENTIFIED WITH PURPLE ADHESIVE 3" X 3" LABELS. EACH LABEL SHALL STATE "RECYCLED WATER - DO NOT DRINK" IN ENGLISH AND SPANISH.
- ALL RECYCLED WATER CONTROL VALVE BOXES SHALL BE PURPLE AND HAVE A WARNING LABEL PERMANENTLY MOLDED INTO OR AFFIXED ONTO THE LID WITH RIVETS, BOLTS, ETC. WARNING LABELS SHALL BE CONSTRUCTED OF A PURPLE WEATHERPROOF MATERIAL WITH THE WARNING PERMANENTLY STAMPED OR MOLDED INTO THE LABEL. THE WARNING SHALL CONTAIN THE FOLLOWING INFORMATION:
 - "NON-POTABLE" OR "RECYCLED WATER".
 - "DO NOT DRINK" IN ENGLISH AND SPANISH.
- RECYCLED WATER QUICK COUPLING VALVES SHALL HAVE A PURPLE RUBBER OR VINYL COVER. THE COVER SHALL BE OF A LOCKING TYPE AND HAVE A WARNING PERMANENTLY STAMPED OR MOLDED AS FOLLOWS: "RECYCLED WATER- DO NOT DRINK" IN ENGLISH AND SPANISH.
- PLASTIC WARNING TAPE SHALL BE USED ON ALL POTABLE WATER PIPING, POTABLE WATER WARNING TAPE SHALL BE A MINIMUM OF 3 INCHES WIDE AND SHALL RUN CONTINUOUSLY FOR THE ENTIRE LENGTH OF EACH LINE. THE TAPE SHALL BE ATTACHED TO THE TOP OF THE PIPE WITH NYLON TIE-WRAP BANDED AROUND THE WARNING TAPE AND THE PIPE EVERY FIVE FEET ON CENTER. WARNING TAPE FOR THE POTABLE WATER PIPING SHALL BE BLUE IN COLOR WITH WORDS "CAUTION: POTABLE WATER LINE BURIED BELOW" IMPRINTED IN MINIMUM 1-INCH HIGH LETTERS, BLACK IN COLOR. IMPRINTING SHALL BE CONTINUOUS AND PERMANENT.
- ALL PRESSURE MAIN LINE PIPING FROM THE RECYCLED WATER SYSTEM SHALL BE INSTALLED TO MAINTAIN 10 FEET MINIMUM HORIZONTAL SEPARATION FROM ALL POTABLE WATER PIPING. WHERE RECYCLED AND POTABLE WATER PRESSURE MAIN LINE PIPING CROSS, THE RECYCLED WATER PIPING SHALL BE INSTALLED 12" BELOW THE POTABLE WATER PIPING OD TO OD. WHERE THE RECYCLED WATER PRESSURE MAIN LINE MUST PASS ABOVE POTABLE WATER PIPING, THE RECYCLED WATER PIPING SHALL INSTALLED IN A CLASS 200 PURPLE COLORED PVC SLEEVE WHICH EXTENDS A MINIMUM OF FIVE FEET ON EITHER SIDE OF THE POTABLE WATER PIPING. A 12" VERTICAL SEPARATION OD TO OD MUST BE MAINTAINED. CONVENTIONAL (WHITE) PVC PIPE MAY BE USED FOR SLEEVING MATERIAL IF IT IS TAPED WITH THREE-INCH WIDE PURPLE WARNING TAPE, WHICH READS "RECYCLED WATER- DO NOT DRINK".
- ALL PRESSURE MAIN LINE PIPING FROM THE RECYCLED WATER SYSTEM SHALL BE INSTALLED TO MAINTAIN A TEN FOOT MINIMUM HORIZONTAL SEPARATION FROM ALL SANITARY SEWER LINES. WHERE RECYCLED AND SEWER CROSS, THE RECYCLED WATER PIPING SHALL BE INSTALLED A MINIMUM OF ONE FOOT ABOVE SEWER.
- FOR ON-SITE RECLAIMED WATER PIPING, THE MINIMUM DEPTH FROM FINISH GRADE TO TOP OF PIPE SHALL BE AS FOLLOWS:
 - INTERMITTENT PRESSURE LINES (ALL SIZES) - 12"
 - CONSTANT PRESSURE LINES 2.5" AND SMALLER - 18"
 - CONSTANT PRESSURE LINES 3" AND LARGER - 24"

CONT:

- PRESSURE AND CROSS CONNECTION TESTING FOR ON-SITE RECYCLED WATER SYSTEMS:
 - ALL TESTING OF RECYCLED WATER SYSTEMS MUST BE PERFORMED UTILIZING A POTABLE WATER SOURCE VIA A CONSTRUCTION WATER CONNECTION PER CITY OF ROSEVILLE CONSTRUCTION STANDARDS. NO RECYCLED WATER MAY ENTER A RECYCLED WATER SYSTEM UNTIL ALL TESTING IS SUCCESSFULLY COMPLETED.
 - THE SOURCE OF POTABLE WATER USED FOR TESTING MUST HAVE A METER AND AN APPROVED BACK FLOW PREVENTION DEVICE. THESE CAN BE OBTAINED THROUGH THE CITY OF ROSEVILLE.
 - THE CONTRACTOR SHALL PROVIDE A MEANS TO PLUMB IN PRESSURE AND CROSS CONNECTION TESTING APPARATUS AT THE POINT OF HIGHEST ELEVATION, FOR BOTH POTABLE AND CONSTANT PRESSURE RECYCLED WATER SYSTEMS.
 - THE CONSTANT PRESSURE RECYCLED WATER SYSTEM INCLUDING ALL APPURTENANCES SHALL BE TESTED AT 125 PSI AT HIGHEST POINT OF ELEVATION FOR 1 HOUR WITH NO DETECTABLE LEAKAGE.
 - PRESSURE TESTING MUST BE SUCCESSFULLY COMPLETED PRIOR TO CROSS CONNECTION TESTING.
 - THE RECYCLED WATER SYSTEM SHALL BE TESTED FOR CROSS-CONNECTION IN ACCORDANCE WITH UNIFORM PLUMBING CODE APPENDIX J PRIOR TO USE.
 - FOR PROJECTS BEING PERFORMED IN PHASES, A CROSS CONNECTION TEST SHALL BE PERFORMED ON EACH PHASE INDEPENDENTLY, BEFORE IT IS PUT INTO SERVICE. THE POTABLE WATER SOURCE USED FOR TESTING EACH PHASE MUST BE INDEPENDENT OF OTHER PREVIOUSLY COMPLETED PHASES.
 - AT THE TIME A CROSS CONNECTION TEST IS TO BE PERFORMED, CONSTRUCTION ON BOTH THE POTABLE AND THE RECYCLED WATER SYSTEMS BEING TESTED MUST BE COMPLETE, AND BOTH SYSTEMS FULLY OPERATIONAL AND FUNCTIONING AS DESIGNED.
 - CROSS CONNECTION TESTING SHALL BE PERFORMED ON THE SYSTEM BY CITY FORCES WITH THE ASSISTANCE OF THE CONTRACTOR. THE TEST WILL BE COORDINATED THROUGH THE ENVIRONMENTAL UTILITIES OR PARKS DEPARTMENT INSPECTOR. FORTY-EIGHT (48) HOURS NOTICE IS REQUIRED BEFORE THE TEST. DEPENDING ON THE COMPLEXITY OF THE SITE, A PRELIMINARY FIELD MEET MAY ALSO BE REQUIRED.
- COVERAGE TEST:
 - ADJUST SPRAY HEADS TO ELIMINATE OVERSPRAY ONTO NATIVE OAK AREAS AND INTO AREAS NOT UNDER THE CONTROL OF THE CUSTOMER. FOR EXAMPLE: POOL DECKS, PRIVATE PATIOS, STREETS AND SIDEWALKS.
- METER INSTALLATION:
 - ONCE THE ON-SITE RECYCLED WATER SYSTEM HAS BEEN PROPERLY INSPECTED AND PASSED PRESSURE AND CROSS CONNECTION TESTING, A METER MAY BE INSTALLED. THE METER MUST BE PURCHASED FROM THE CITY OF ROSEVILLE AND INSTALLED BY CITY FORCES. COORDINATE METER PURCHASE AND INSTALLATION WITH THE ENVIRONMENTAL UTILITIES OR PARKS DEPARTMENT INSPECTOR.
- NO CONNECTION SHALL BE MADE TO THE CITY'S EXISTING RECYCLED WATER SYSTEM UNTIL THE NEW FACILITIES HAVE BEEN SUCCESSFULLY PRESSURE AND CROSS CONNECTION TESTED. TAPS TO THE EXISTING RECYCLED SYSTEM WILL BE MADE BY CITY FORCES ONLY.
- FAILURE TO COMPLY WITH ANY OR ALL OF THE ABOVE GUIDELINES VIOLATES THE CITY OF ROSEVILLE DESIGN AND CONSTRUCTION STANDARDS FOR RECYCLED WATER INFRASTRUCTURE AND WILL RESULT IN TERMINATION OF SERVICE UNTIL THE APPROPRIATE CORRECTIVE STEPS HAVE BEEN TAKEN.

GENERAL LANDSCAPE REQUIREMENTS/NOTES

- NO PLANTING SHALL BE STARTED UNTIL SPRINKLER IRRIGATION SYSTEM HAS BEEN TESTED BY CONTRACTOR IN PRESENCE OF OWNER'S REPRESENTATIVE AND NOTED DEFICIENCIES CORRECTED.
- NO PLANTING SHALL BE STARTED UNTIL SOIL PREPARATION AND FINISH GRADING OPERATIONS HAVE BEEN COMPLETED AND APPROVED BY THE OWNER'S REPRESENTATIVE.
- PLANT MATERIAL IS SUBJECT TO APPROVAL OF OWNER'S REPRESENTATIVE

ENVIRONMENTAL REQUIREMENTS:

GENERAL: PROCEED WITH WORK IN ORDERLY AND TIMELY MANNER TO COMPLETE INSTALLATION OF LANDSCAPING WITHIN CONTRACT LIMITS.

PROTECTION:

LANDSCAPING: PROTECT LANDSCAPE WORK AND MATERIALS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES AND TRESPASSERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR OR REPLACE DAMAGED LANDSCAPE WORK AS DIRECTED AT NO ADDITIONAL COST TO CONTRACT.

ADVERSE CONDITIONS: WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS, NOTIFY OWNER'S REPRESENTATIVE BEFORE STARTING WORK.

PLANTING INSTALLATION SEASONS AND CONDITIONS PLANTING

NO WORK SHALL BE DONE WHEN GROUND IS FROZEN, TOO WET OR IN AN OTHERWISE UNSUITABLE CONDITION FOR AMENDING SOIL, FINISH GRADING OR PLANTING.

SOIL TESTING:

- COORDINATE SOIL TESTING IN AN EXPEDITIOUS AND TIMELY MANNER AS REQUIRED FOR ON-SITE MATERIALS. RESPONSIBILITY OF CONTRACTING WITH A SOIL LABORATORY SHALL BE BORNE BY CONTRACTOR. COST OF SAMPLING AND TESTING SHALL BE INCLUDED IN CONTRACT PRICE. SIX (6) SAMPLES ARE REQUIRED. CONTRACTOR TO COLLECT SAMPLES IN THE PRESENCE OF OWNER'S REPRESENTATIVE. SAMPLES LOCATIONS TO BE IDENTIFIED ON PLAN.
- EACH SAMPLE SHALL BE SUBMITTED TO A LABORATORY. THE LABORATORY MUST BE APPROVED BY THE OWNER. SUBMIT SAMPLE SIZES AS REQUIRED BY LABORATORY.
- AS A MINIMUM, SOIL SAMPLES SHALL BE ANALYZED FOR: PH, SALINITY, AMMONIA, PHOSPHATE, POTASSIUM, CALCIUM, MAGNESIUM, BORON, AND SODIUM LEVELS. LABORATORY TO PROVIDE APPRAISAL OF CHEMICAL OF PROPERTIES, INCLUDING PARTICLE SIZE AND RECOMMENDATIONS FOR TYPES AND QUANTITIES OF AMENDMENTS AND FERTILIZERS.

SPRINKLER IRRIGATION NOTES:

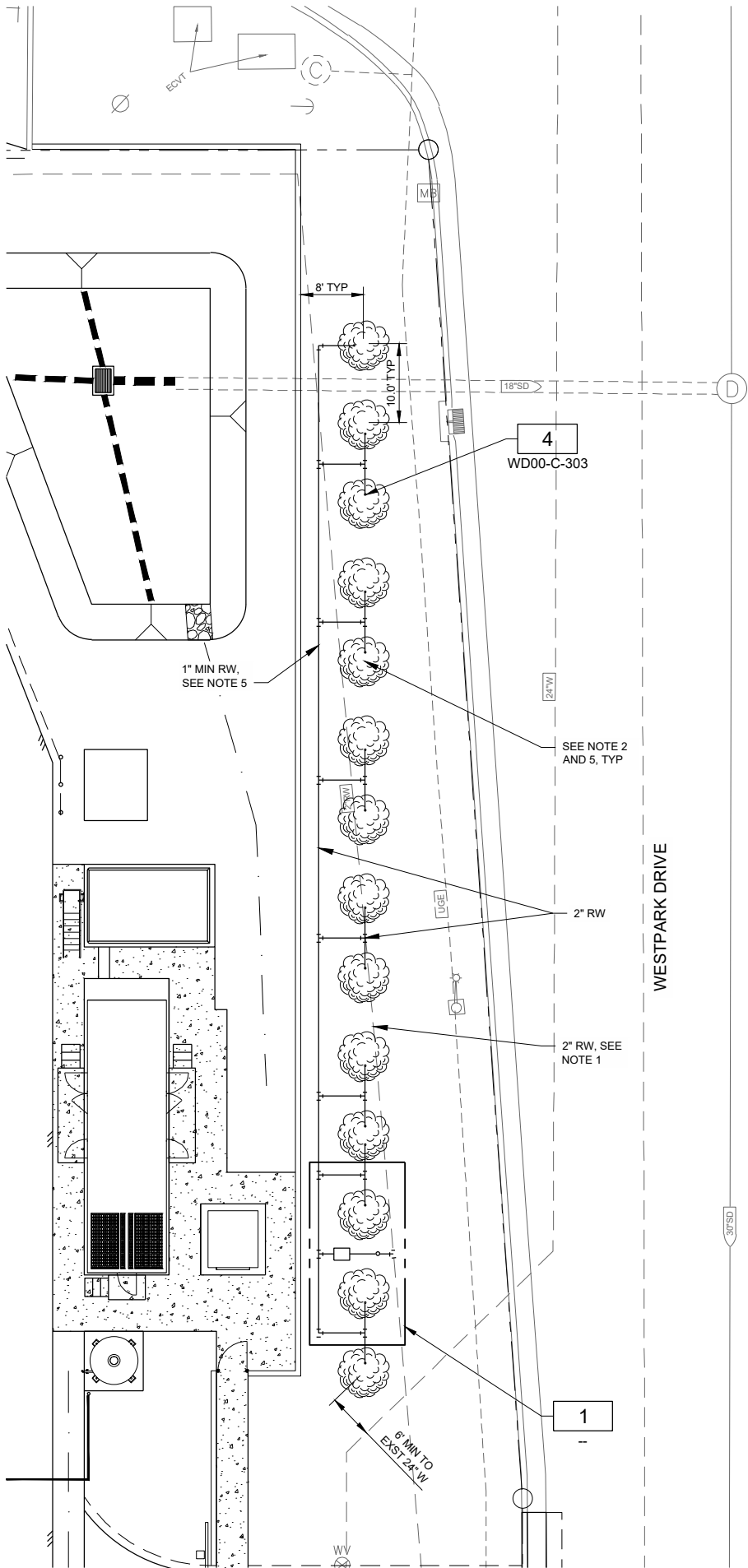
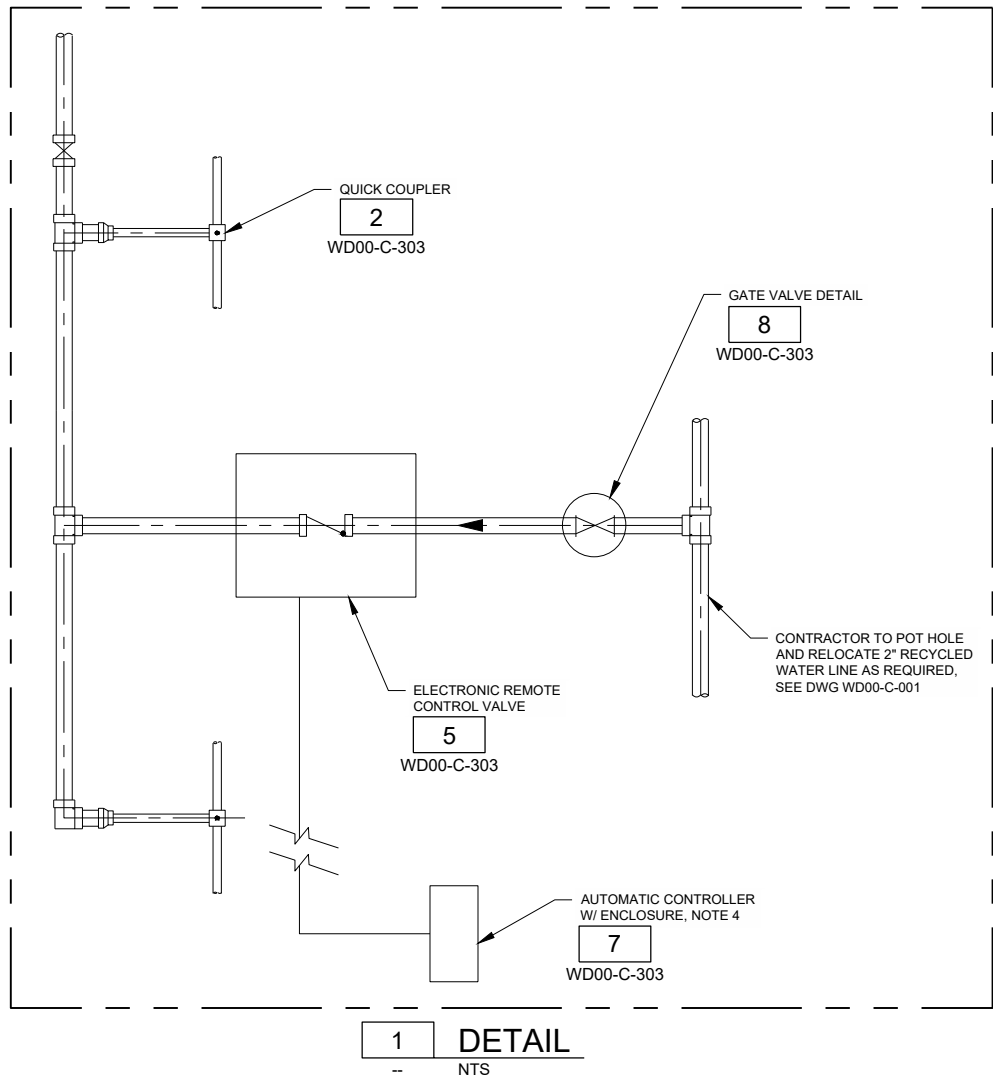
- SPRINKLER SYSTEM SHALL COMPLY WITH CITY OF ROSEVILLE PARKS AND RECREATION DEPT REQUIREMENTS.
- DETERMINE LOCATION OF UNDERGROUND UTILITIES. DAMAGE CAUSED BY INSTALLATION OF THIS WORK SHALL BE REPAIRED TO SATISFACTION OF GOVERNING AGENCY OR OWNER AT NO ADDITIONAL COST TO THE CONTRACT.
- ALL LOCAL CODES AND ORDINANCES SHALL BE COMPLIED WITH. IF THERE IS A CONFLICT, NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY.
- TESTING:
 - PRESSURE TEST ALL UNDERGROUND PIPING AS FOLLOWS: SYSTEMS WITH OUT BOOSTER PUMP: MAIN LINE - AT STATIC PSI FOR 4 HOURS. LATERAL LINES - AT STATIC PSI FOR 2 HOURS.
 - COVERAGE TEST: NOTE: PRIOR TO REQUESTING COVERAGE TEST, INSURE ALL HEADS ARE SET PLUMB, NOZZLES ARE ADJUSTED PROPERLY AND SYSTEM HAS BEEN CHECKED FOR AUTOMATION. REQUEST OWNER'S REPRESENTATIVES PRESENCE ON-SITE WHEN SPRINKLER SYSTEM IS COMPLETELY INSTALLED AND FULLY AUTOMATIC. PROVIDE ADEQUATE PERSONNEL AT THIS MEETING TO ADJUST AND FINE TUNE SYSTEM TO SATISFACTION OF OWNER'S REPRESENTATIVE.
- LAYOUT ALL WORK PRIOR TO TRENCHING OPERATIONS TO DETERMINE IF MINOR MODIFICATIONS OR ADJUSTMENTS WILL BE REQUIRED.
- COORDINATE ALL WORK WITH OTHER TRADES SO PROGRESS OF WORK IS NOT INTERRUPTED AND CAN BE COMPLETED IN A TIMELY MANNER.



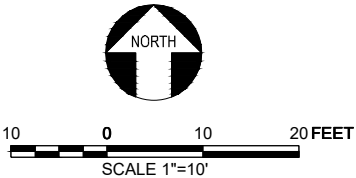
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CONSTRUCTION

DESIGN P WEBSTER	DRAWN P WEBSTER	CHECKED C BERTSCH	APPROVED M FISHER
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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
LANDSCAPING GENERAL LANDSCAPING NOTES			
DATE NOVEMBER 2019		PROJECT NUMBER 17-083	
DRAWING NUMBER WD00-C-301		SHEET NUMBER 75	

L:\CAD\PROJECTS\17-083 ROSEVILLE WEST SIDE TANK - PS_(S)\PROJECT FILES\DELIVERABLES\WD5400C302.DWG



- NOTES:**
- 2" RECYCLED WATER LINE EXACT DEPTH AND LOCATION IS UNKNOWN. CONTRACTOR SHALL FIELD VERIFY LOCATION PRIOR TO INSTALLING IRRIGATION SYSTEM.
 - FIVE GALLON EUONYMUS COMPACTA AT 10 FOOT SPACING (14 TOTAL). PLANT 8 FEET FROM EXTERIOR WALL.
 - INSTALL 3" LAYER OF MULCH OVER WEED BARRIER. SEE SPECIFICATION SECTION 02900.
 - LOCATE CONTROLLER TO AVOID NEW LANDSCAPING. LOCATION SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.
 - CONTRACTOR SHALL PROVIDE IRRIGATION SYSTEM AND LANDSCAPE PLANTING IN ACCORDANCE WITH APPROVED SUBMITTALS PER SPECIFICATION SECTION 02810 AND 02900.

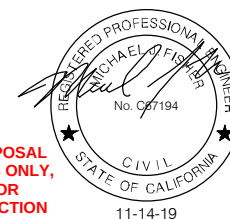


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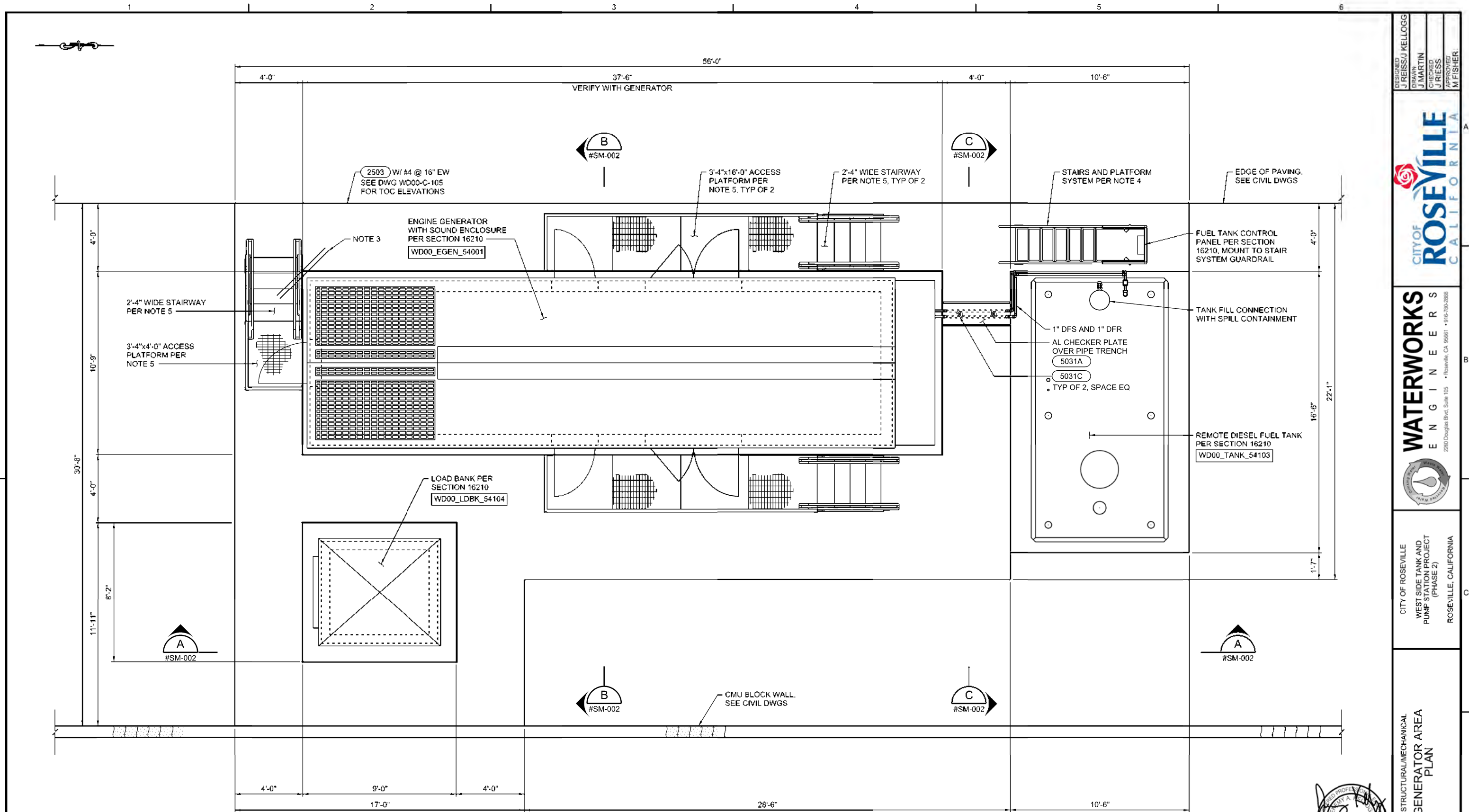
DESIGN P WEBSTER	DRAWN P WEBSTER	CHECKED C BERTSCH	APPROVED M FISHER
			
WATERWORKS ENGINEERS 2280 Douglas Blvd., Suite 105 • Roseville, CA 95661 • 916-780-3888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
LANDSCAPING LANDSCAPING AND IRRIGATION PLAN			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-C-302			
SHEET NUMBER 76			



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CONSTRUCTION**



DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD00-C-303
SHEET NUMBER	77



PLAN
3/8" = 1'-0"

NOTES:

1. REPLACE "R" IN DRAWING WITH "WD00-".
2. GENERATOR, FUEL TANK AND FUEL PIPING APPROXIMATELY SHOWN, BASED ON KOHLER KD SERIES GENERATOR AND 5,200 GALLON CONVAULT FUEL TANK. ACTUAL LAYOUT TO BE BASED ON APPROVED SHOP DRAWINGS.
3. PROVIDE (2) #4x4'-0" DIAGONAL BAR AT ±3" SPACING. TYPICAL AT EACH REENTRANT CORNER.
4. WILDECK TANK ACCESS STAIRS W/ PLATFORM AP-736, OR APPROVED EQUAL. HOT DIP GALVANIZED FINISH.
5. WILDECK JIFFYSTAIR MODULAR STAIR SYSTEM, OR APPROVED EQUAL. PROVIDE CALIFORNIA COMPLIANT STAIR SYSTEM WITH GUARDRAIL ON THREE SIDES OF PLATFORM. COORDINATE ± 28" PLATFORM HEIGHT WITH APPROVED GENERATOR. HOT DIP GALVANIZED FINISH.

2 0 2 4 FEET
SCALE 3/8"=1'-0"

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DESIGNED
J REISS/J KELLOGG
DRAWN
J MARTIN
CHECKED
J REISS
APPROVED
M FISHER



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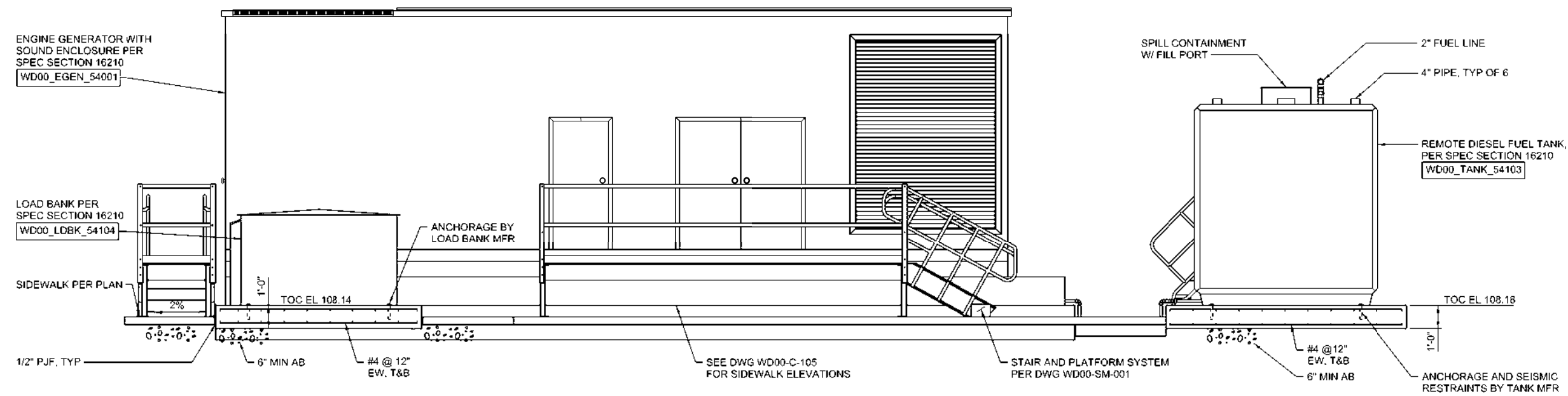


CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

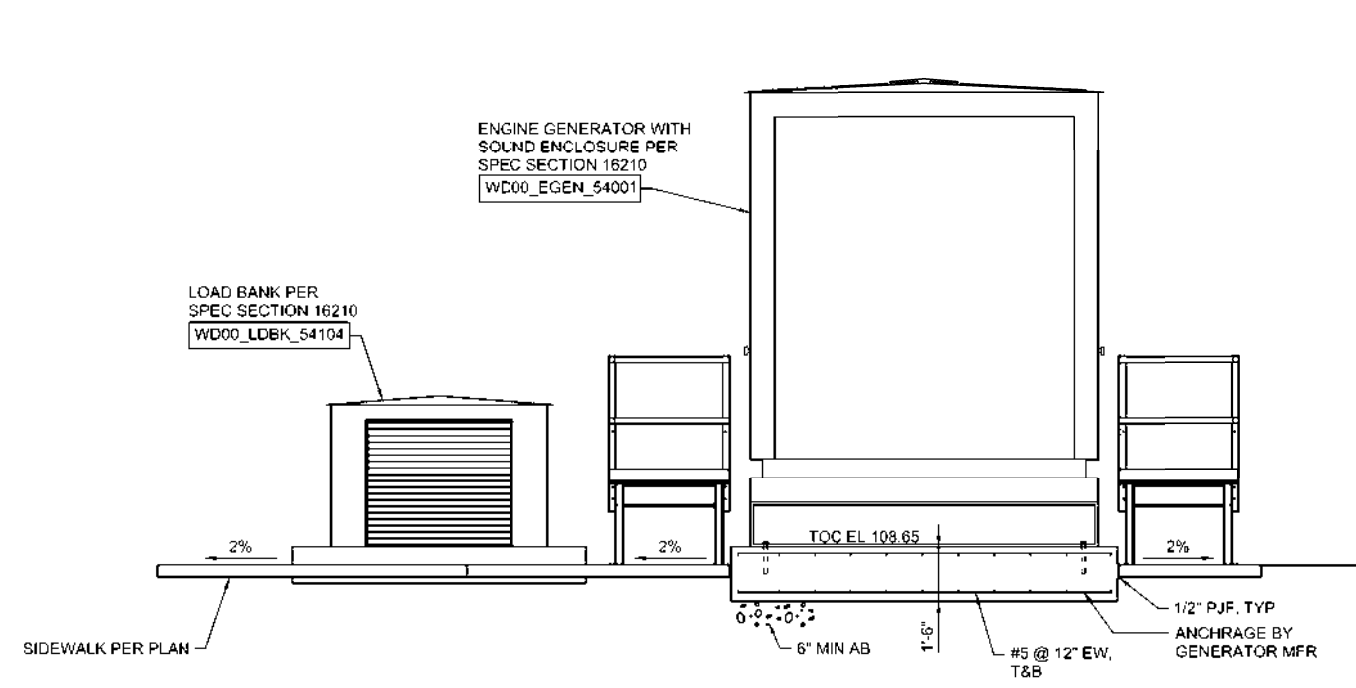
STRUCTURAL/MECHANICAL
GENERATOR AREA
PLAN

DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD00-SM-001
SHEET NUMBER 78

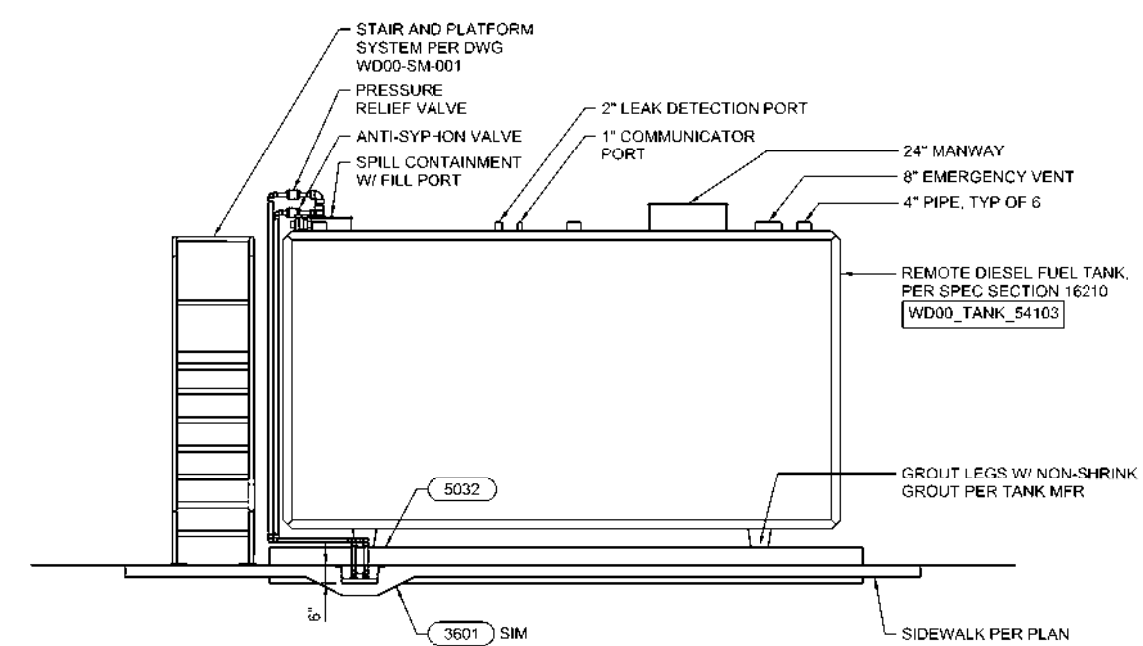
NOTES:
1. REPLACE "#" IN DRAWING WITH "WD00-".



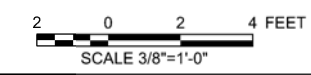
A SECTION
#SM-001 3/8" = 1'-0"



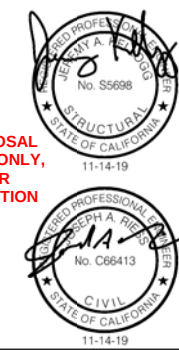
B SECTION
#SM-001 3/8" = 1'-0"



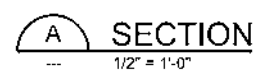
C SECTION
#SM-001 3/8" = 1'-0"



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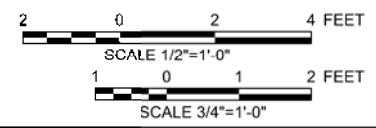


DESIGNED J. R. KELLOGG	DRAWN J. MARTIN	CHECKED J. REED	APPROVED M. FISHER
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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL / MECHANICAL GENERATOR AREA SECTIONS			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-SM-002			
SHEET NUMBER 79			



- NOTES:**
1. CONTRACTOR TO VERIFY ALL TANK, SUPPORT, ANCHOR AND FOUNDATION DIMENSIONS WITH TANK MANUFACTURER PRIOR TO CONSTRUCTION.
 2. PROVIDE STAINLESS STEEL INSECT SCREENS FOR ALL VENTS.
 3. PROVIDE PROBE ASSEMBLY SUPPORT PER TANK MANUFACTURER.
 4. INSTALL 24 MESH INSECT SCREEN ON END OF 2" DR.

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DESIGNED	J RIESS/J KELLOGG
DRAWN	J MARTIN
CHECKED	S KADER
APPROVED	M FISHER

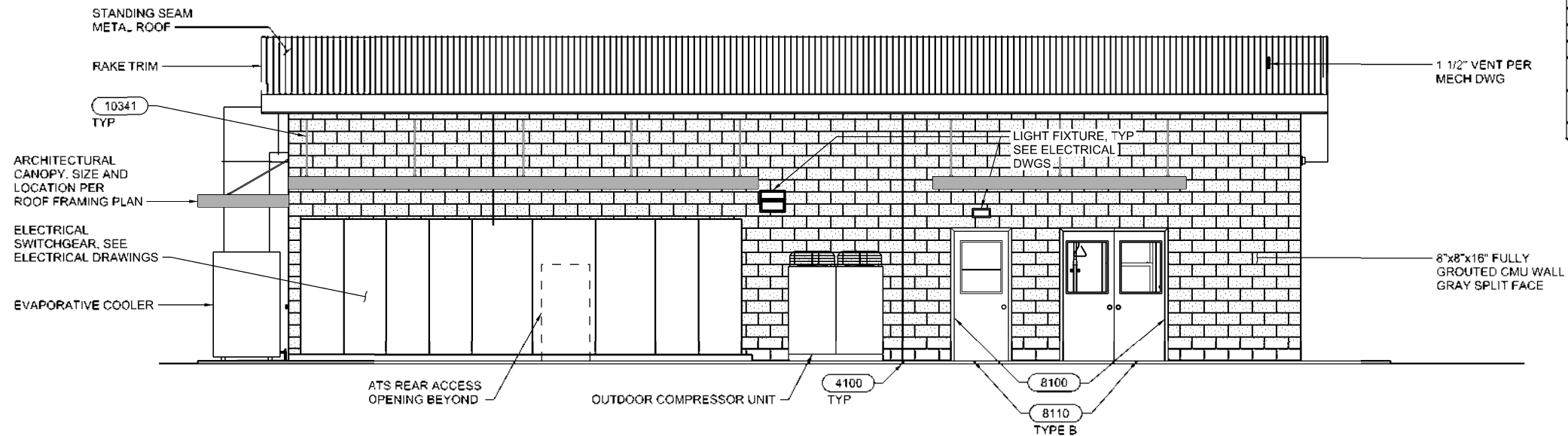


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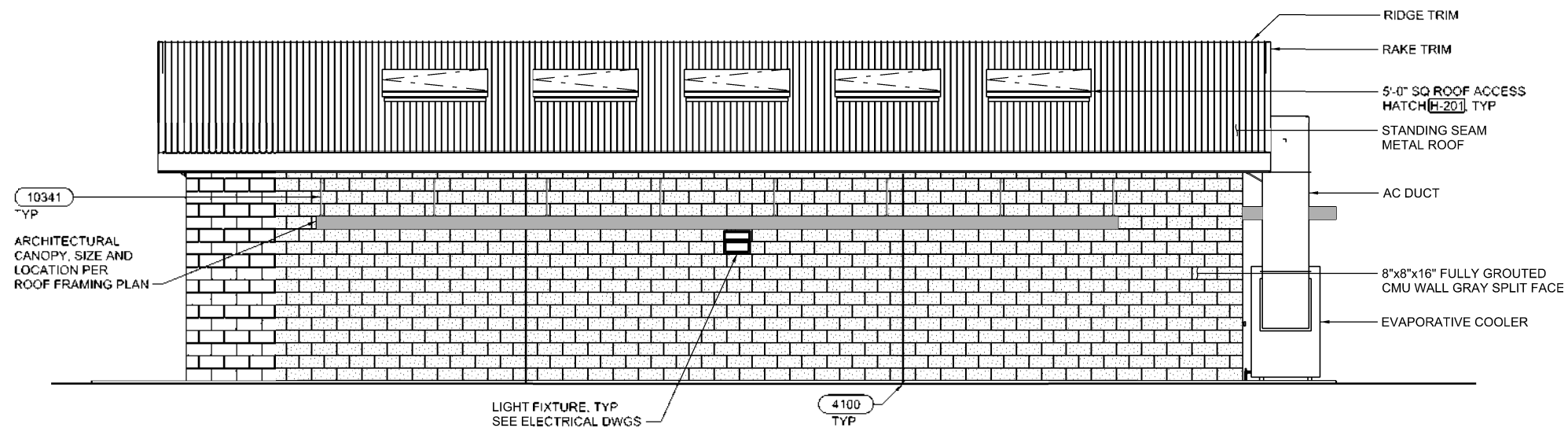
CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

STRUCTURAL / MECHANICAL
HYDROPNEUMATIC TANK
PLAN AND SECTIONS

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD20-SM-001
SHEET NUMBER	80



NORTH ELEVATION
1/4" = 1'-0"
WD20-AS-003

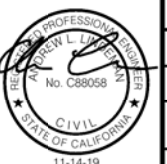


SOUTH ELEVATION
1/4" = 1'-0"
WD20-AS-003

2016 CBC CODE ANALYSIS	
OCCUPANCY CLASS	F-2
TYPE OF CONSTRUCTION	III-B
FIRE SUPPRESSION	FIRE EXTINGUISHERS
ACTUAL AREA	2,537 SQ FT
OCCUPANT LOAD FACTOR	100
OCCUPANT LOAD	28
EXITS PROVIDED	3
MAX EXIT TRAVEL DISTANCE	63 FT
HAZARDOUS MATERIALS	500 GALLONS 12.5% SODIUM HYPOCHLORITE
EXTERIOR WALLS	4-HOUR RATED

4 0 4 8 FEET
SCALE 1/4"=1'-0"

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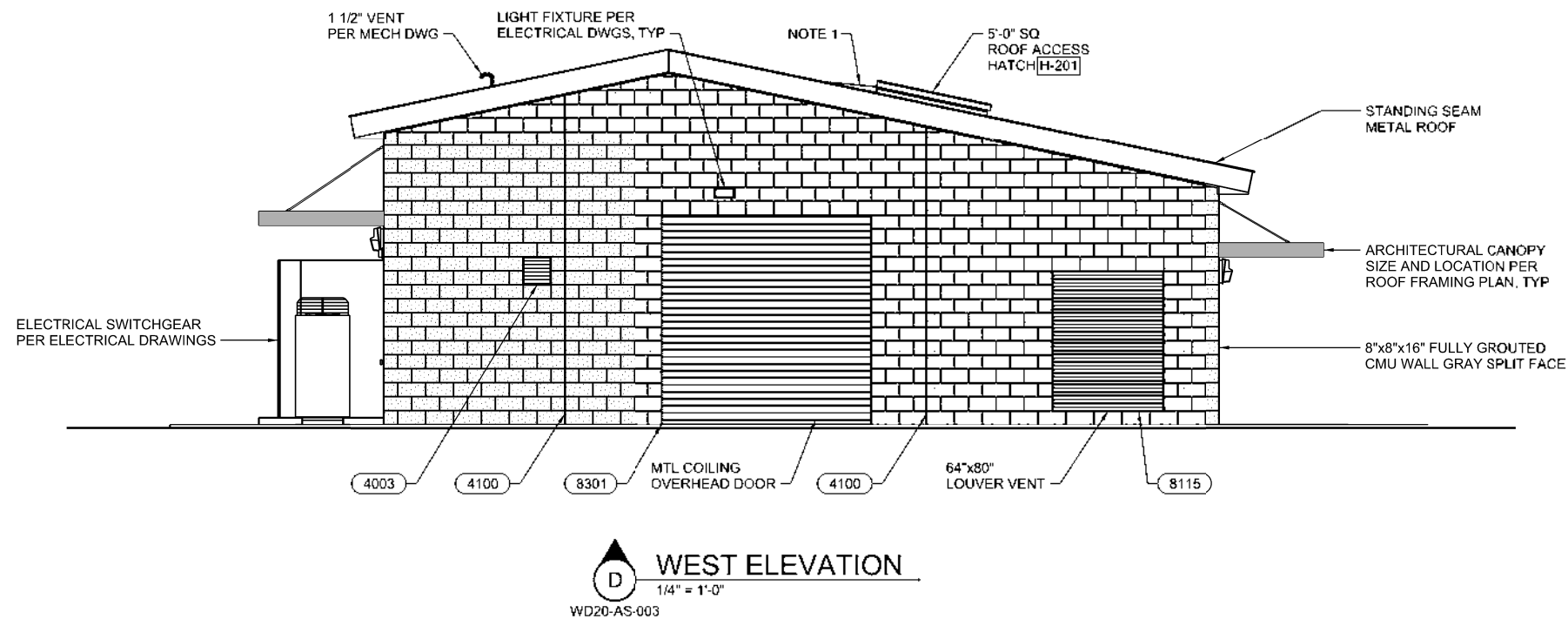
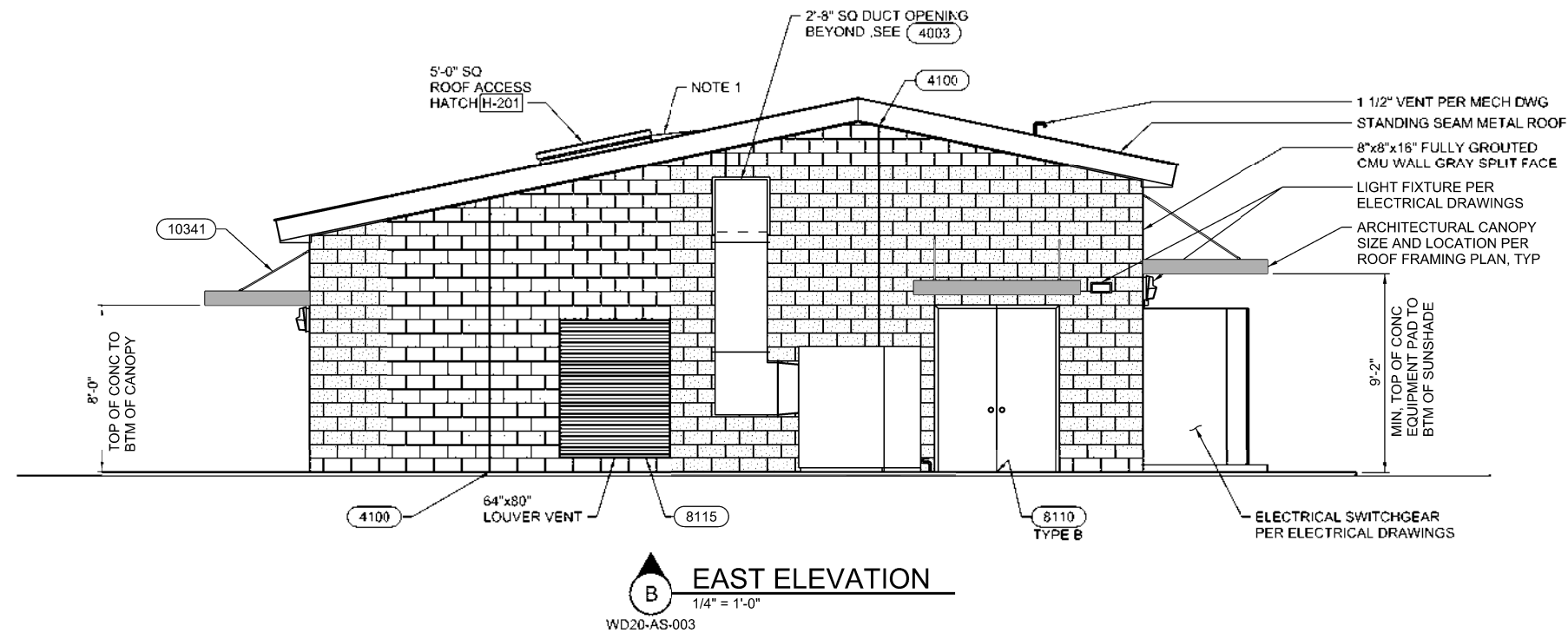


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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

ARCHITECTURAL/STRUCTURAL
BOOSTER PUMP STATION
ELEVATIONS

DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD20-AS-001
SHEET NUMBER 81



- NOTES:
1. FABRICATED GALVANIZED SHEET METAL CRICKET, 11 GAUGE MINIMUM. COORDINATE CRICKET WITH HATCH CURB COUNTERFLASHING AND ROOFING FOR A COMPLETE WEATHERTIGHT INSTALLATION. SEE (7000), SIMILAR.

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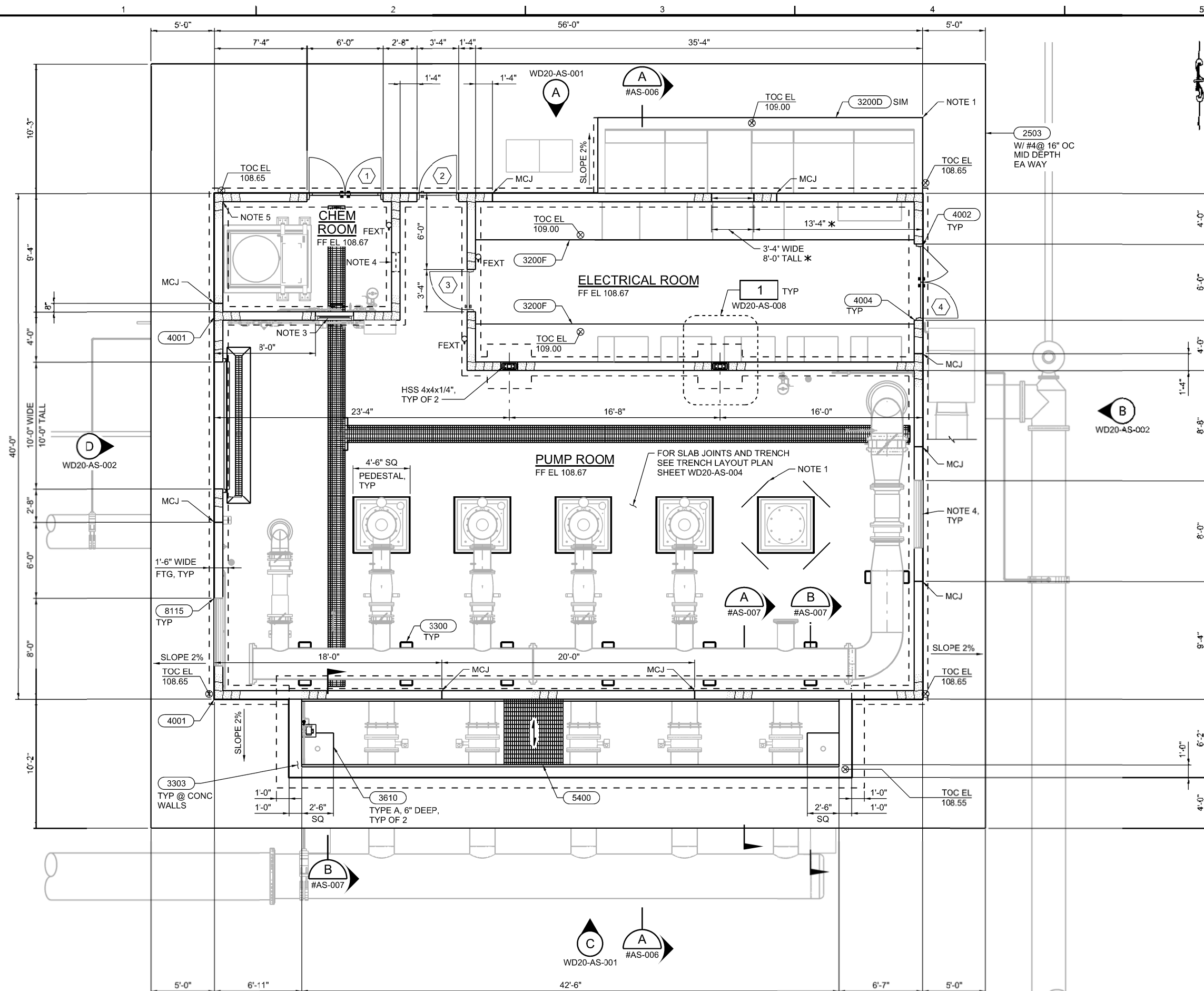
CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

ARCHITECTURAL/STRUCTURAL
BOOSTER PUMP STATION
ELEVATIONS

DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD20-AS-002
SHEET NUMBER 82

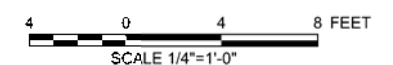
4 0 4 8 FEET
SCALE 1/4" = 1'-0"





- NOTES:**
1. PROVIDE #4 x 4'-0" DIAGONAL BAR AT MID SLAB DEPTH @ EA CORNER, TYPICAL AT ALL REENTRANT CORNERS.
 2. FOR SECTION CUTS, REPLACE " # " WITH " WD20-# "
 3. 3'-4" WIDE BY 3'-4" WIDE FIXED VINYL FRAMED WINDOW WITH SILL HEIGHT AT 3'-4" ABOVE FINISH FLOOR.
 4. PROVIDE LOUVERS AND WALL GRILLS PER DWG WD20-H-001.
 5. AT CHEM ROOM, INSTALL POLY-TUF WATERPROOF WALL AND CEILING LINER PANEL (H&F MANUFACTURING GROUP) TO A HEIGHT OF 4'-0" MEASURED FROM FINISHED FLOOR. FOLLOW MANUFACTURE'S RECOMMENDATIONS FOR INSTALLATION, FASTENER REQUIREMENTS, ETC. CONTRACTOR TO PROVIDE MANUFACTURE'S STANDARD TRIM ACCESSORIES FOR PANEL INTERSECTIONS, CORNERS AND EDGES.
- * VERIFY ATS LOCATION & OPENING SIZE W/ ELECTRICAL SUBMITTAL PRIOR TO CONSTRUCTION. PROVIDE NON-SHRINK GROUT & CAULKING AS REQUIRED TO PROVIDE AIR-TIGHT SEAL BETWEEN EQUIPMENT HOUSING AND MASONRY WALL.

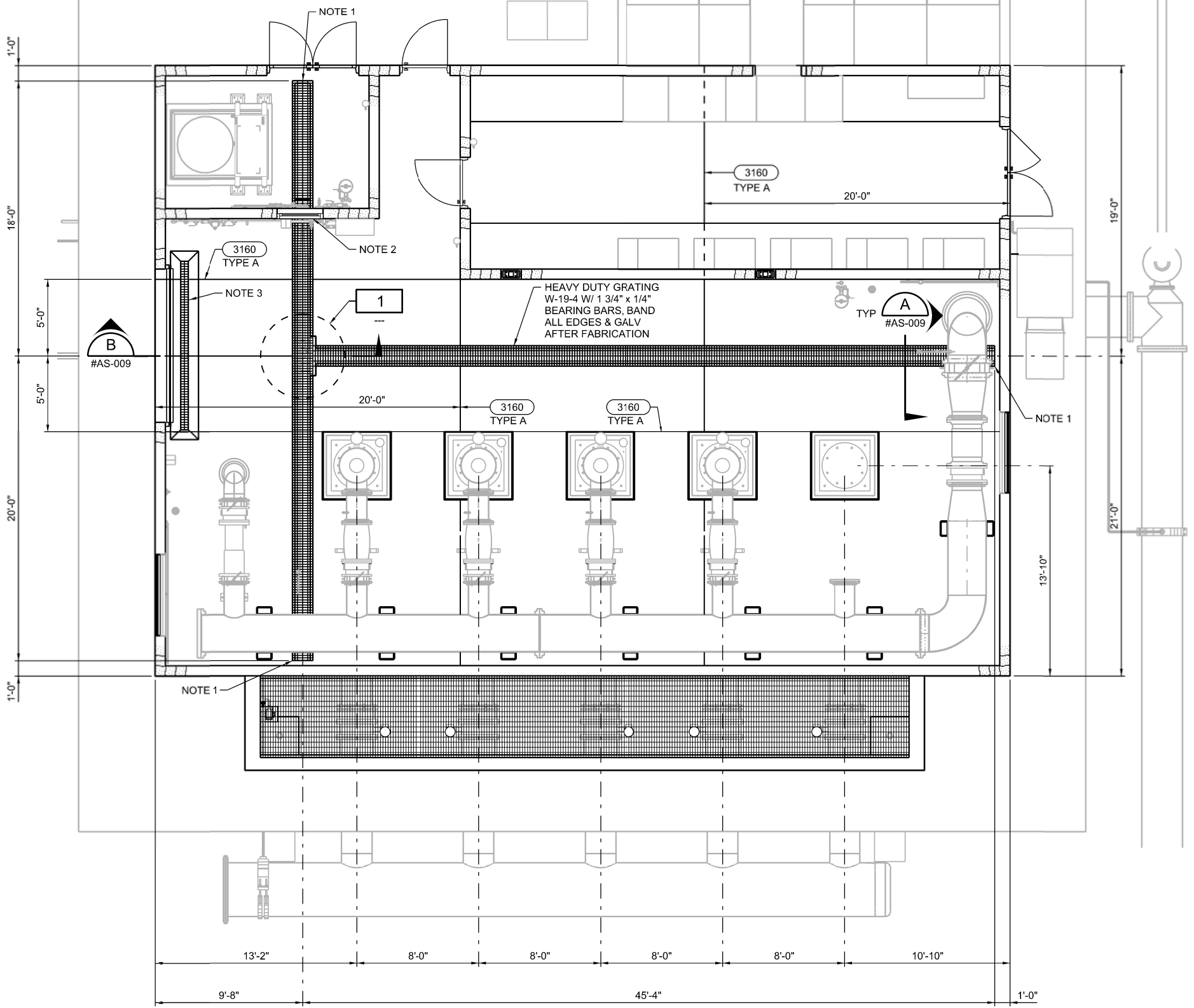
FOUNDATION PLAN
1/4" = 1'-0"



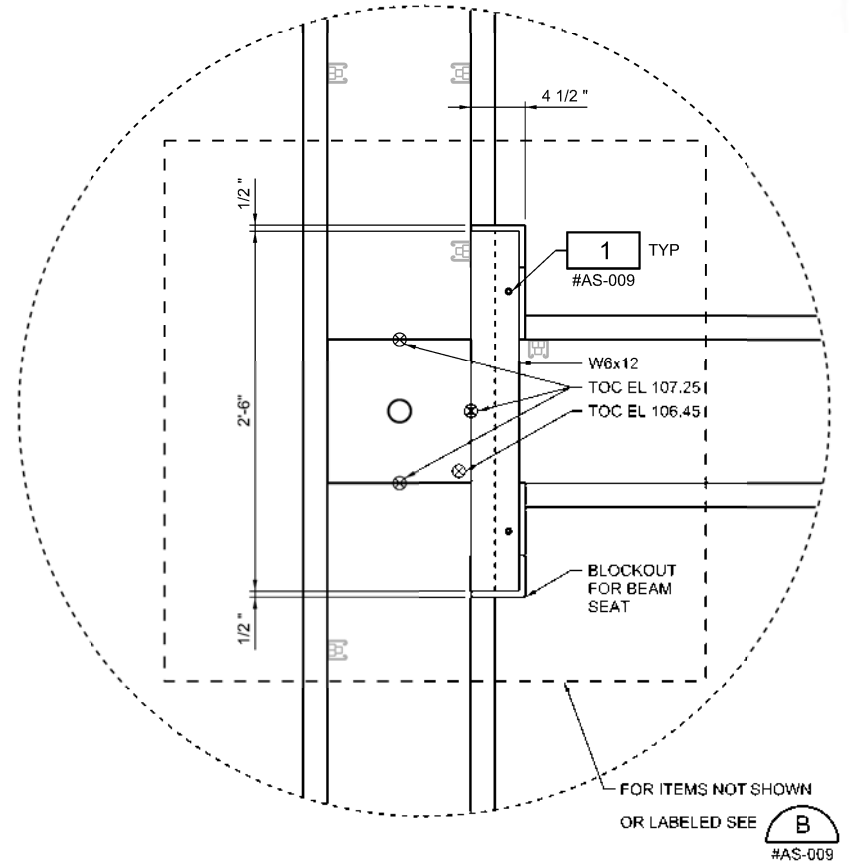
FOR PROPOSAL PURPOSES ONLY, NOT FOR CONSTRUCTION

[Professional Engineer Seal]
NEW L. LINDEMANN
No. C88058
CIVIL
STATE OF CALIFORNIA
11-14-19

DESIGNED A LINDEMANN	DRAWN J MARTIN	CHECKED S KADER	APPROVED M FISHER
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 • Roseville, CA 95661 • (916) 789-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
ARCHITECTURAL/STRUCTURAL BOOSTER PUMP STATION FOUNDATION PLAN			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD20-AS-003			
SHEET NUMBER 83			

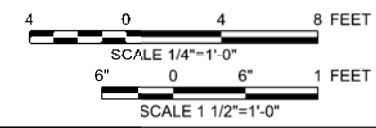


- NOTES:
1. TRENCH TCC EL 108.02.
 2. STOP AND START GRATING EA SIDE OF WALL. CONTINUE BTM WALL FTG REINF UNDER TRENCH.
 3. 6" PREFABRICATED TRENCH DRAIN. CENTER ON ROLL UP DOOR AND ENTEND 6" MIN BEYOND ENDS OF DOOR. ROUTE DRAIN TO SUMP.



1 PARTIAL PLAN
1 1/2"=1'-0"

TRENCH LAYOUT PLAN
1/4" = 1'-0"

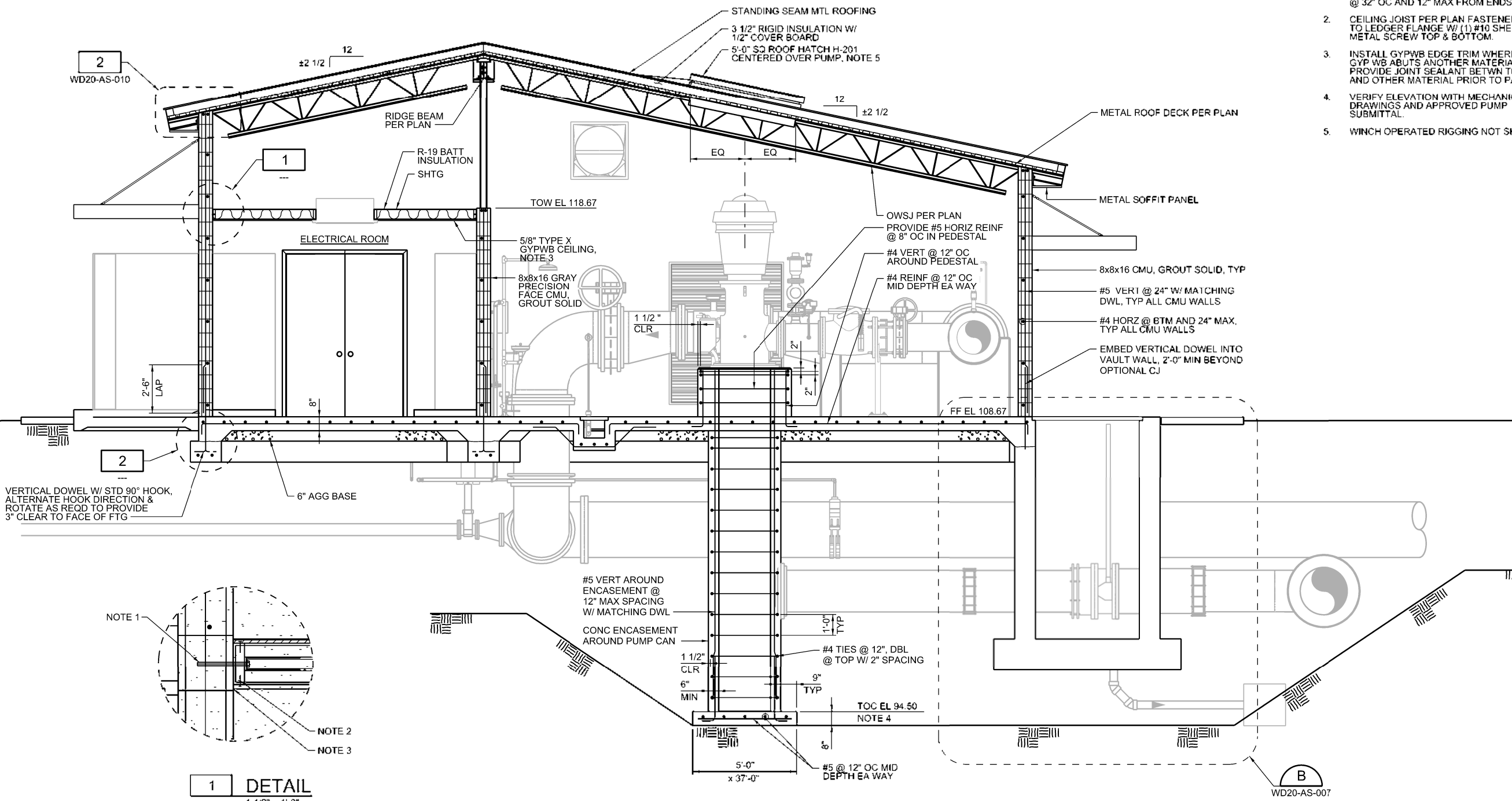


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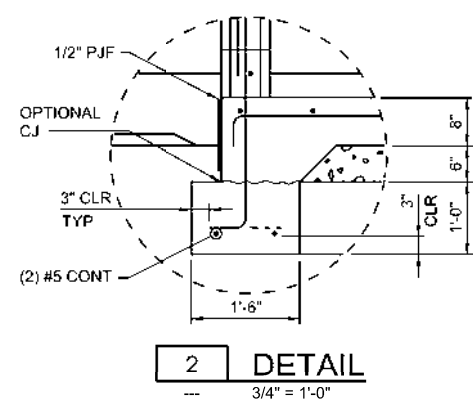
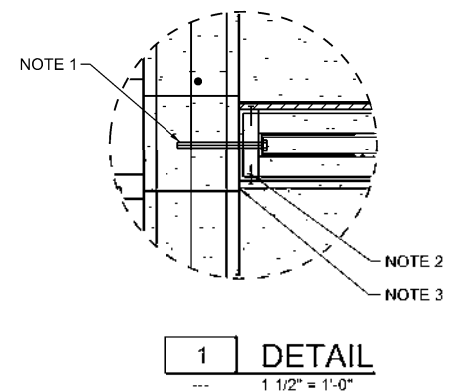


DESIGNED A LINDEMAN	DRAWN J MARTIN	CHECKED S KADER	APPROVED W FISHER	 CITY OF ROSEVILLE CALIFORNIA	WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 Roseville, CA 95661 • 916-780-2688	 CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	ARCHITECTURAL/STRUCTURAL BOOSTER PUMP STATION TRENCH LAYOUT PLAN AND PARTIAL PLAN	DATE NOVEMBER 2019
								PROJECT NUMBER 17-083
								DRAWING NUMBER WD20-AS-004
								SHEET NUMBER 84

1 2 3 4 5 6

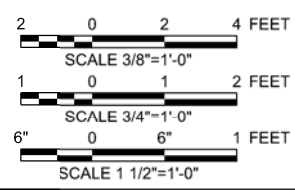


- NOTES:
1. LEDGER PER PLAN W/ 1/2" DIA AB @ 32" OC AND 12" MAX FROM ENDS.
 2. CEILING JOIST PER PLAN FASTENED TO LEDGER FLANGE W/ (1) #10 SHEET METAL SCREW TOP & BOTTOM.
 3. INSTALL GYPWB EDGE TRIM WHERE GYP WB ABUTS ANOTHER MATERIAL. PROVIDE JOINT SEALANT BETWN TRIM AND OTHER MATERIAL PRIOR TO PAINTING.
 4. VERIFY ELEVATION WITH MECHANICAL DRAWINGS AND APPROVED PUMP SUBMITTAL.
 5. WINCH OPERATED RIGGING NOT SHOWN.



A SECTION

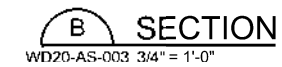
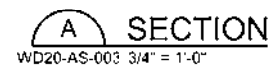
WD20-AS-003 3/8" = 1'-0"



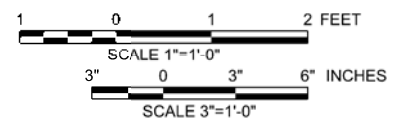
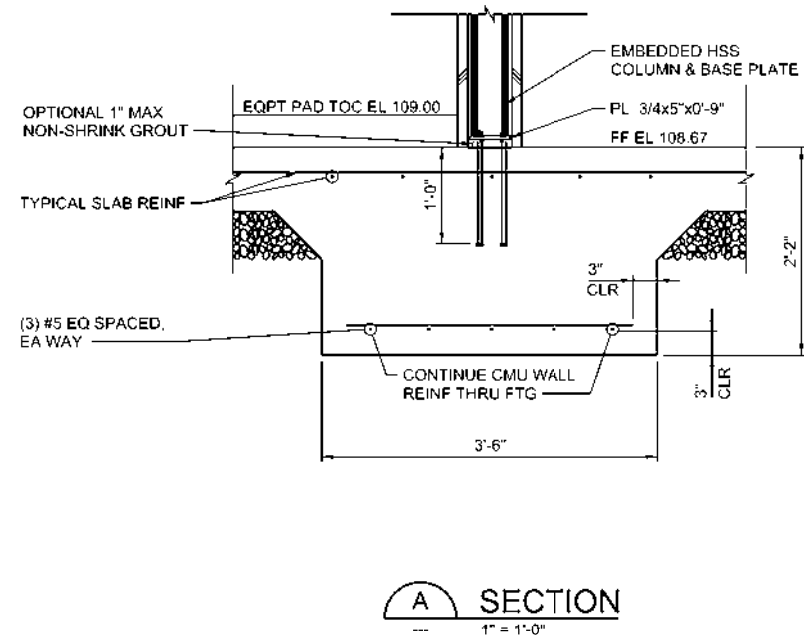
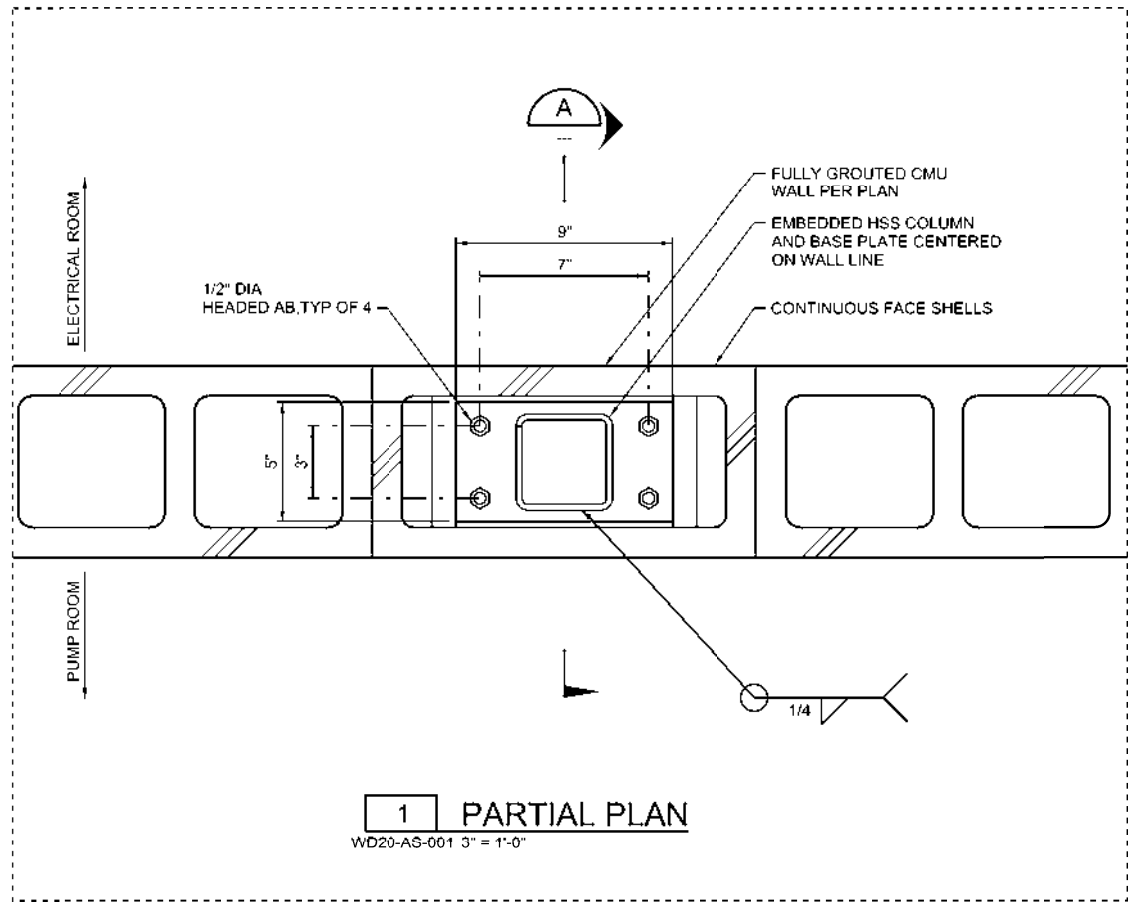
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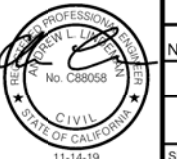
DESIGNED A LINDEMAN	DRAWN J MARTIN	CHECKED S KADER	APPROVED M FISHER
 CITY OF ROSEVILLE CALIFORNIA			
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-780-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
ARCHITECTURAL/STRUCTURAL BOOSTER PUMP STATION SECTION AND DETAILS			
DATE NOVEMBER 2019		PROJECT NUMBER 17-083	
DRAWING NUMBER WD20-AS-006		SHEET NUMBER 86	



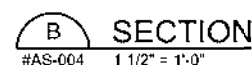
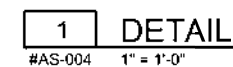
1 0 1 2 FEET
SCALE 3/4"=1'-0"

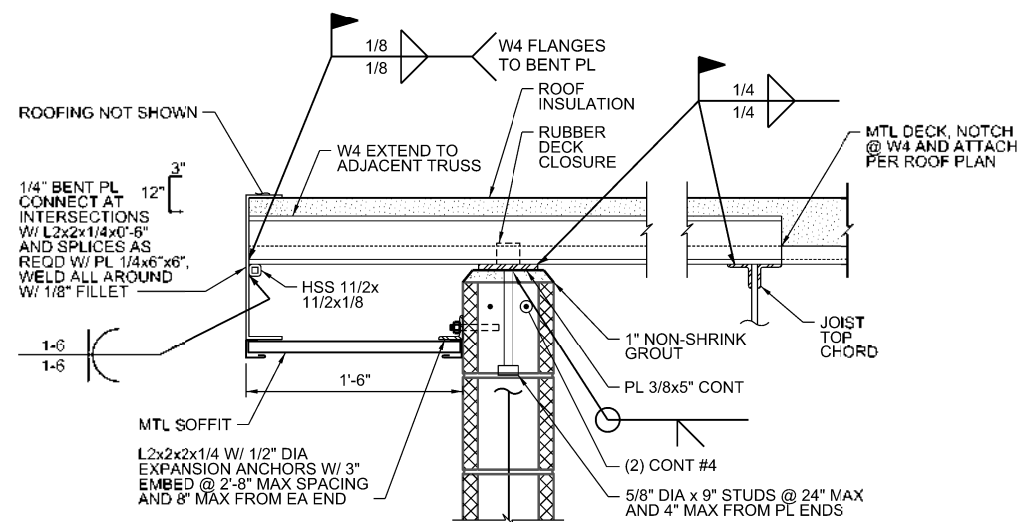


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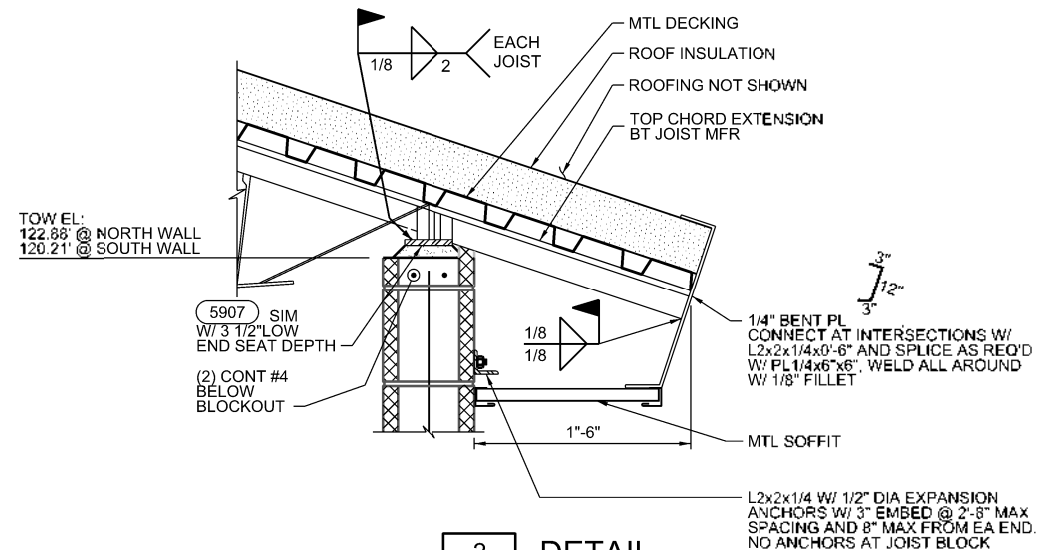


DESIGNED A LINDEMAN	DRAWN J MARTIN	CHECKED S KADER	APPROVED M FISHER
 CITY OF ROSEVILLE CALIFORNIA			
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-780-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
ARCHITECTURAL/STRUCTURAL BOOSTER PUMP STATION SECTIONS			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD20-AS-008			
SHEET NUMBER 88			

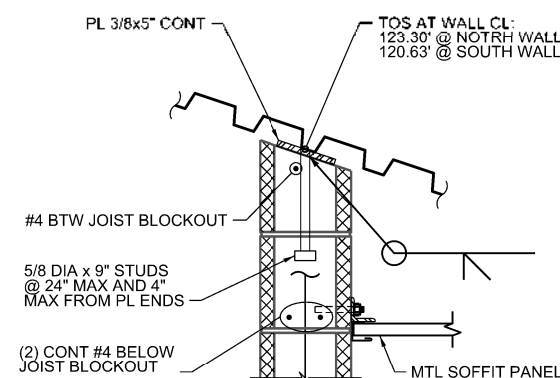




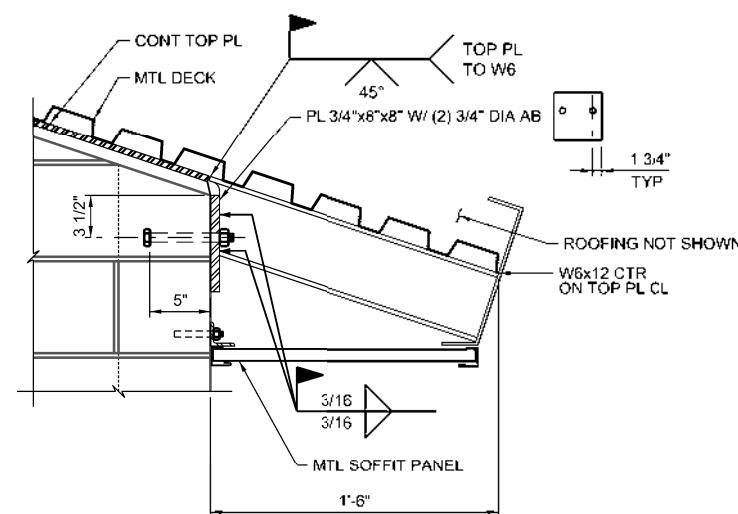
1 DETAIL
WD20-AS-005 1 1/2" = 1'-0"



2 DETAIL
WD20-AS-005 NTS

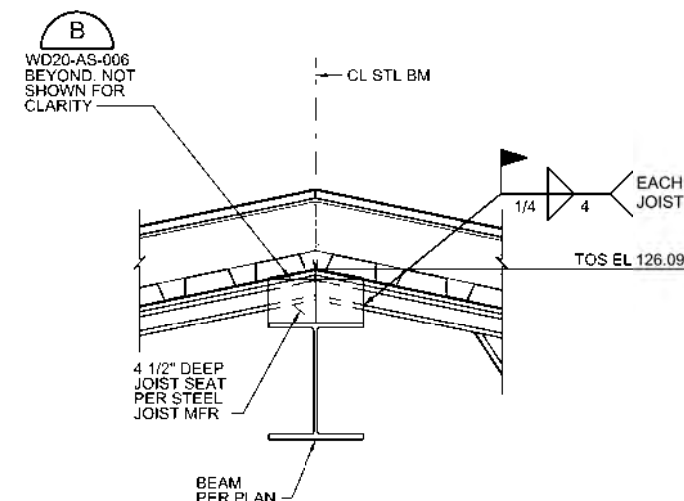


3 DETAIL
WD20-AS-005 1 1/2" = 1'-0"



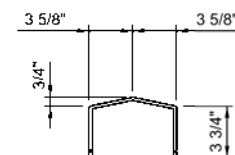
4 DETAIL
WD20-AS-005 NTS

NOTES:
1. FOR SECTION CUTS, REPLACE " # " WITH " WD20-# "

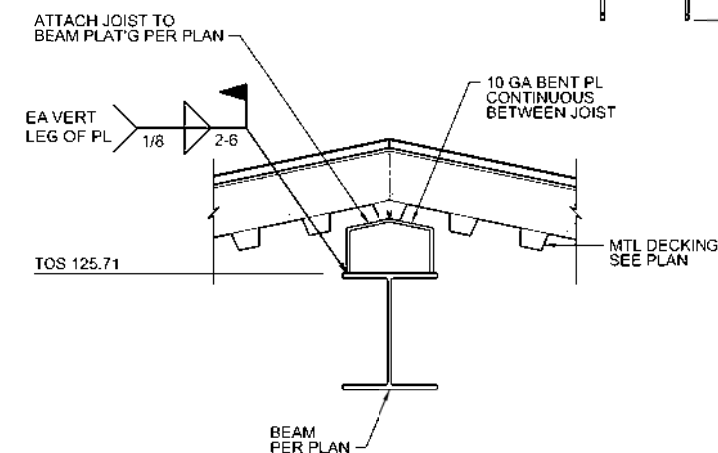


A SECTION
#AS-005 1 1/2" = 1'-0"

(VERIFY/COORDINATE
W/ JOIST SEAT HEIGHT
PRIOR TO FABRICATION)



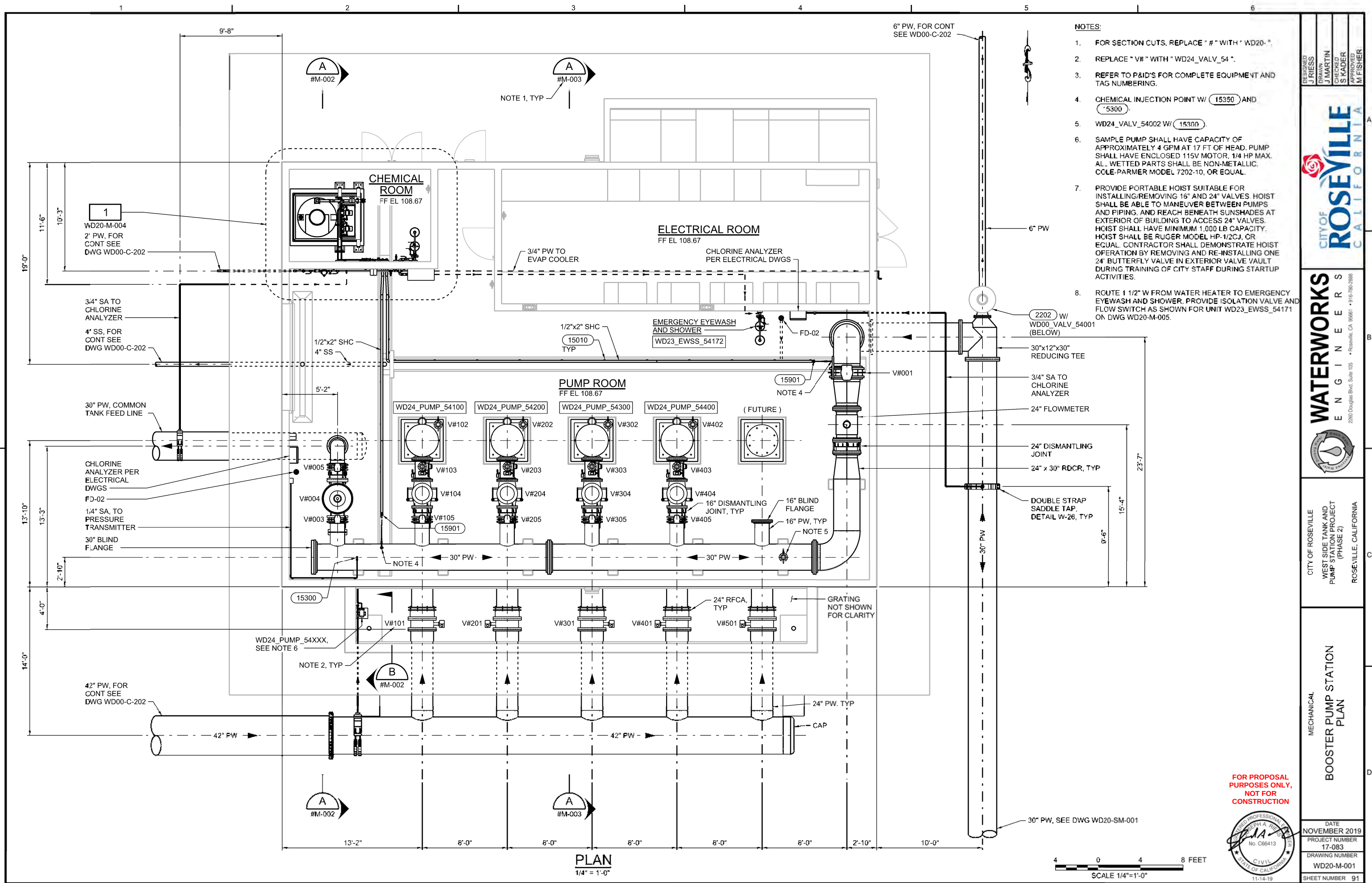
B SECTION
#AS-005 1 1/2" = 1'-0"



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CONSTRUCTION**

6" 0 6" 1 FEET
SCALE 1 1/2" = 1'-0"





- NOTES:**
- FOR SECTION CUTS, REPLACE " # " WITH " WD20- # ".
 - REPLACE " V# " WITH " WD24_VALV_54 ".
 - REFER TO P&ID'S FOR COMPLETE EQUIPMENT AND TAG NUMBERING.
 - CHEMICAL INJECTION POINT W/ (15300) AND (5300).
 - WD24_VALV_54002 W/ (15300).
 - SAMPLE PUMP SHALL HAVE CAPACITY OF APPROXIMATELY 4 GPM AT 17 FT OF HEAD. PUMP SHALL HAVE ENCLOSED 115V MOTOR, 1/4 HP MAX. ALL WETTED PARTS SHALL BE NON-METALLIC, COLE-PARMER MODEL 7202-10, OR EQUAL.
 - PROVIDE PORTABLE HOIST SUITABLE FOR INSTALLING/REMOVING 16" AND 24" VALVES. HOIST SHALL BE ABLE TO MANEUVER BETWEEN PUMPS AND PIPING, AND REACH BENEATH SUNSHADES AT EXTERIOR OF BUILDING TO ACCESS 24" VALVES. HOIST SHALL HAVE MINIMUM 1,000 LB CAPACITY. HOIST SHALL BE RUGER MODEL HP-1/2CJ, OR EQUAL. CONTRACTOR SHALL DEMONSTRATE HOIST OPERATION BY REMOVING AND RE-INSTALLING ONE 24" BUTTERFLY VALVE IN EXTERIOR VALVE VAULT DURING TRAINING OF CITY STAFF DURING STARTUP ACTIVITIES.
 - ROUTE 1 1/2" W FROM WATER HEATER TO EMERGENCY EYEWASH AND SHOWER. PROVIDE ISOLATION VALVE AND FLOW SWITCH AS SHOWN FOR UNIT WD23_EWSS_54171 ON DWG WD20-M-005.

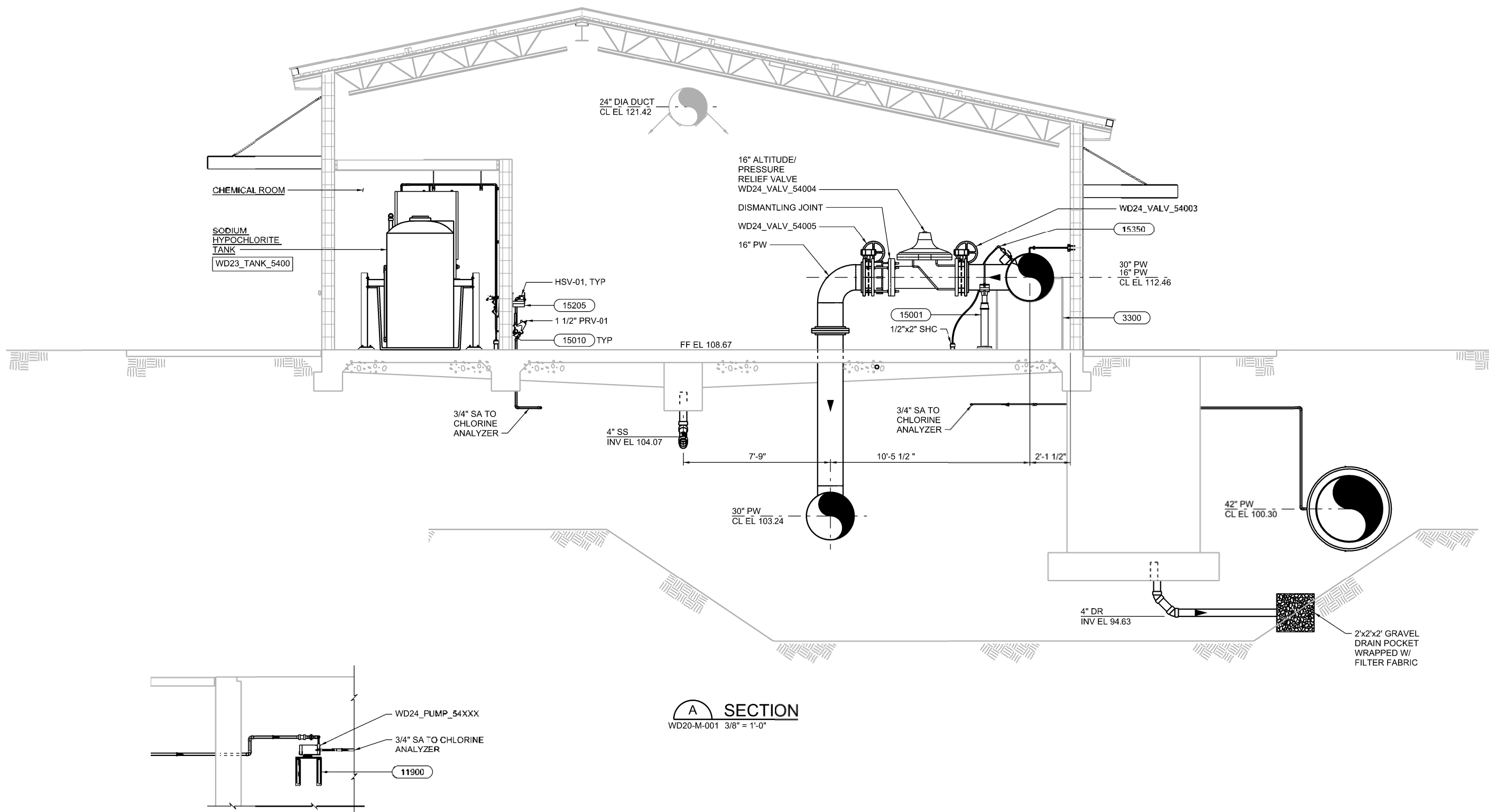
DESIGNED J. RESS	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
CITY OF ROSEVILLE ENGINEERS 2200 Douglas Blvd, Suite 105 Roseville, CA 95661 • 916-780-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
MECHANICAL BOOSTER PUMP STATION PLAN			
DATE NOVEMBER 2019		PROJECT NUMBER 17-083	
DRAWING NUMBER WD20-M-001		SHEET NUMBER 91	

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SCALE 1/4"=1'-0"

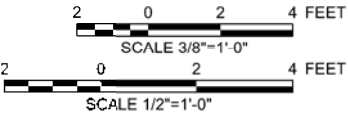
FILENAME: WD5420M001.dgn PLOT DATE: 11/7/2019 2:40:39 PM

NOTE:
1. REFER TO P&ID'S FOR COMPLETE EQUIPMENT & TAG NUMBERING.



A SECTION
WD20-M-001 3/8" = 1'-0"

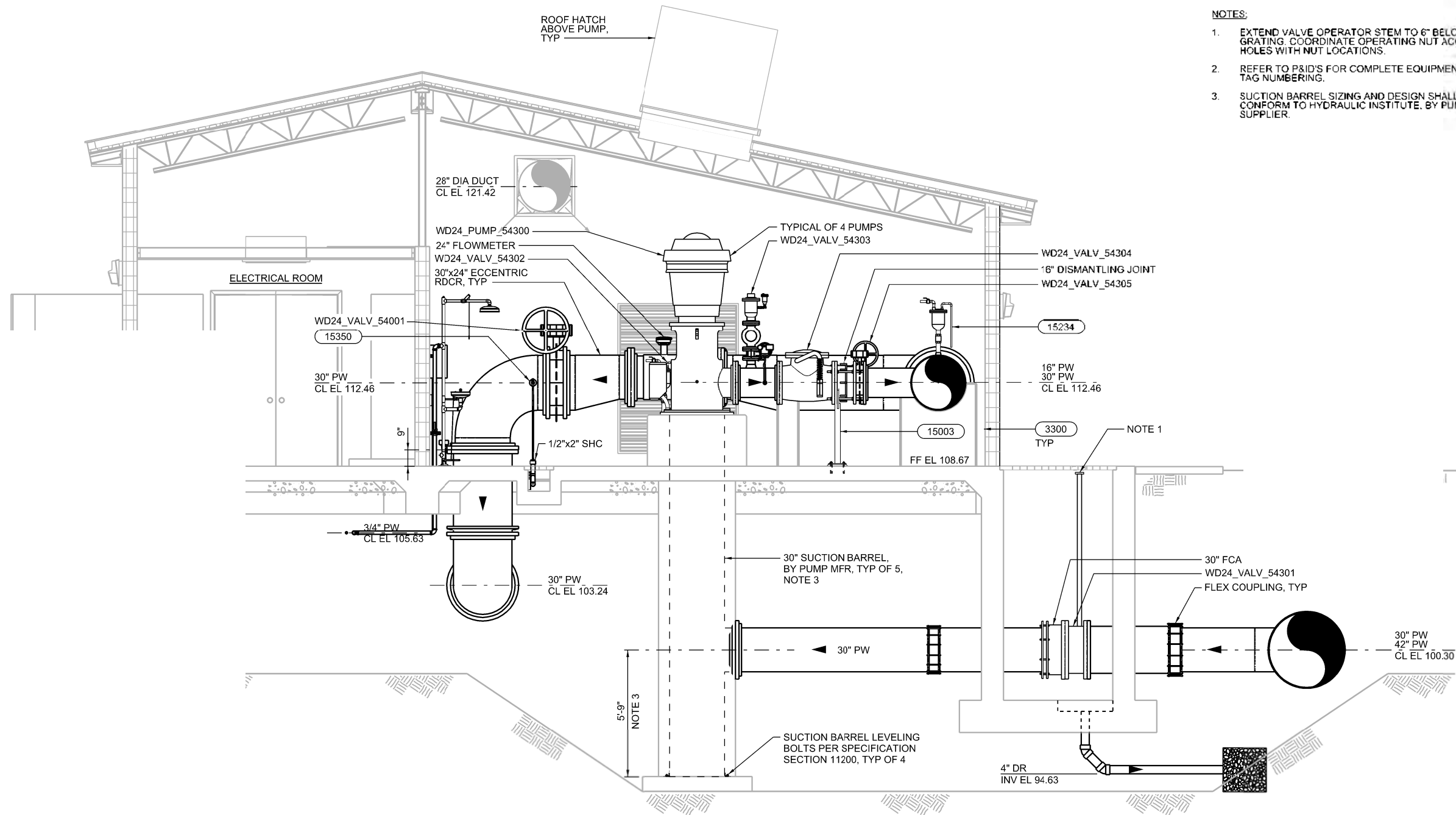
B SECTION
WD20-M-001 1/2" = 1'-0"



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CONSTRUCTION



DESIGNED J. RIOS	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
 CITY OF ROSEVILLE CALIFORNIA			
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 Roseville, CA 95661 • 916-789-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
MECHANICAL BOOSTER PUMP STATION SECTIONS			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD20-M-002			
SHEET NUMBER 92			



- NOTES:**
1. EXTEND VALVE OPERATOR STEM TO 6" BELOW GRATING. COORDINATE OPERATING NUT ACCESS HOLES WITH NUT LOCATIONS.
 2. REFER TO P&ID'S FOR COMPLETE EQUIPMENT & TAG NUMBERING.
 3. SUCTION BARREL SIZING AND DESIGN SHALL CONFORM TO HYDRAULIC INSTITUTE, BY PUMP SUPPLIER.

A SECTION
WD20-M-001 3/8" = 1'-0"

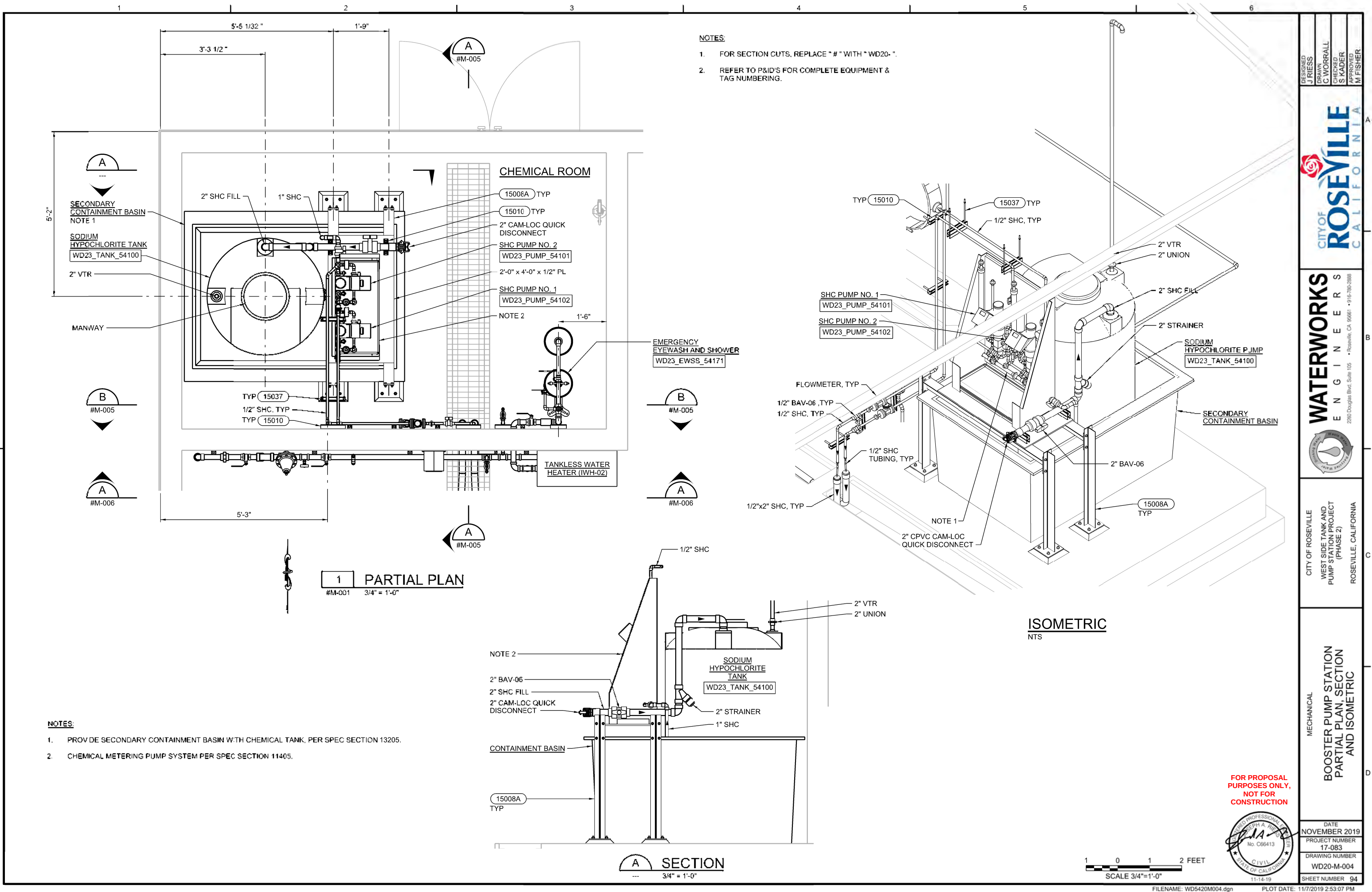
2 0 2 4 FEET
SCALE 3/8"=1'-0"

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CONSTRUCTION



FILENAME: WD5420M003.dgn PLOT DATE: 11/7/2019 2:51:51 PM

DESIGNED J. RIOS	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-780-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
MECHANICAL BOOSTER PUMP STATION SECTION			
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD20-M-003 SHEET NUMBER 93			



1 2 3 4 5 6

- NOTES:
1. FOR SECTION CUTS, REPLACE " # " WITH " WD20-#".
 2. REFER TO P&ID'S FOR COMPLETE EQUIPMENT & TAG NUMBERING.

DESIGNED	J. RESS
DRAWN	C. WORRALL
CHECKED	S. KADER
APPROVED	M. FISHER



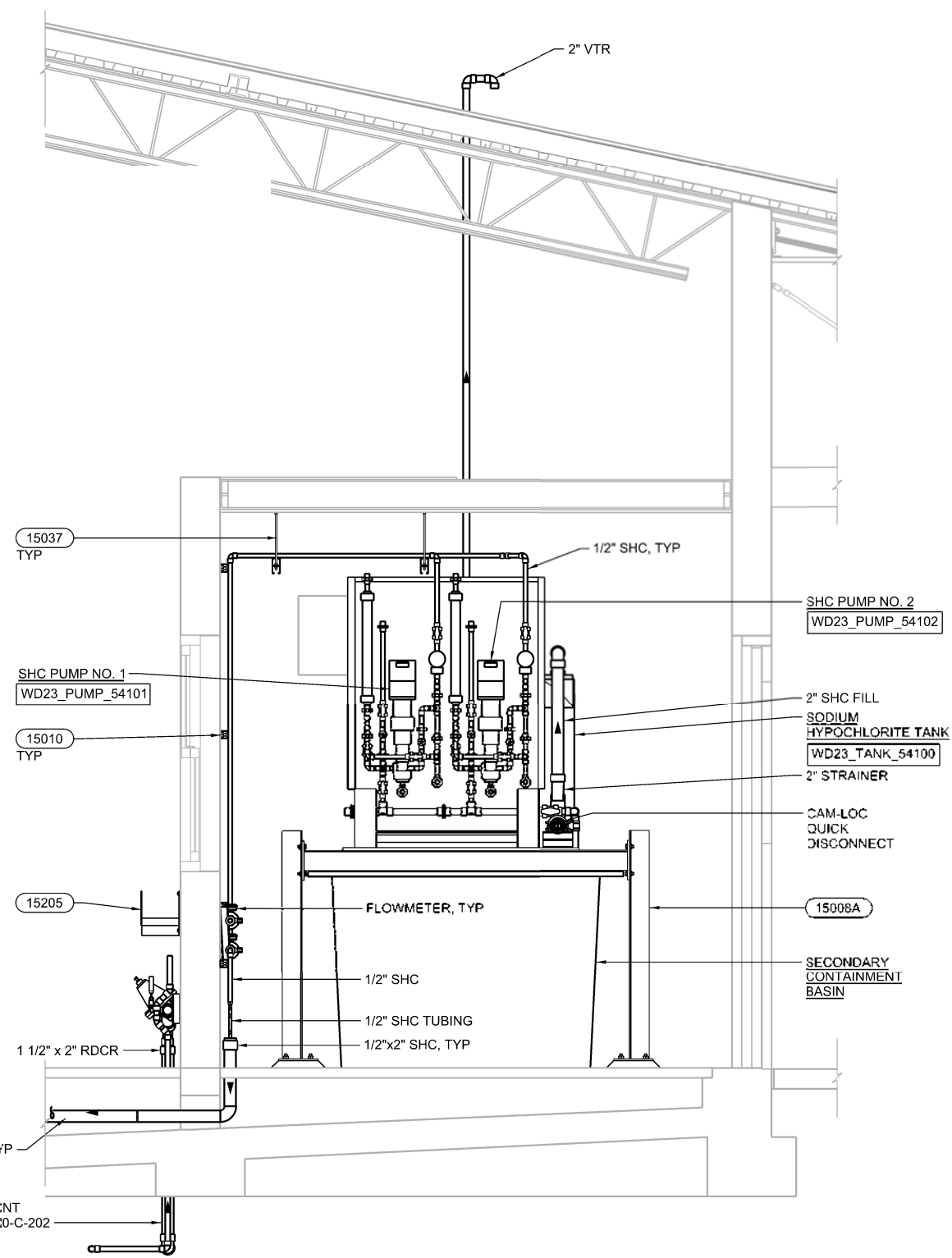
WATERWORKS
ENGINEERS
2200 Douglas Blvd, Suite 105
Roseville, CA 95661 • 916-780-2888



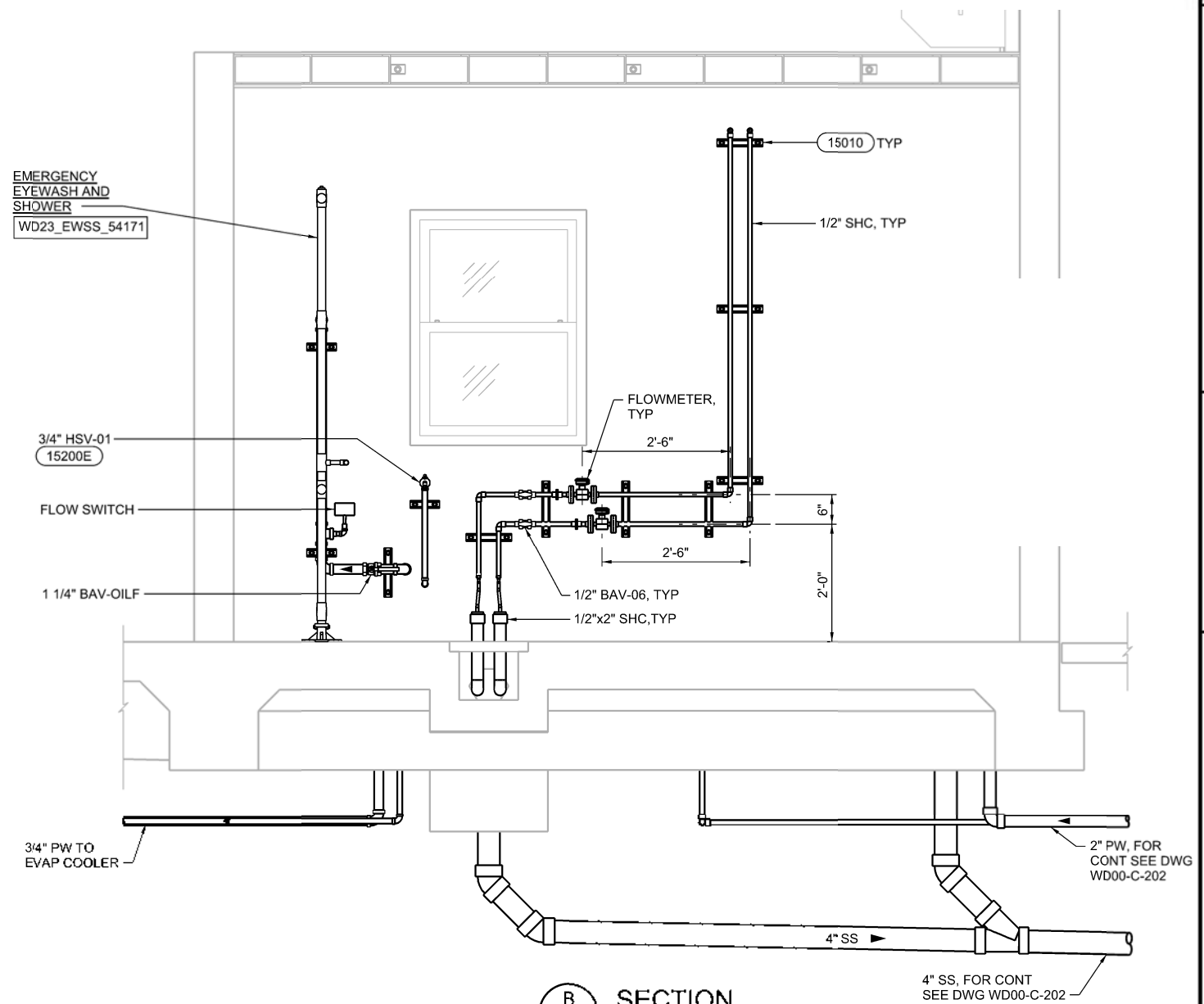
CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

MECHANICAL
BOOSTER PUMP STATION
SECTIONS

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD20-M-005
SHEET NUMBER	95



A SECTION
#M-001 3/4" = 1'-0"

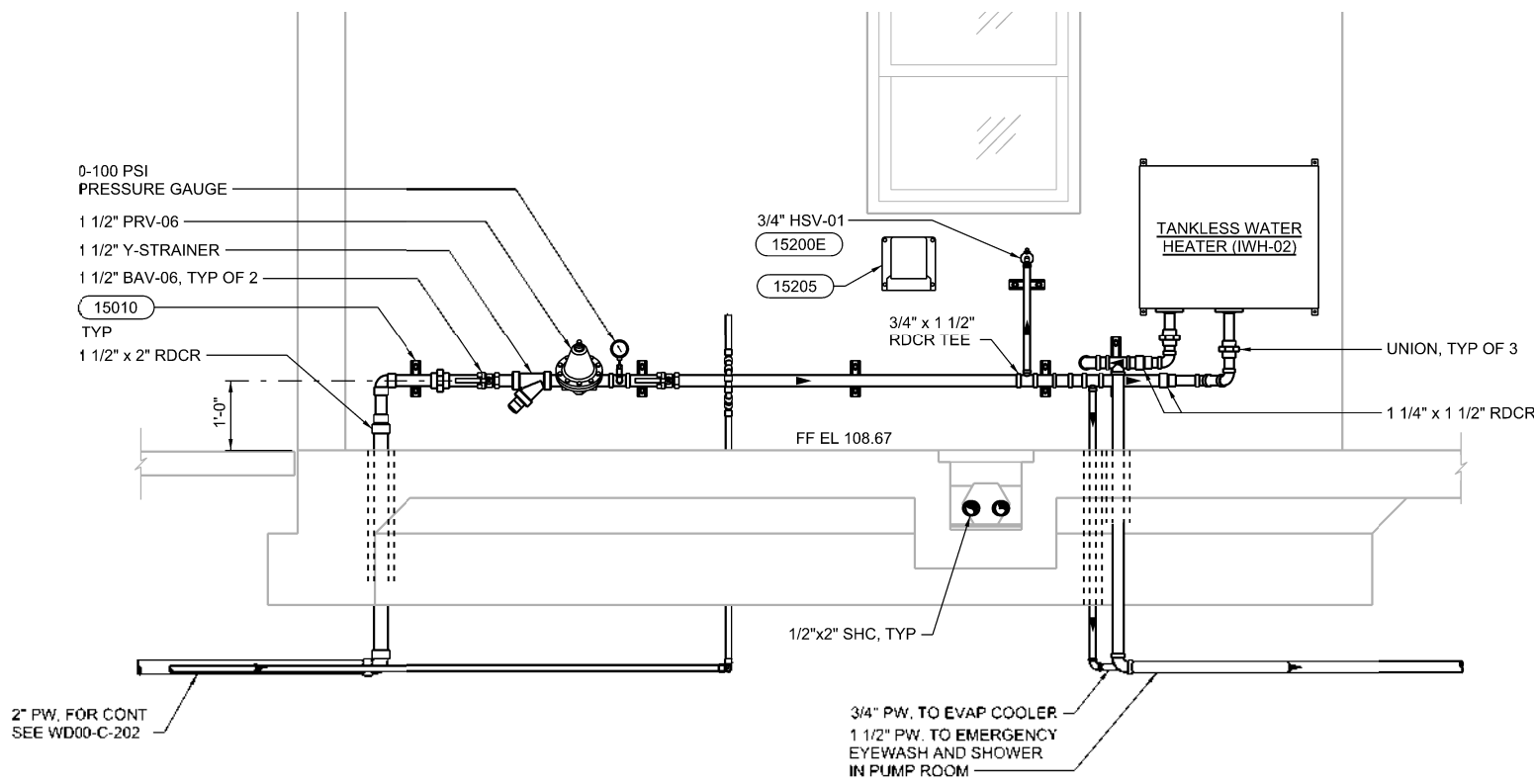


B SECTION
#M-001 3/4" = 1'-0"

1 0 1 2 FEET
SCALE 3/4" = 1'-0"

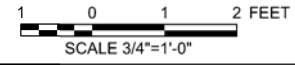
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A SECTION
#M-004 3/4" = 1'-0"

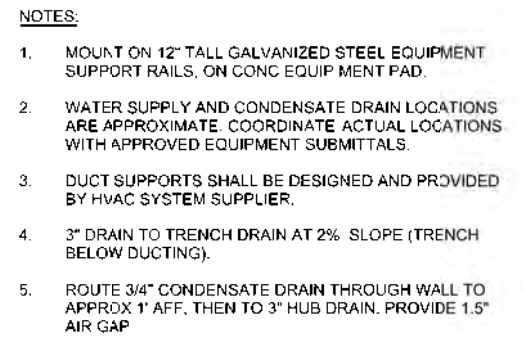
- NOTE:**
1. FOR SECTION CUTS, REPLACE " # " WITH " WD20- ".
 2. REFER TO P&ID'S FOR COMPLETE EQUIPMENT & TAG NUMBERING.



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CONSTRUCTION**



DESIGNED J. RIESS	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
			
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-780-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
MECHANICAL BOOSTER PUMP STATION SECTION			
DATE NOVEMBER 2019		PROJECT NUMBER 17-083	
DRAWING NUMBER WD20-M-006		SHEET NUMBER 96	



1. MOUNT ON 12" TALL GALVANIZED STEEL EQUIPMENT SUPPORT RAILS. ON CONC EQUIPMENT PAD.
2. WATER SUPPLY AND CONDENSATE DRAIN LOCATIONS ARE APPROXIMATE. COORDINATE ACTUAL LOCATIONS WITH APPROVED EQUIPMENT SUBMITTALS.
3. DUCT SUPPORTS SHALL BE DESIGNED AND PROVIDED BY HVAC SYSTEM SUPPLIER.
4. 3" DRAIN TO TRENCH DRAIN AT 2% SLOPE (TRENCH BELOW DUCTING).
5. ROUTE 3/4" CONDENSATE DRAIN THROUGH WALL TO APPROX 1' AFF, THEN TO 3" HUB DRAIN. PROVIDE 1.5" AIR GAP



CITY OF
ROSEVILLE
CALIFORNIA

HVAC
BOOSTER PUMP STATION
PLAN

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD20-H-001
SHEET NUMBER	97

FILENAME: WD5420H001.dgn PLOT DATE: 11/7/2018 3:36:45 PM

EVAPORATIVE COOLER SCHEDULE																		
LABEL	MAKE	MODEL	COOLING			FAN			DUCT OUTLET CONFIG.	ELECTRICAL								OPER. WEIGHT LBS.
			MEDIA	LAT*	EFFICIENCY	CFM	ESP	HP		FAN MOTOR				PUMP				
										VOLT	PH	HZ	AMPS	VOLT	PH	HZ	AMPS	
WD05_EVAP_5471 1	PHOENIX MFG	IS500 w/ WS100	12" STD. RIGID	74.1	90%	9,000	0.5"	3	SIDE	480	3	60	8	240	1	60	1.1	565
* AT 102/71 OAT DB/WB																		
OPTIONS: 1. UL RATED 2. PUMP KIT PK2LA																		

VRF OUTDOOR UNIT SCHEDULE																
LABEL	MAKE	MODEL	SYSTEM CONNECTED CAPACITY	COOLING				HEATING			ELECTRICAL					OPER. WEIGHT LBS.
				NOMINAL TONS	TOTAL* BTU/HR	IEER	EER	NOMINAL** BTU/HR	COP	EER	VOLT	PH	HZ	MCA	MOCP	
WD05_HVAC_54701	CARRIER-TOSHIBA	MMY-MAP1686HT6P-UL	100%	14	153,458	22.4	11	136,809	3.7	11.1	460	3	60	31	40	838
* AT 105°F OAT AND 80°F/67°F EAT DB/WB																
** AT 27°F OAT DB																
OPTIONS: 1. R-410a REFRIGERANT 2. REFRIGERANT Y-POINTS AS REQUIRED																

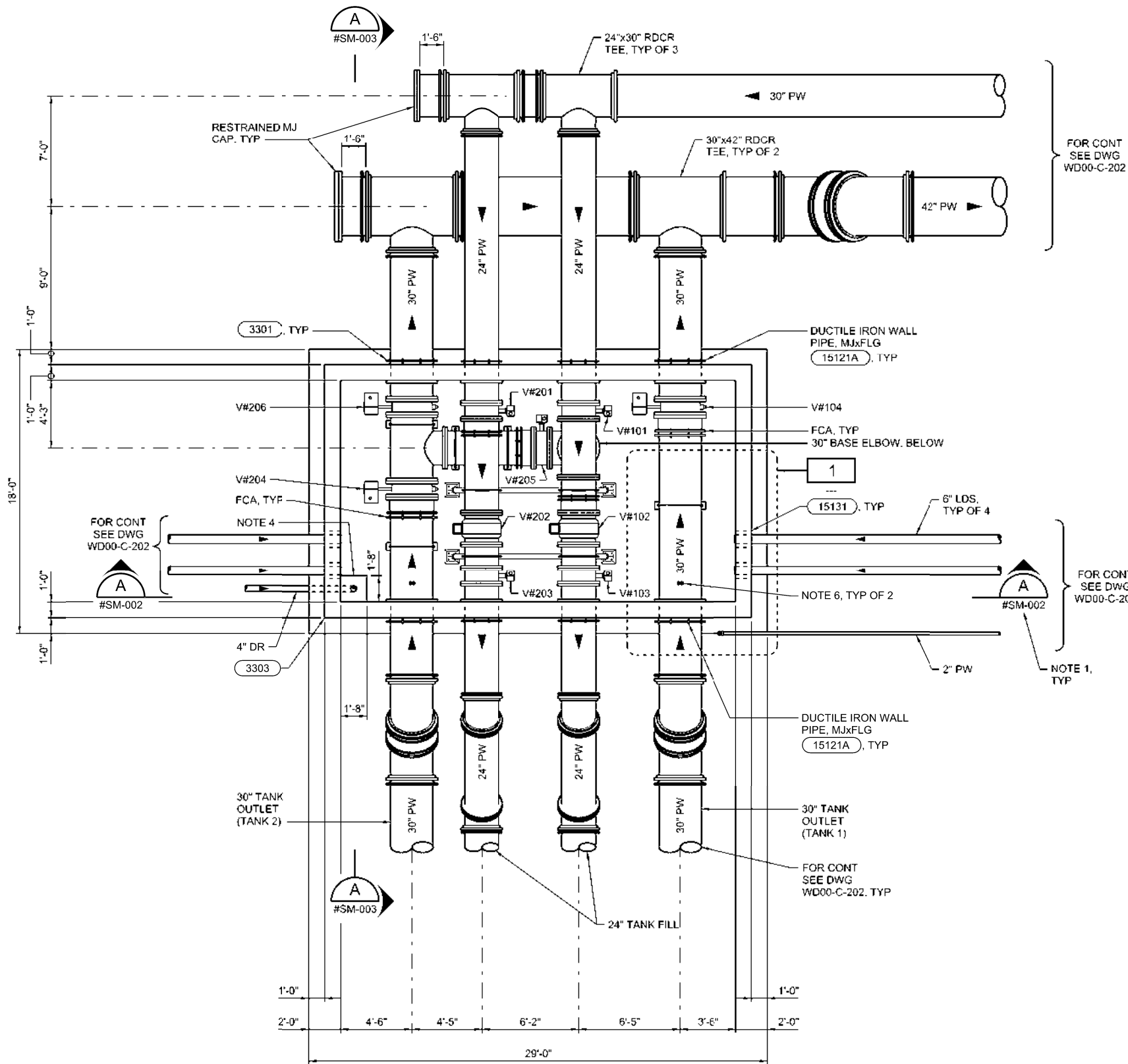
VRF FAN COIL UNIT SCHEDULE																	
LABEL	MAKE	MODEL	TYPE	MATCHING OUTDOOR UNIT	COOLING		HEATING*	SUPPLY FAN		MIN. OA	ELECTRICAL						OPER.
					NOMINAL TONS	SENSIBLE* BTU/HR	BTU/HR	CFM	ESP	CFM	VOLT	PH	HZ	FLA	MCA	MOCP	WEIGHT LBS.
WD05_HVAC_54702	CARRIER-TOSHIBA	MMU-AP0422H2UL	4-WAY CASSETTE	WD05_HVAC_54702	3.5	26,851	34,202	1,250	0.0"	0	208	1	60	1.0	1.3	15	69
WD05_HVAC_54703	CARRIER-TOSHIBA	MMU-AP0422H2UL	4-WAY CASSETTE		3.5	26,851	34,202	1,250	0.0"	0	208	1	60	1.0	1.3	15	69
WD05_HVAC_54704	CARRIER-TOSHIBA	MMU-AP0422H2UL	4-WAY CASSETTE		3.5	26,851	34,202	1,250	0.0"	0	208	1	60	1.0	1.3	15	69
WD05_HVAC_54705	CARRIER-TOSHIBA	MMU-AP0422H2UL	4-WAY CASSETTE		3.5	26,851	34,202	1,250	0.0"	0	208	1	60	1.0	1.3	15	69
* AT 105°F OAT AND 80°F/67°F EAT DB/WB																	
** AT 27°F OAT DB																	
OPTIONS: 1. 24V INTERFACE 2. GRILLE																	

EXHAUST FAN SCHEDULE									
LABEL	MAKE	MODEL	CFM	ESP	ELECTRIC				OPER. WEIGHT
					VOLT	PH	HZ	HP	
WD05_FANx_54705	GREENHECK	SE1-10-428-P	250	0.2	115	1	60	1/20	59
* AT 102 OAT DB,									
OPTIONS:									
1. BACKDRAFT DAMPER					4. SPEED CONTROLLER				
2. UL LISTED					5. DISCONNECT SWITCH				
3. WALL HOUSING W/ OSHA GUARD					6. MOTOR ACCESS FROM INSIDE				

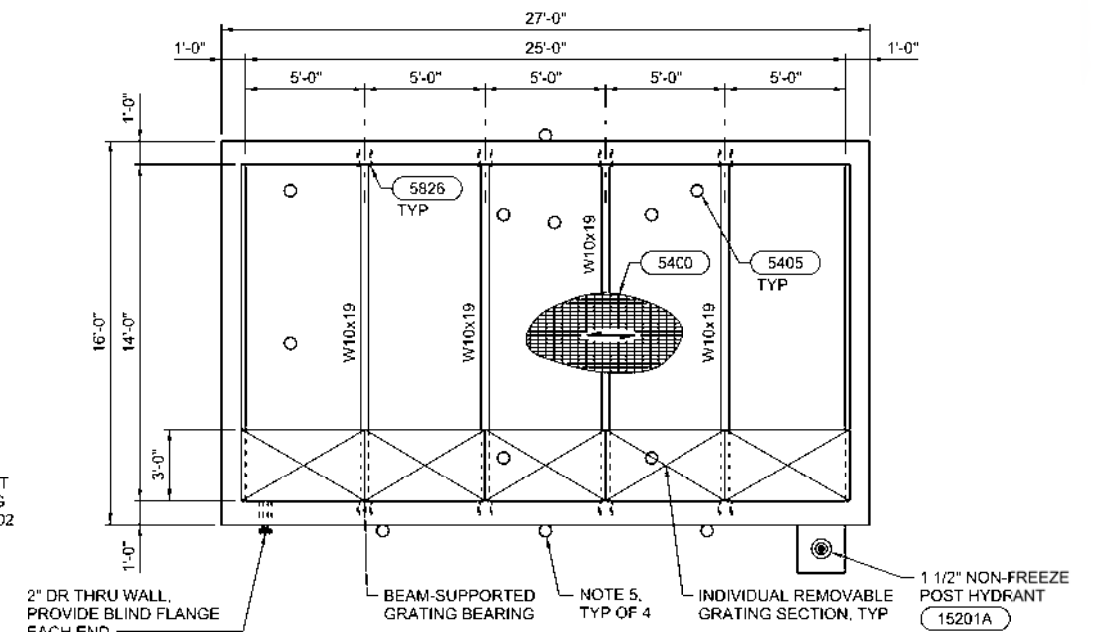
NOTES:
1. VRF = VARIABLE REFRIGERANT FLOW

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CONSTRUCTION

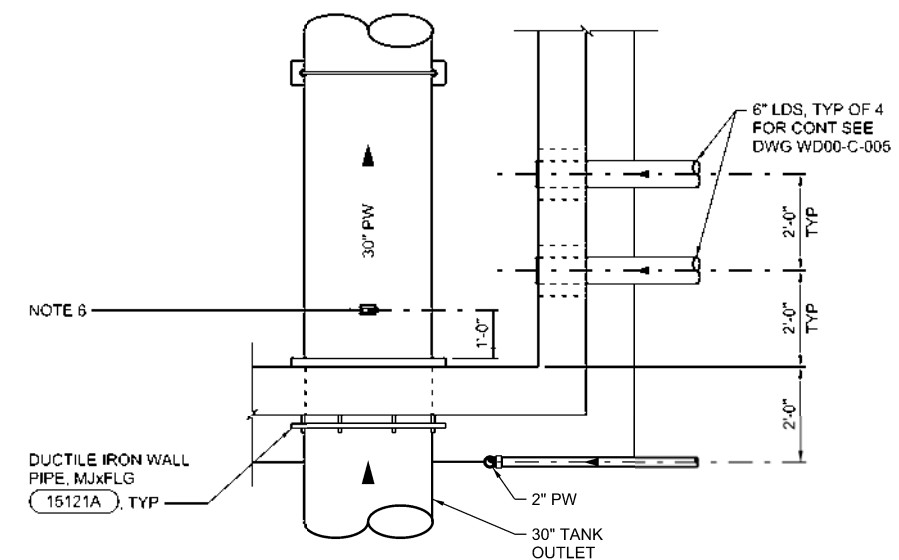




LOWER PLAN
1/4" = 1'-0"

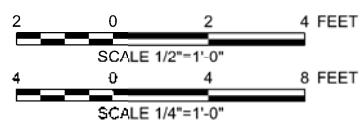


UPPER PLAN
1/4" = 1'-0"



1 DETAIL
1/2" = 1'-0"

- NOTES:**
1. REPLACE " # " IN DRAWING REFERENCES WITH " WD40-".
 2. REPLACE "V#" WITH "WD44_VALV_54".
 3. GRATING AND SUPPORT BEAMS ARE SIZED FOR A 125 PSF LIVE LOAD.
 4. 3" DEEP-IN SLAB SUMP PER 3610 TYPE A.
 5. WALL-MOUNT BASE FOR PORTABLE ENSIGN 1000 ELECTRIC DAVIT. CONFIRM LOCATION WITH OWNER.
 6. 1" PIPE TAP PER 15300 FOR PRESSURE TRANSDUCER, SEE ELECTRICAL DRAWINGS.



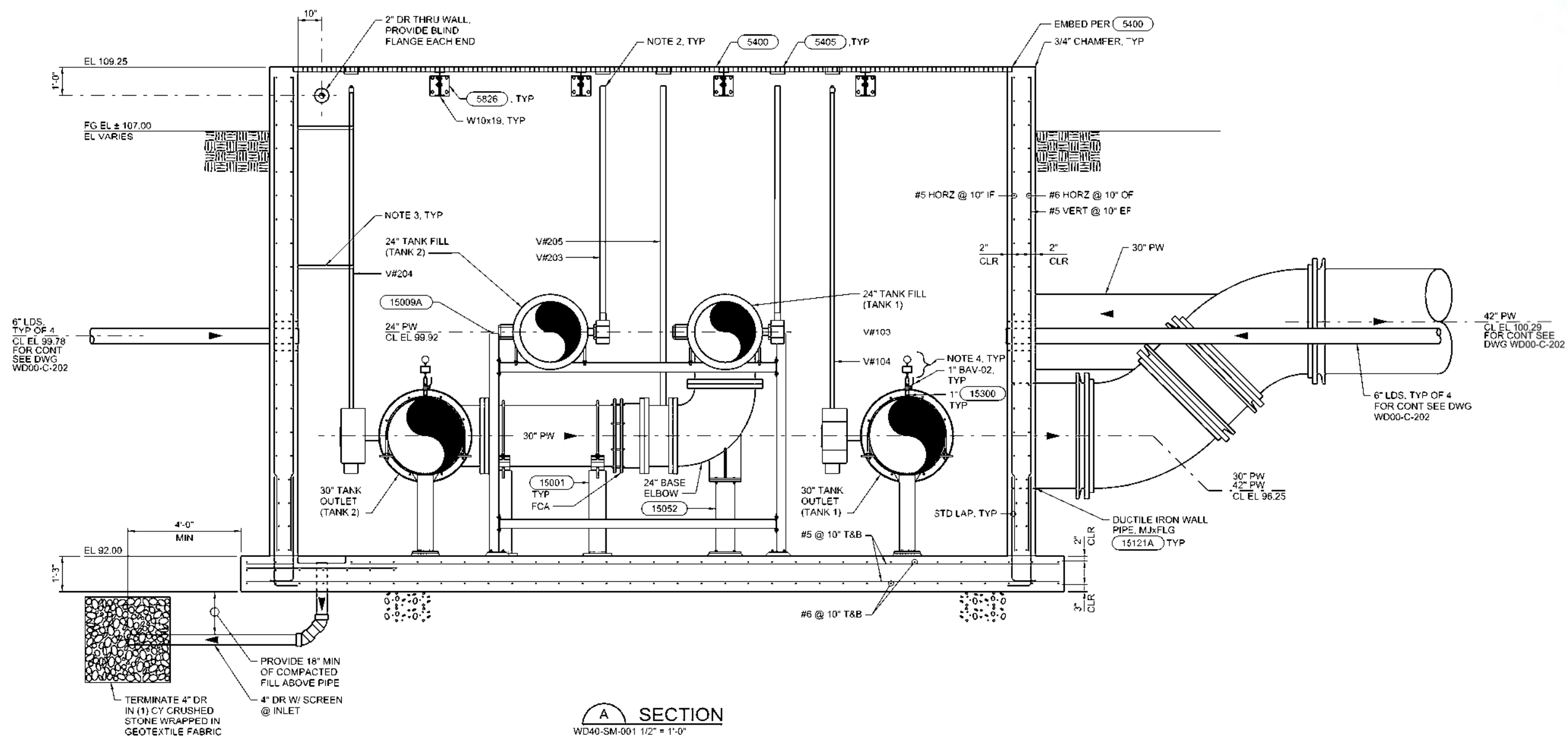
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DESIGNED J. RISS/SJ KELLOGG DRAWN J. MARTIN CHECKED S. KADER APPROVED M. FISHER	 CITY OF ROSEVILLE CALIFORNIA
WATERWORKS ENGINEERS 2200 Douglas Blvd., Suite 105 Roseville, CA 95661 • 916-780-2888	CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA
STRUCTURAL / MECHANICAL TANK VALVE VAULT PLANS AND DETAIL	DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD40-SM-001 SHEET NUMBER 99

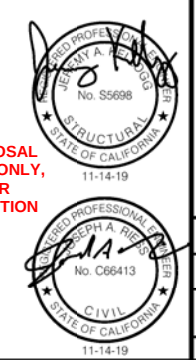
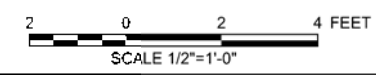
1 2 3 4 5 6

- NOTES:
1. REPLACE "V#" WITH "WD44_VALV_54".
 2. EXTEND VALVE OPERATOR STEM TO 6" BELOW GRATING. COORDINATE OPERATING NUT ACCESS HOLES WITH NUT LOCATIONS.
 3. PROVIDE STEM SUPPORTS AS NECESSARY AND AS RECOMMENDED BY VALVE MANUFACTURER. STEM SUPPORT DESIGN SHALL BE BY CONTRACTOR.
 4. PRESSURE TRANSDUCER AND BLOCK-AND-BLEED VALVE PER ELECTRICAL DRAWINGS.

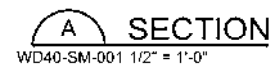


A SECTION
WD40-SM-001 1/2" = 1'-0"

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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL / MECHANICAL TANK VALVE VAULT SECTION			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD40-SM-002			
SHEET NUMBER 100			



11-14-19

FILENAME: WD5440SM003.dgn

PLOT DATE: 11/7/2019 3:03:55 PM

1. REPLACE "V#" WITH "WD44_VALV_54".
2. EXTEND VALVE OPERATOR STEM TO 6" BELOW GRATING. COORDINATE OPERATING NUT ACCESS HOLES WITH NUT LOCATIONS.
3. PROVIDE STEM SUPPORTS AS NECESSARY AND AS RECOMMENDED BY VALVE MANUFACTURER. STEM SUPPORT DESIGN SHALL BE BY CONTRACTOR.
4. 1" PIPE TAP, VALVE AND PRESSURE TRANSDUCER PER DWGS WD40-SM-001 AND WD40-SM-002.

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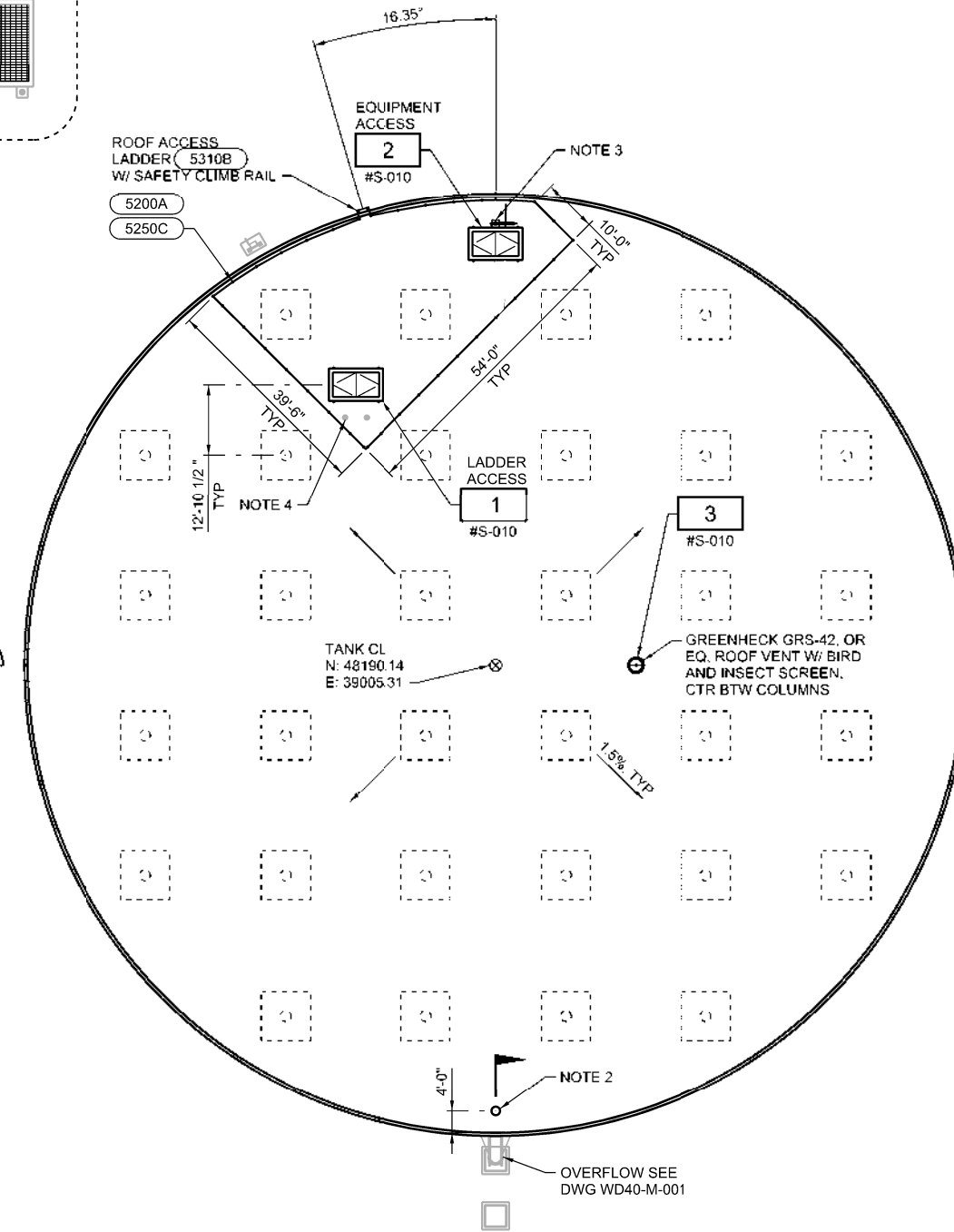
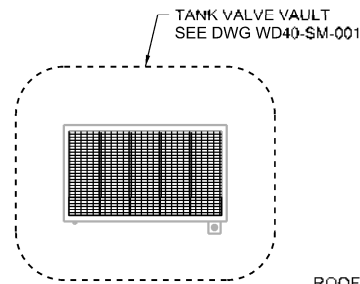
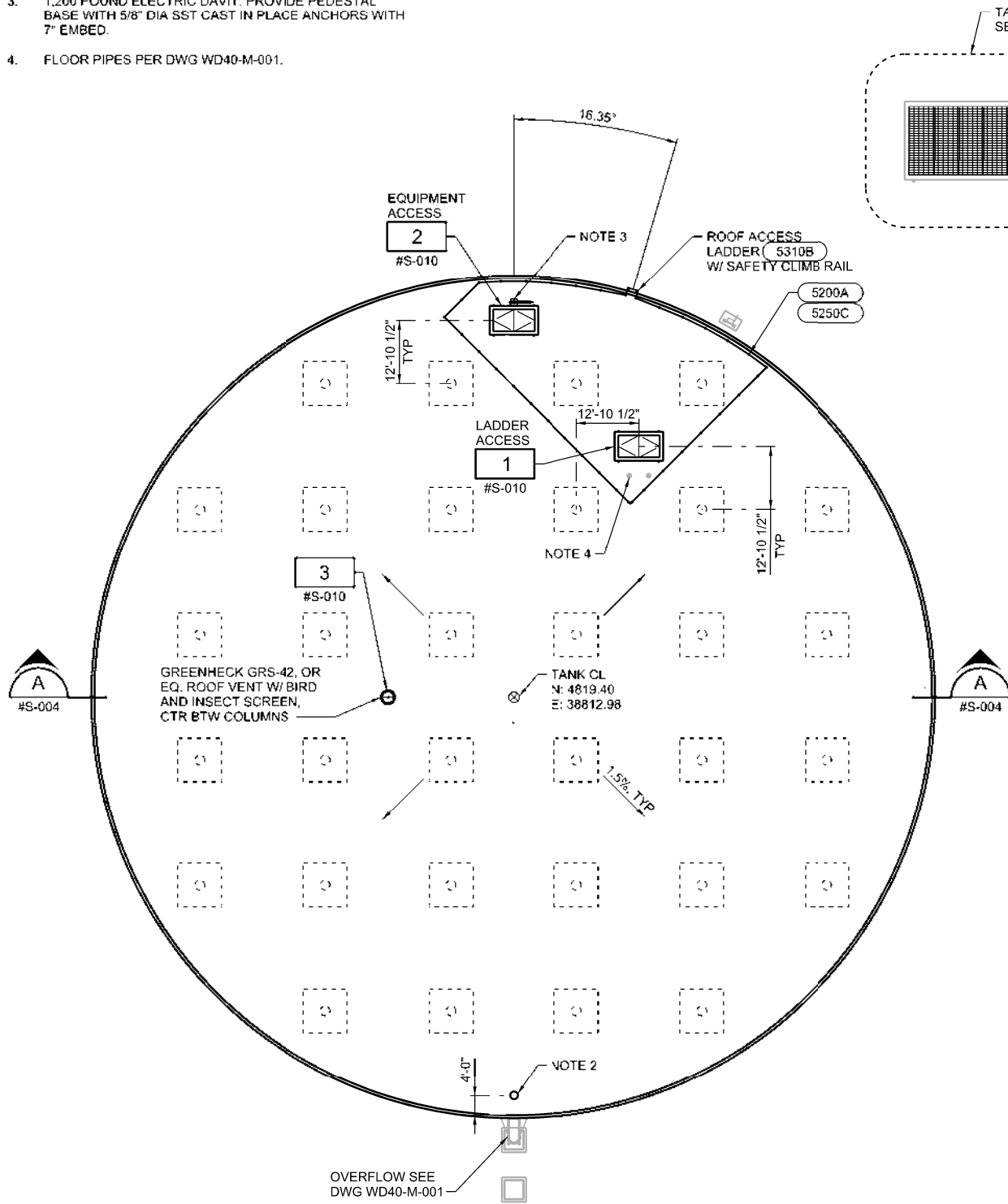
CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

STRUCTURAL / MECHANICAL
TANK VALVE VAULT
SECTION

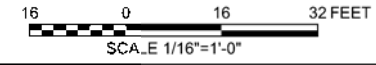
DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD40-SM-003
SHEET NUMBER	101

NOTES:

1. REPLACE "S" IN DRAWING WITH "WD40-".
2. 18" DIA CAST IN PLACE SST PIPE SLEEVE WITH SEEP RING CENTERED IN THE SLAB AND BLIND FLANGE AT THE ROOF SURFACE.
3. 1,200 POUND ELECTRIC DAVIT. PROVIDE PEDESTAL BASE WITH 5/8" DIA SST CAST IN PLACE ANCHORS WITH 7" EMBED.
4. FLOOR PIPES PER DWG WD40-M-001.



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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL WATER STORAGE TANKS PLANS			
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD40-S-001 SHEET NUMBER 102			

1 2 3 4 5 6

- NOTES:
1. REPLACE "S" IN DRAWING WITH "WD40-S".
 2. THE TANK FLOOR IS SHOWN TO BE CONSTRUCTED WITHOUT CONSTRUCTION JOINTS. SHOULD THE CONTRACTOR REQUIRE A CONSTRUCTION JOINT TO FACILITATE THE SCHEDULE PROVIDE A CONSTRUCTION JOINT PER **1** WD40-S-009

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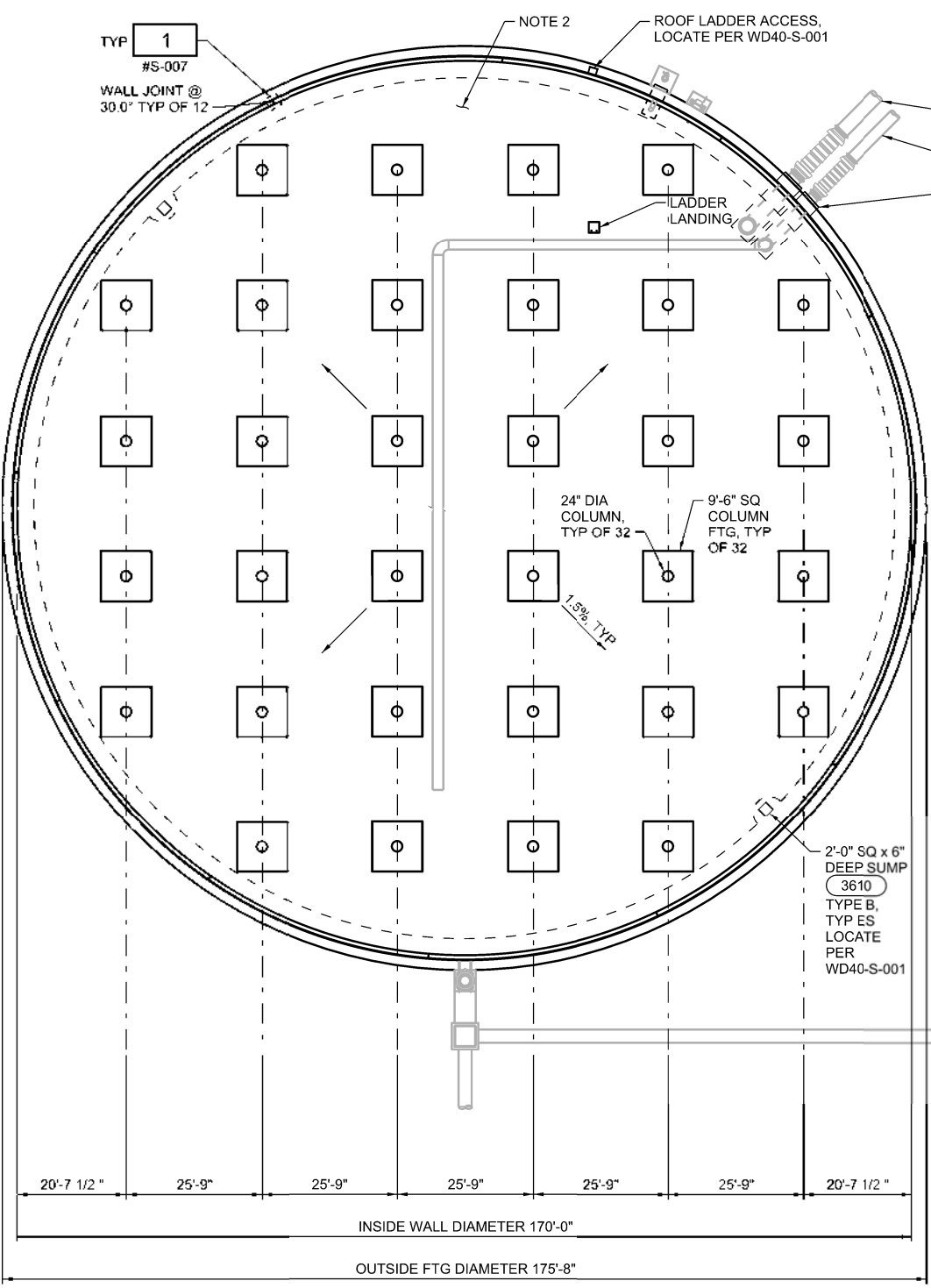


CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

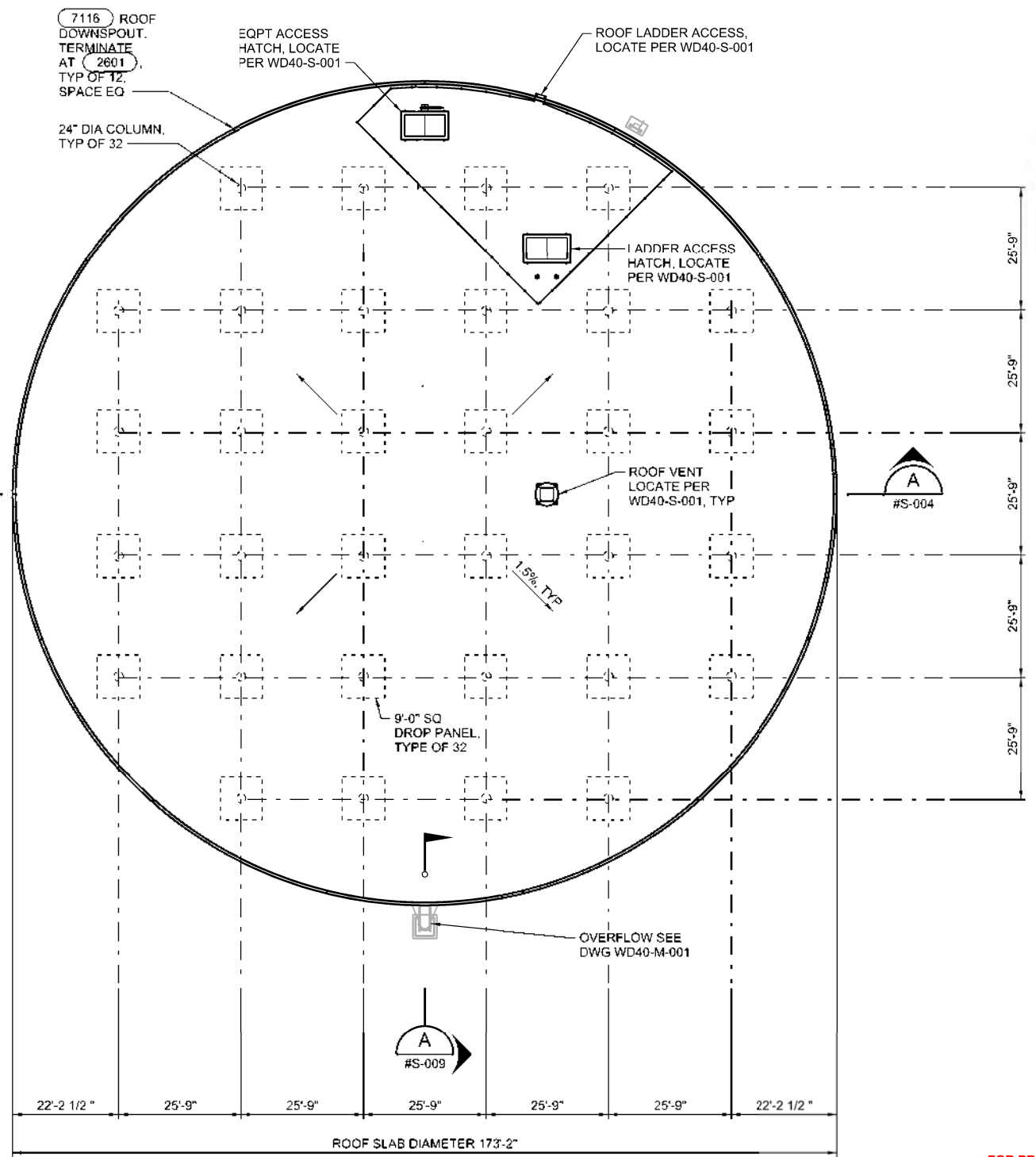
STRUCTURAL
FOUNDATION AND ROOF
PLANS

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD40-S-002
SHEET NUMBER	103

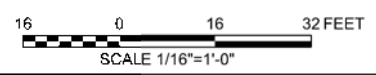
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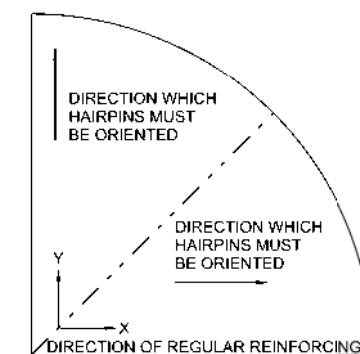
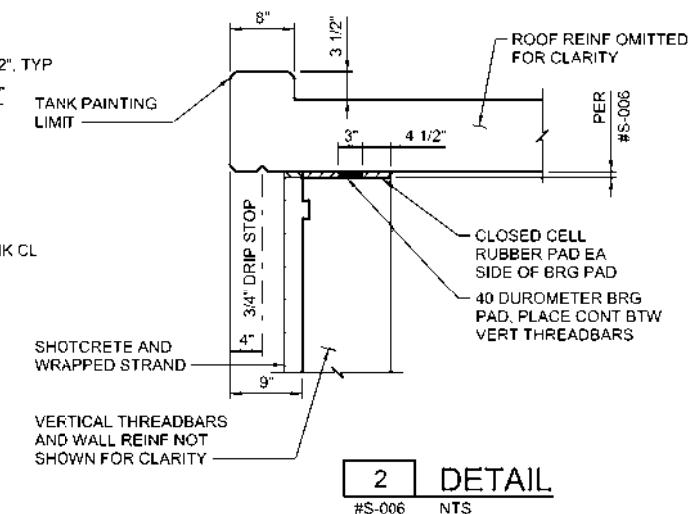
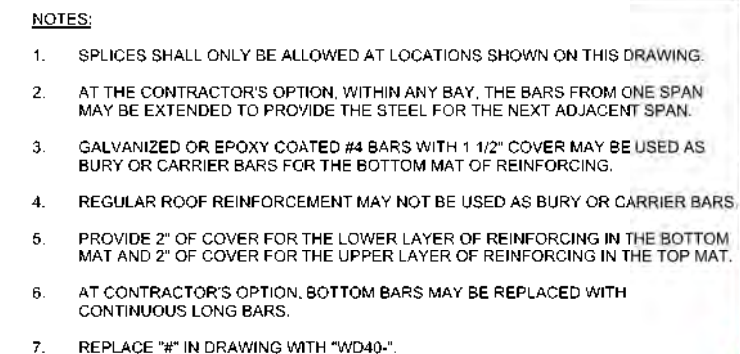


TANK NO 1 & 2 FOUNDATION PLAN
1/16" = 1'-0"



TANK NO 1 & 2 ROOF PLAN
1/16" = 1'-0"

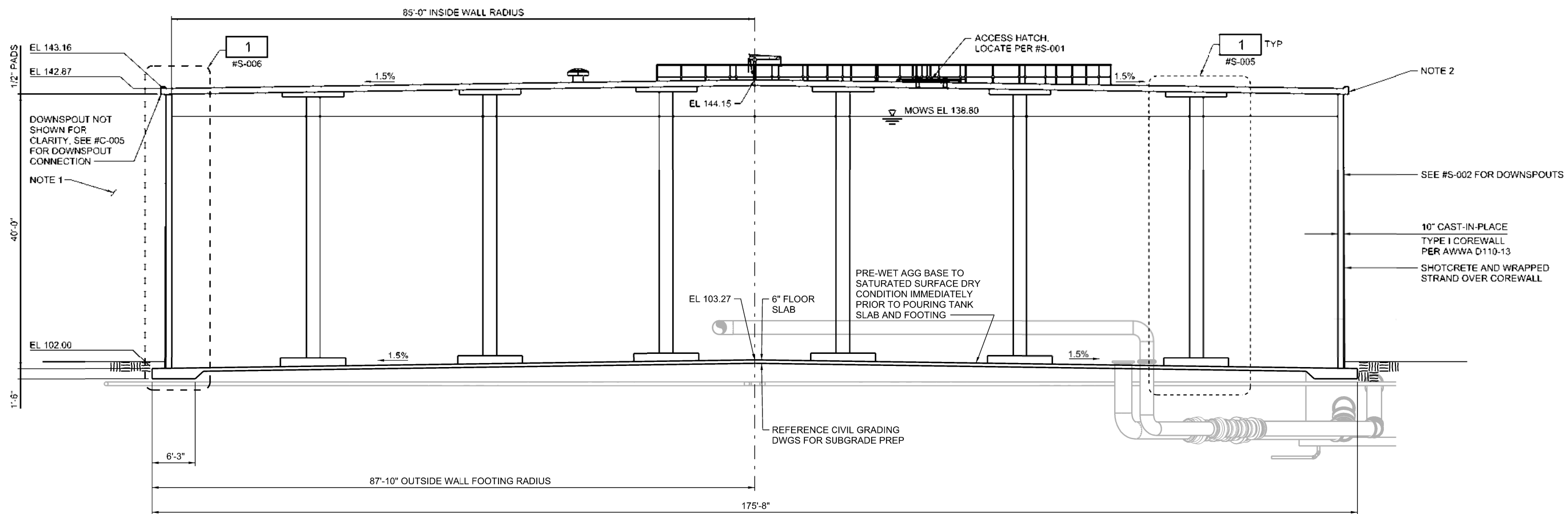




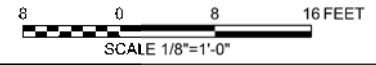
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- NOTES:
- 10'-0" MIN CLEARANCE FOR PRESTRESSING ECPT.
 - EXTERIOR TANK WALLS SHALL BE PAINTED UNIFORMLY FROM ONE FOOT BELOW FINISH GRADE TO THE TOP OF THE ROOF CURB.
 - REPLACE "W" IN DRAWING WITH "WD40".



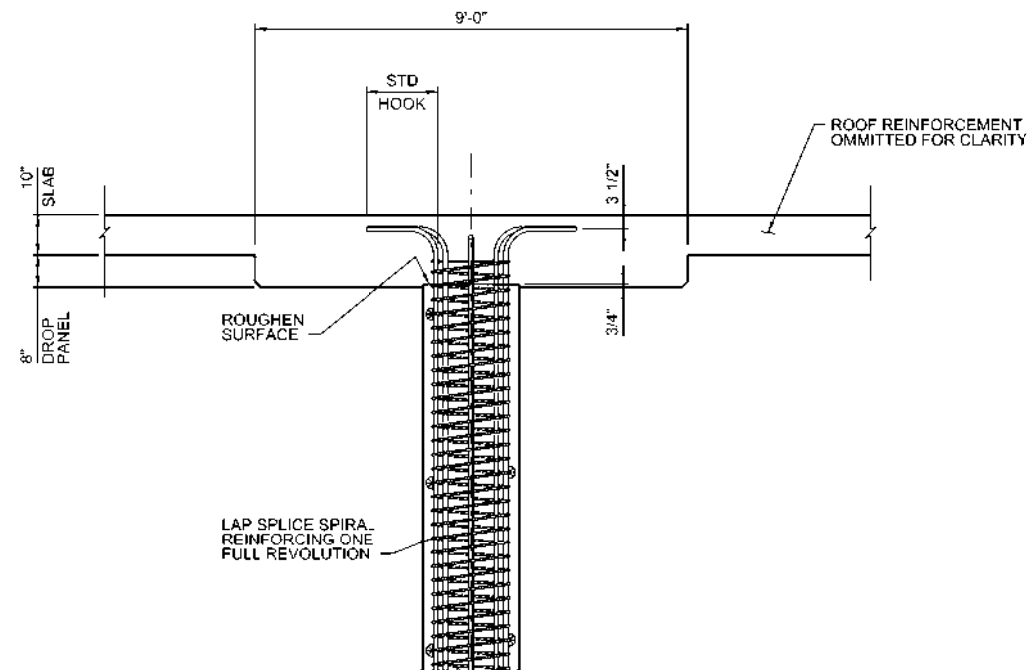
A SECTION
#S-001
#S-002
1/8" = 1'-0"



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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL TANK SECTION			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD40-S-004			
SHEET NUMBER 105			



8 - #8 VERTICAL BARS
#4 SPIRAL REINFORCING AT 3" PITCH
24" DIA COLUMN

REBAR SPACER, USE 6 SPACERS AT 60" HORIZONTALLY. START AT TOP AND BOTTOM. PLACE HORIZONTAL ROWS AT 36" MAX VERTICAL SPACING

LAP SPlice STEEL FROM FOOTING 48" TO COLUMN VERTICAL STEEL

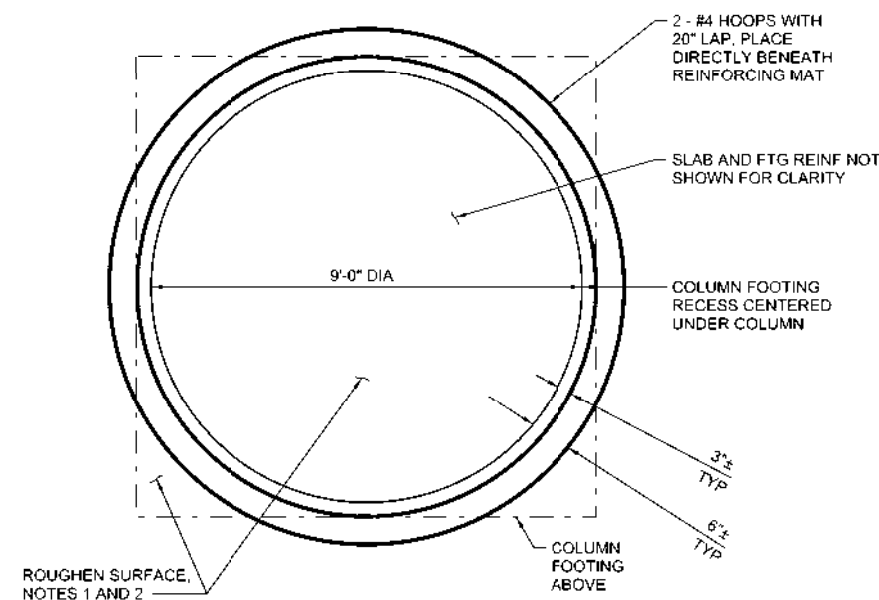
#5 @ 8" EW

2" DEEP CIRCULAR RECESS. ROUGHEN SURFACE

TYP SLAB REINFORCING

(19) ADDL #4x11'-0" ALT FOR 3" SPACING. EW, CTR UNDER COLUMN

1 DETAIL
#S-004 1/2" = 1'-0"



2 DETAIL
1/2" = 1'-0"

NOTES:

1. CONCRETE CONSTRUCTION JOINTS SHALL BE ADEQUATELY ROUGHENED TO EXPOSED AGGREGATE AND CLEANED BY SANDBLASTING, OR APPROVED EQUAL, PRIOR TO POURING THE COLUMN FOOTING.
2. REPLACE "X" IN DRAWING WITH "WD40-".

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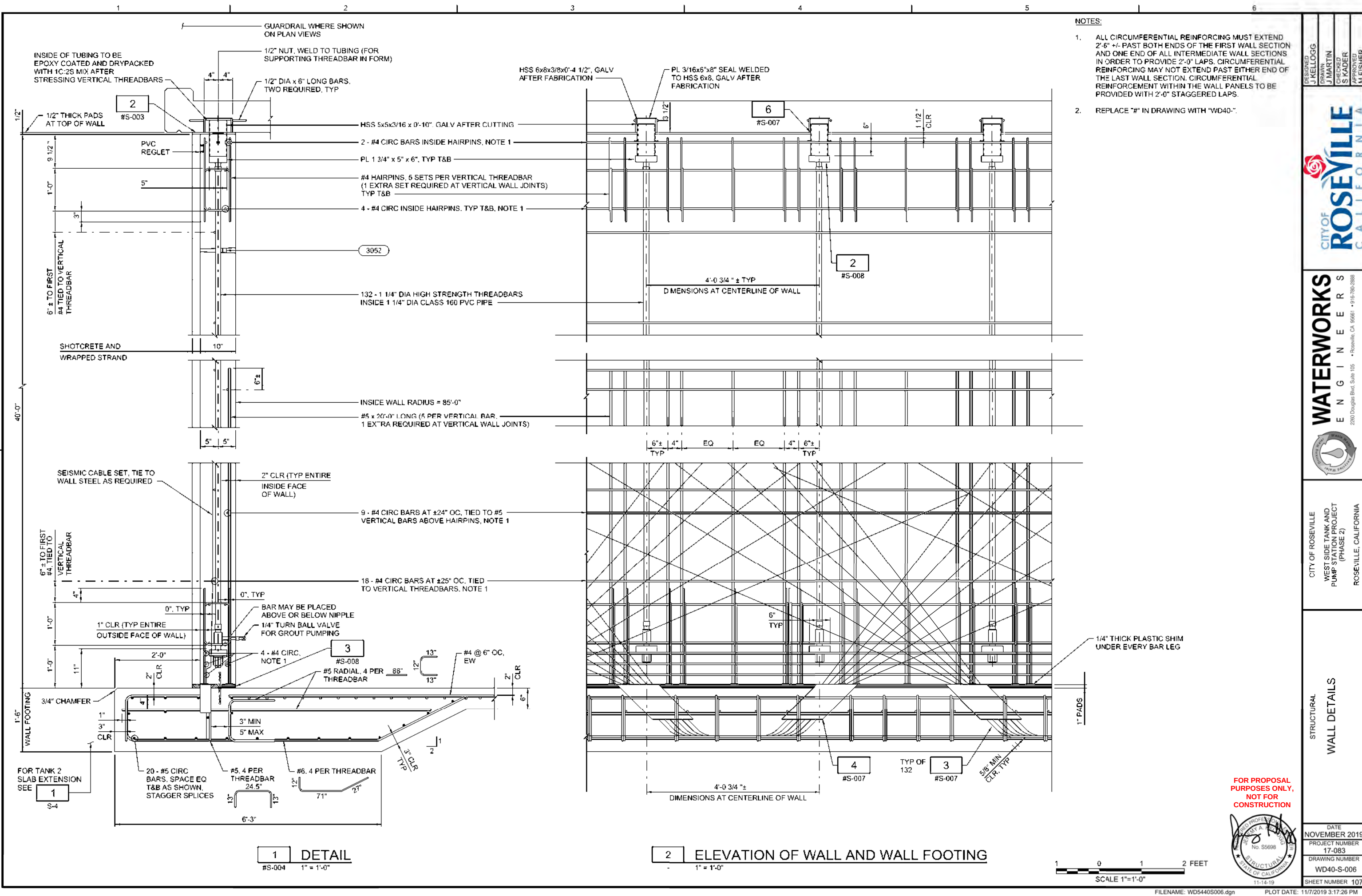


2 0 2 4 FEET
SCALE 1/2"=1'-0"

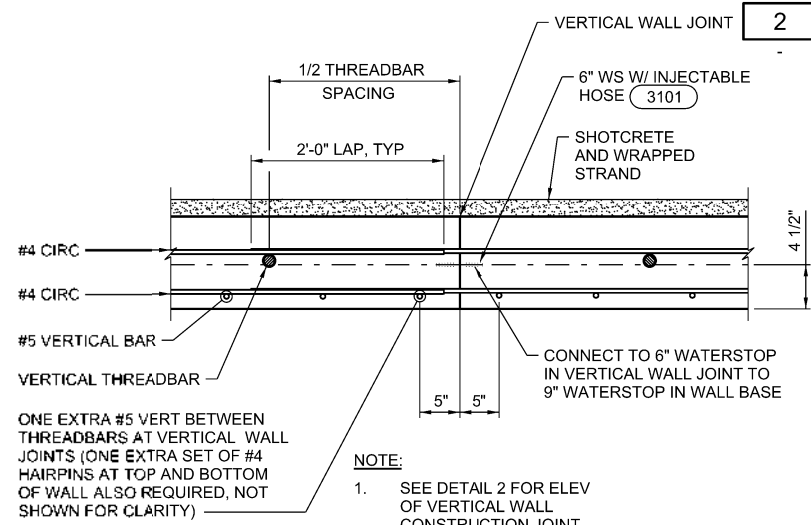
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PLOT DATE: 11/7/2019 3:16:33 PM

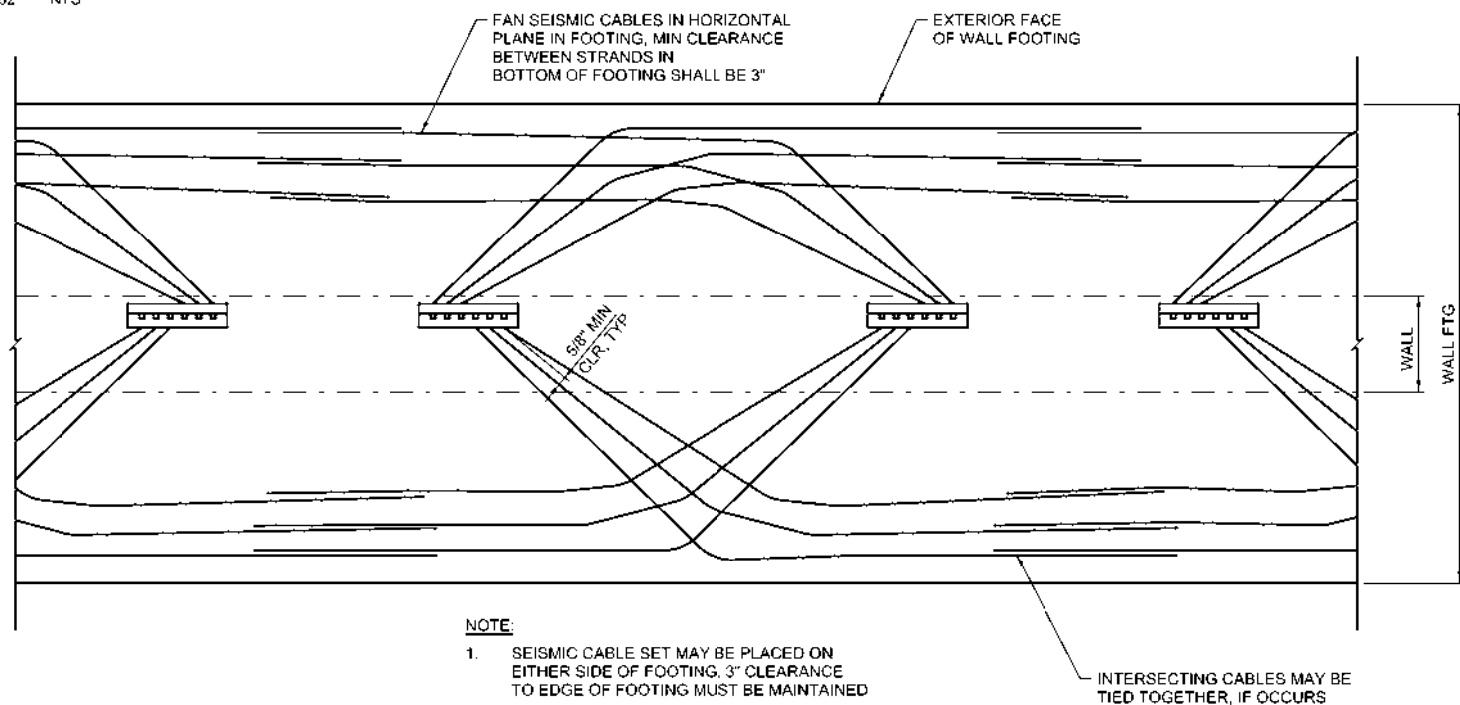
DESIGNED J. KELLOGG	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 Roseville, CA 95661 • 916-780-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL COLUMN AND FOOTING DETAIL			
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD40-S-005 SHEET NUMBER 106			



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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL WALL DETAILS			
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD40-S-006 SHEET NUMBER 107			

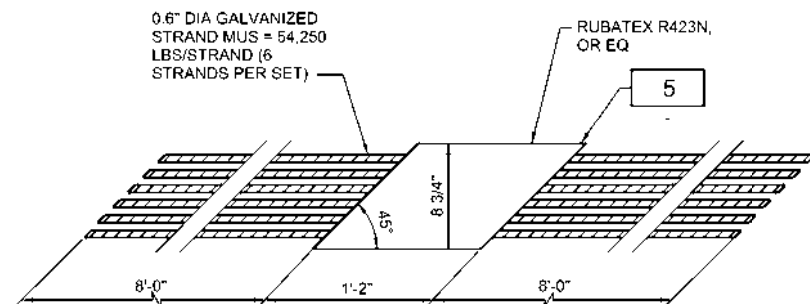


1 DETAIL
#S-002 NTS

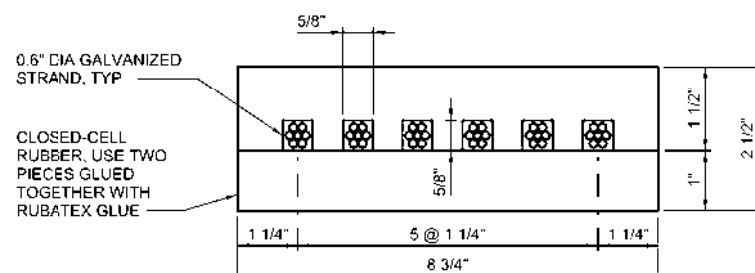


- NOTE:**
1. SEISMIC CABLE SET MAY BE PLACED ON EITHER SIDE OF FOOTING, 3" CLEARANCE TO EDGE OF FOOTING MUST BE MAINTAINED

3 DETAIL
#S-006 NTS

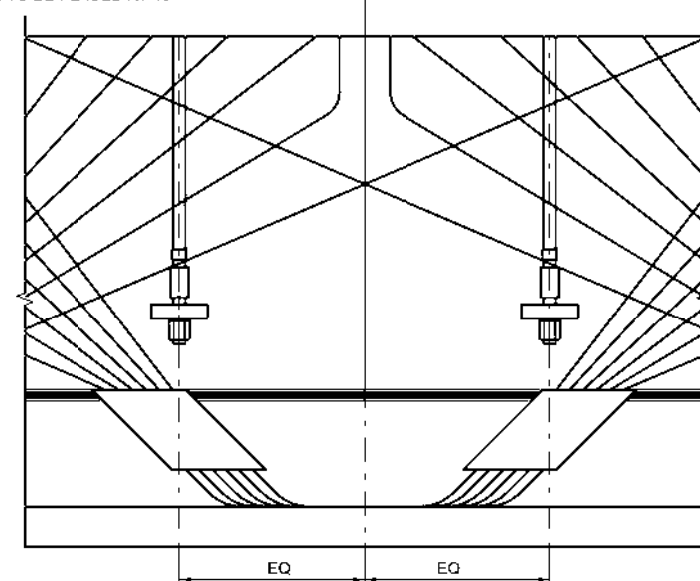


4 DETAIL
#S-006 NTS



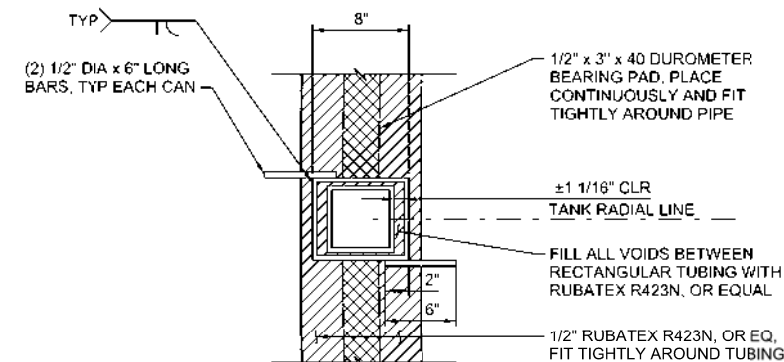
5 DETAIL
NTS

VERTICAL WALL JOINT, AT THE CONTRACTOR'S OPTION SOME OR ALL OF THE SEISMIC CABLES AT THE WALL JOINT MAY BE BENT BACK SO THEY DO NOT INTERFERE WITH THE WALL JOINT. IF CABLES ARE TO BE BENT BACK, BOTTOM 18" (MIN) OF CABLE TO BE PLACED AT 45°



- NOTE:**
1. WALL AND FOOTING REINFORCING OMITTED FOR CLARITY, WALL JOINTS EVENLY SPACED.

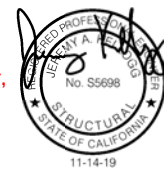
2 DETAIL
NTS



- WALL TO ROOF CONNECTION NOTES:**
1. GLUE ALL PADS TO TOP OF WALL WITH BONDING AGENT.
 2. FILL ALL VOIDS BETWEEN WALL, ROOF PADS AND TUBING WITH A SOFT MASTIC.
 3. VERTICAL THREADBARS NUTS, AND BEARING PLATES OMITTED FOR CLARITY, VERIFY ALIGNMENT AND CLEARANCES DURING WALL POUR.

6 DETAIL
#S-006 NTS

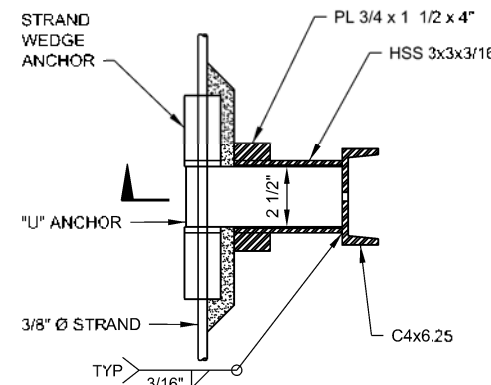
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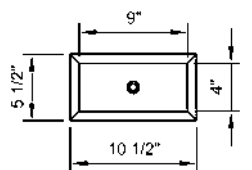
DESIGNED J. KELLOGG	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL WALL DETAILS			
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD40-S-007 SHEET NUMBER 108			

CIRCUMFERENTIAL PRESTRESSING NOTES

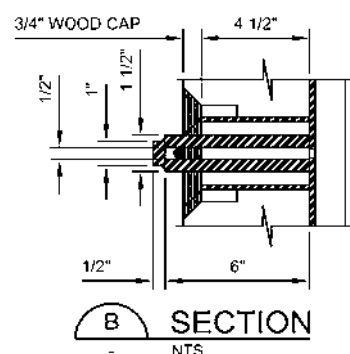
- 1) THE MAXIMUM STRESS TOLERANCE IN ANY STRAND AT ANY POINT AT ANY ELEVATION ON THE TANK WALL AT ANY TIME DURING THE WRAPPING OPERATION SHALL NOT EXCEED ± 320 POUNDS FROM THE AVERAGE FORCE SETTING OF $\pm 4,950$ POUNDS.
- 2) THE CONTRACTOR SHALL PROVIDE A CONTINUOUSLY ELECTRONICALLY RECORDED FORCE APPLICATION GRAPH FOR THE FULL LENGTH OF ALL WRAPPED STRAND AS PERMANENT DOCUMENTED EVIDENCE THAT THE FORCE APPLICATION REQUIREMENTS HAVE BEEN MET. ALL SUCH FORCE READINGS MUST BE BASED ON CONTINUOUS SENSING OF THE STRAND BETWEEN THE TENSIONING DRUM AND THE WALL AS THE STRAND IS BEING LAID ON THE WALL.
- 3) MANUAL, INDIVIDUAL, OR INTERMITTENT FORCE READINGS TAKEN WHEN THE STRAND IS IN FULL BODILY CONTACT WITH THE WALL WILL NOT BE ACCEPTED.
- 4) FORCE READINGS BASED ON ANYTHING OTHER THAN INSTANTANEOUS MONITORING AS THE STRAND IS BEING TENSIONED WILL NOT BE ACCEPTED.
- 5) INTERNAL TENDONS PLACED CIRCUMFERENTIALLY INSIDE THE COREWALL WILL NOT BE ACCEPTED.
- 6) THE STRAND SHALL BE $3/8"$ Ø BEFORE GALVANIZING WITH A MINIMUM GALVANIZING OF 0.85 OUNCES PER SQUARE FOOT AND A MINIMUM BREAKING STRENGTH OF 21,400 POUNDS AFTER GALVANIZING.
- 7) THE STRAND SHALL BE INSTALLED AS INDICATED BY THE WALL WRAPPING REQUIREMENTS.
- 8) PRIOR TO PLACING ANY STRAND OR SHOTCRETE ON THE WALL, ALL EXTERIOR SURFACES OF THE CONCRETE COREWALL WHICH WILL RECEIVE STRANDWRAPPING SHALL BE ABRASIVELY BLASTED WITH A SELF-CONTAINED WATER-BLASTING SYSTEM TO REMOVE ALL LAITANCE, FORMOIL, OR OTHER TYPES OF COATINGS. THE SURFACE SHALL BE CUT TO A MINIMUM CSP5 SURFACE PROFILE AS ESTABLISHED BY ICRI OVER A MINIMUM OF 90% OF THE SURFACE BEING PREPARED. ONCE THE ABRASIVE BLASTING IS COMPLETE THE TANK WALL SURFACE SHALL BE PRESSURE WASHED TO REMOVE ALL DUST RESIDUE ON THE WALL SURFACE.
- 9) PROVIDE 1 1/2" MINIMUM OF SHOTCRETE COVERAGE OVER THE OUTER LAYER OF STRAND.
- 10) ALL SHOTCRETE TO BE APPLIED WITH AN AUTOMATED PROCESS KEEPING THE NOZZLE AT A CONSTANT DISTANCE AND ANGLE AS IT TRAVELS AT A UNIFORM BI-DIRECTIONAL SPEED. FINAL SHOTCRETE COVER TO HAVE A NATURAL GUN FINISH.



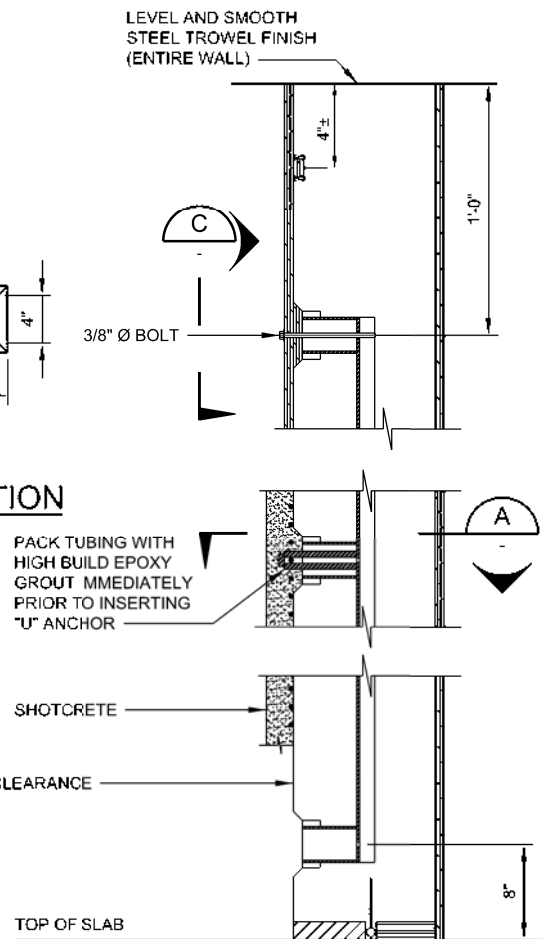
SECTION A
NTS



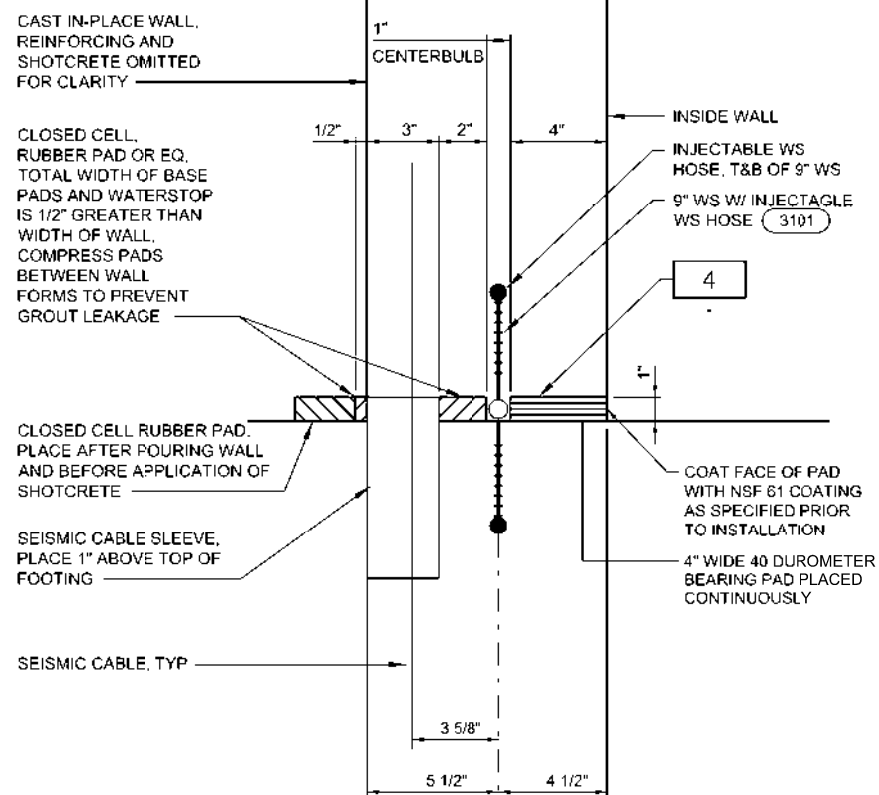
SECTION C
NTS



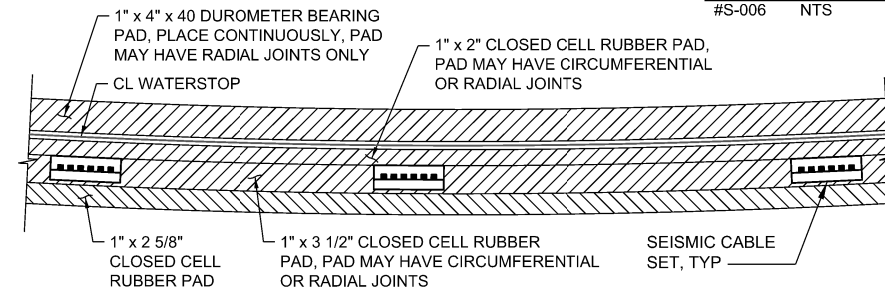
SECTION B
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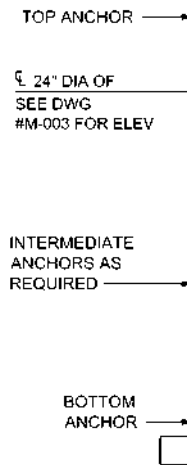
DETAIL 1
NTS



DETAIL 3
#S-006 3" = 1'-0"

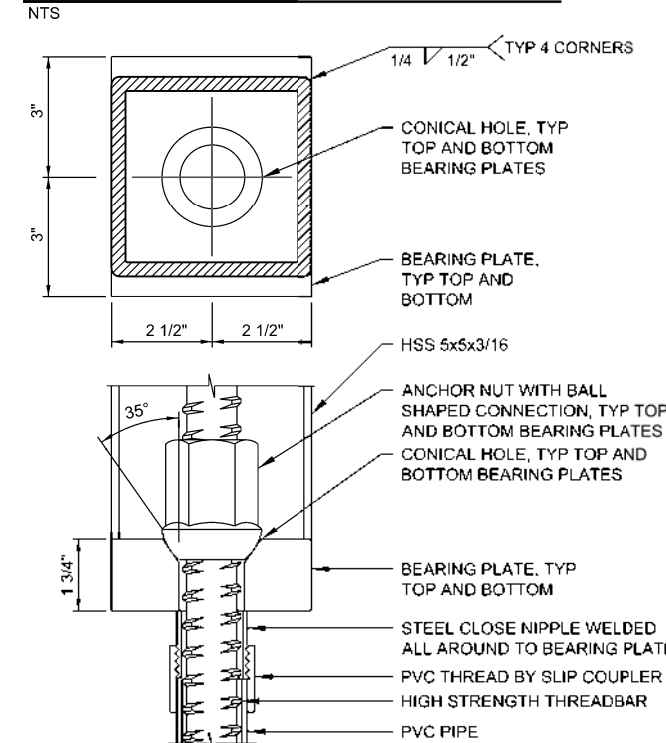


DETAIL 4
1" = 1'-0"



NOTE:
THE 2ND LAYER OF WRAPPING MAY BE PLACED FIRST AT THE CONTRACTOR'S OPTION.

WALL WRAPPING REQUIREMENTS



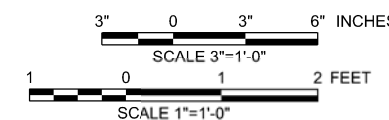
NOTE:
TOP ANCHOR SHOWN, BOTTOM ANCHOR SIMILAR

DETAIL 2
#S-006 NTS

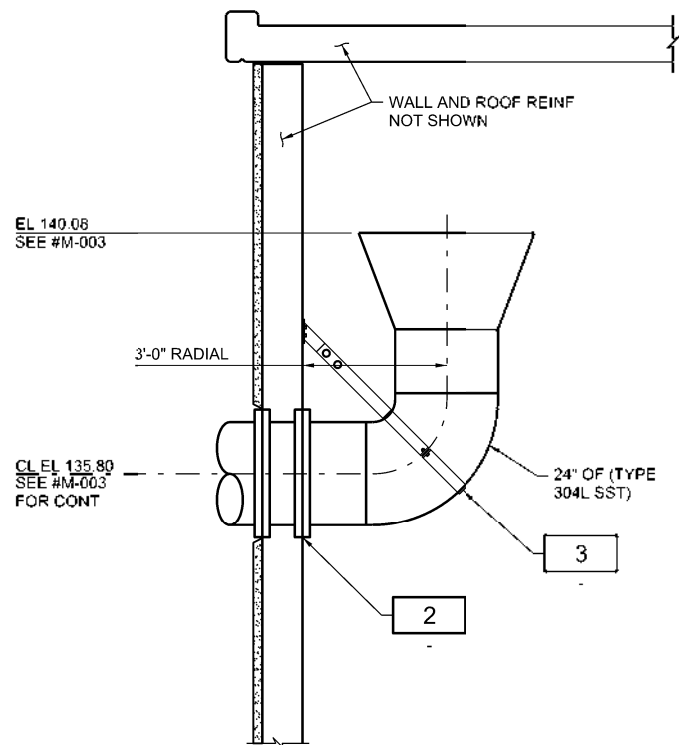
WALL BASE JOINT NOTES:

1. GLUE ALL PADS TO TOP OF WALL FOOTING WITH NSF 61 ADHESIVE.
2. FILL ALL VOIDS BETWEEN BASE PADS, SEISMIC CABLE SLEEVE AND WATERSTOP WITH JOINT SEALANT.

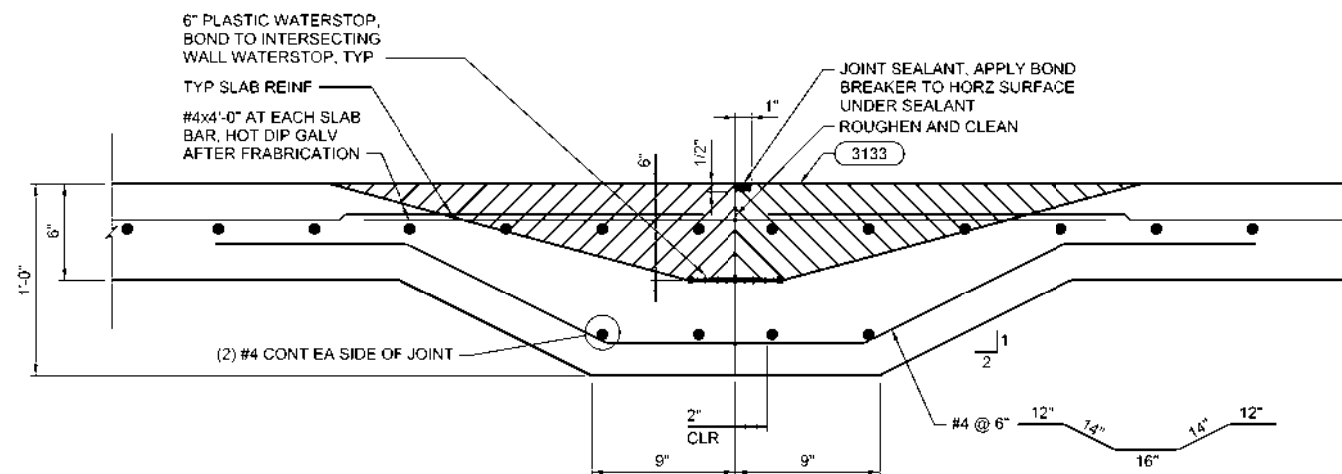
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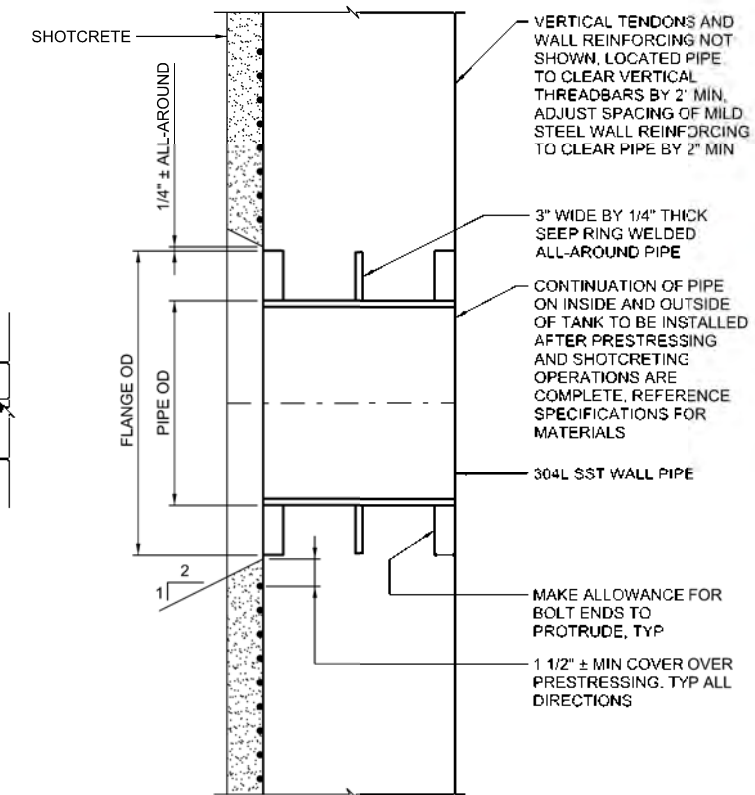
DESIGNED J. KELLOGG	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-785-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL TANK PRESTRESSING SECTIONS AND DETAILS			
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD40-S-008 SHEET NUMBER 109			



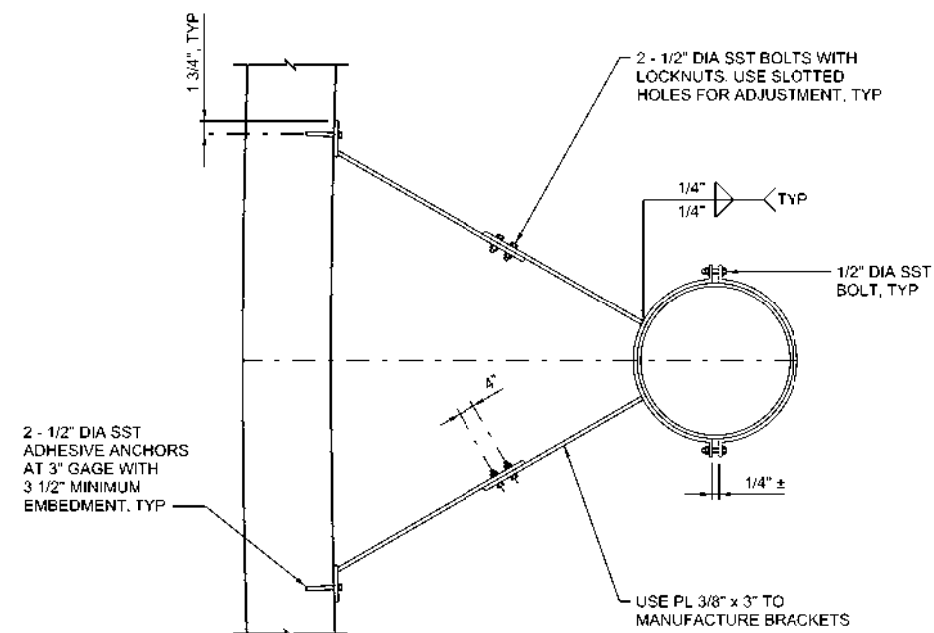
A SECTION
#S-001 NTS
#S-002



1 DETAIL
#S-002 NTS



2 DETAIL
NTS



3 DETAIL
NTS

PIPE BRACKET NOTES:

1. ALL MATERIAL FOR OVERFLOW HOOD, SHIM PLATES, PIPE BRACKET AND ANGLE SUPPORTS TO BE SST 304L.
2. USE SST 316 FOR ALL BOLTS NOT FULLY ENCASED IN CONCRETE UNLESS NOTED OTHERWISE. WHERE SST BOLTS ARE IN CONTACT WITH DISSIMILAR METALS, USE INSULATING SLEEVES AND PHENOLIC WASHERS TO ELECTRICALLY ISOLATE THE BOLTS.

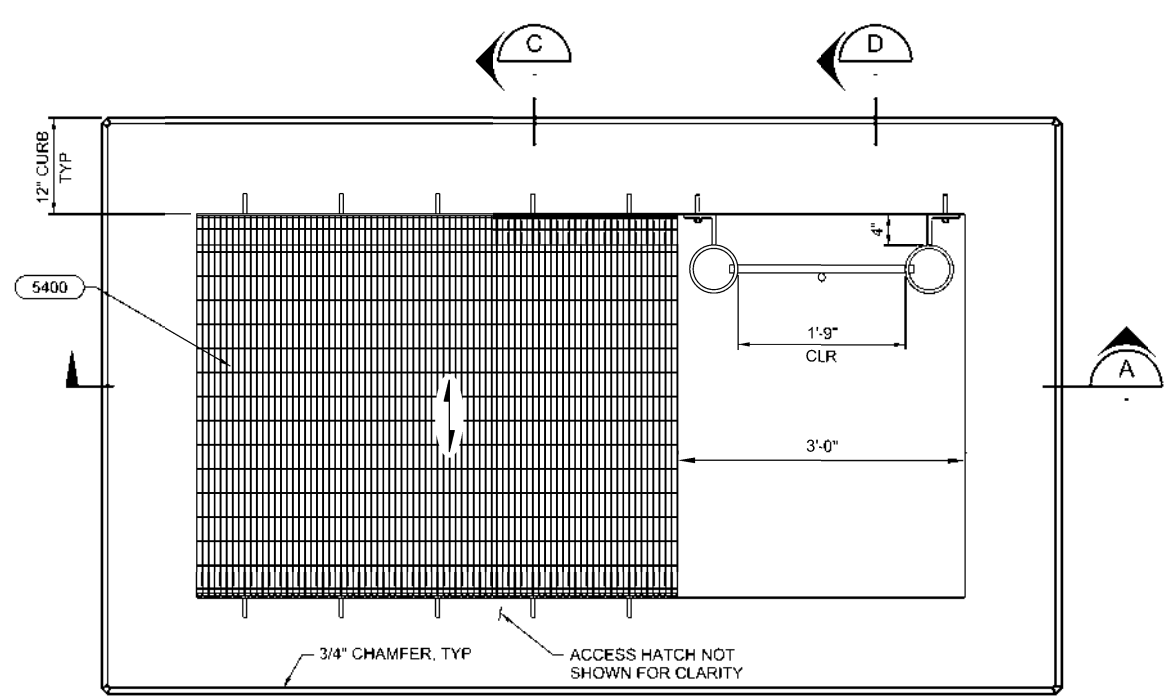
NOTES:

1. REPLACE "#" IN DRAWING WITH "WD40-".

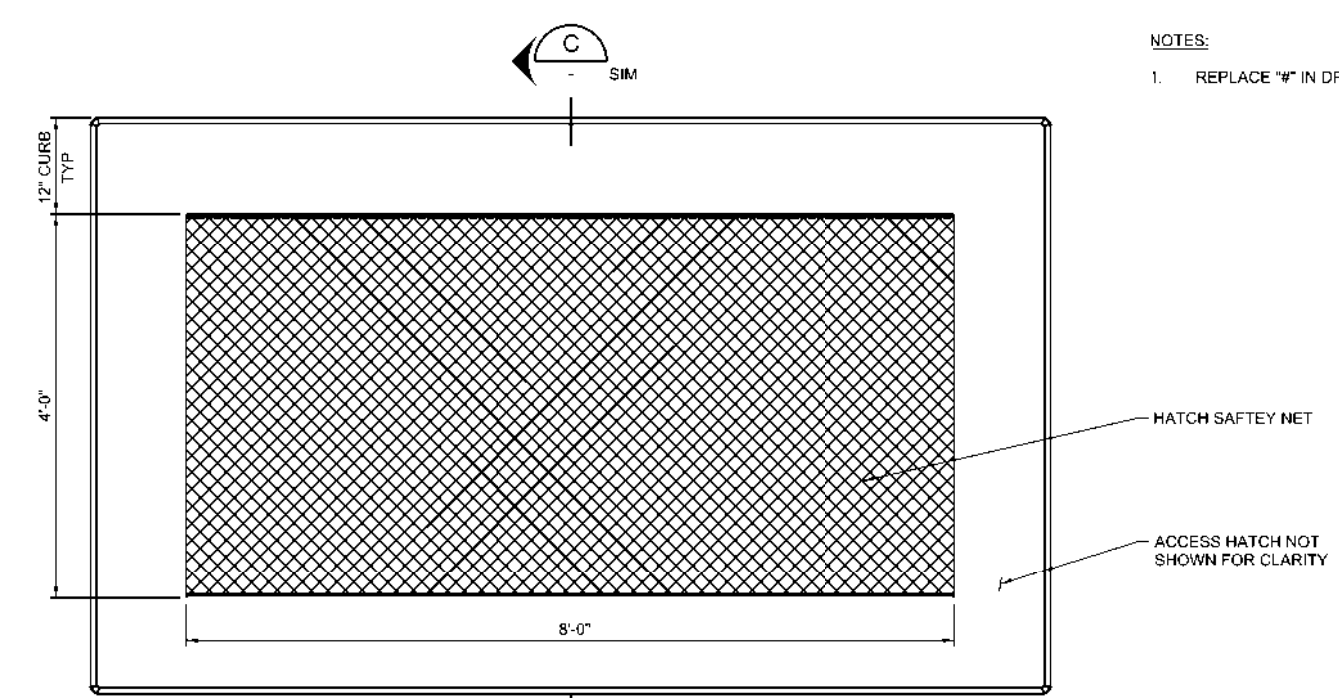
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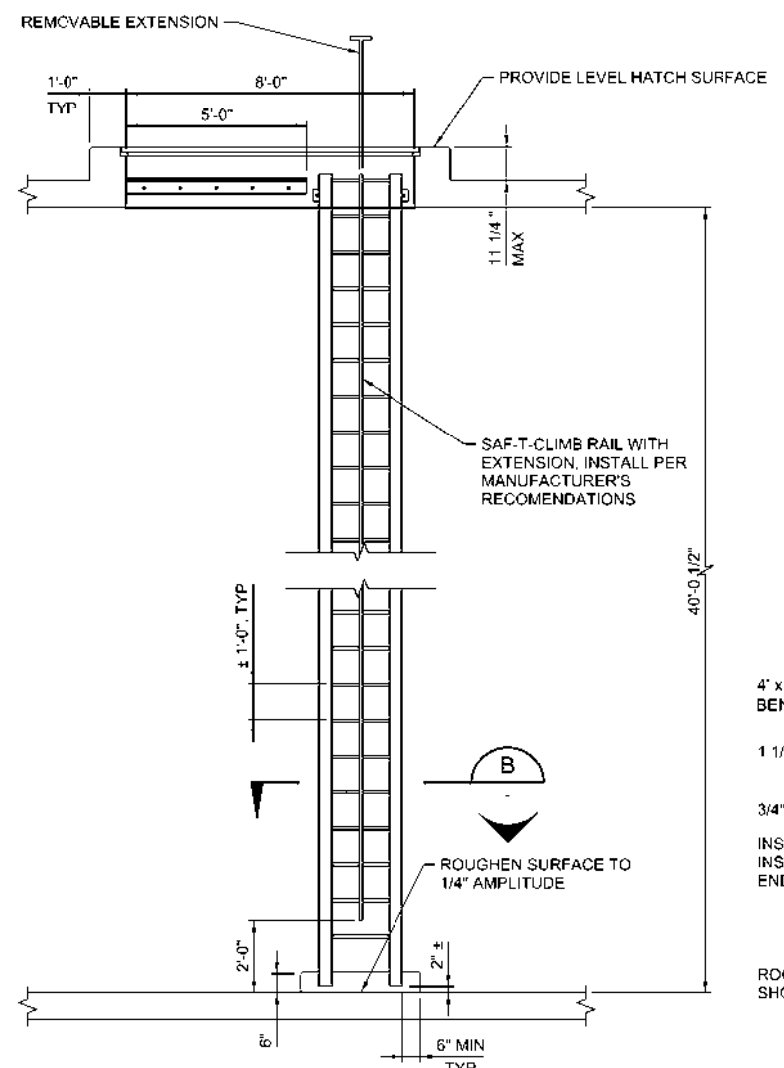
DESIGNED J. KELLOGG	DRAWN J. MARTIN	CHECKED S. KADER	APPROVED M. FISHER
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-780-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL MISCELLANEOUS TANK SECTION AND DETAILS			
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD40-S-009 SHEET NUMBER 110			



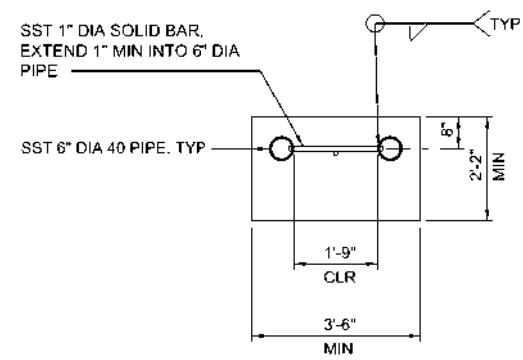
1 DETAIL
#S-001 1" = 1'-0"



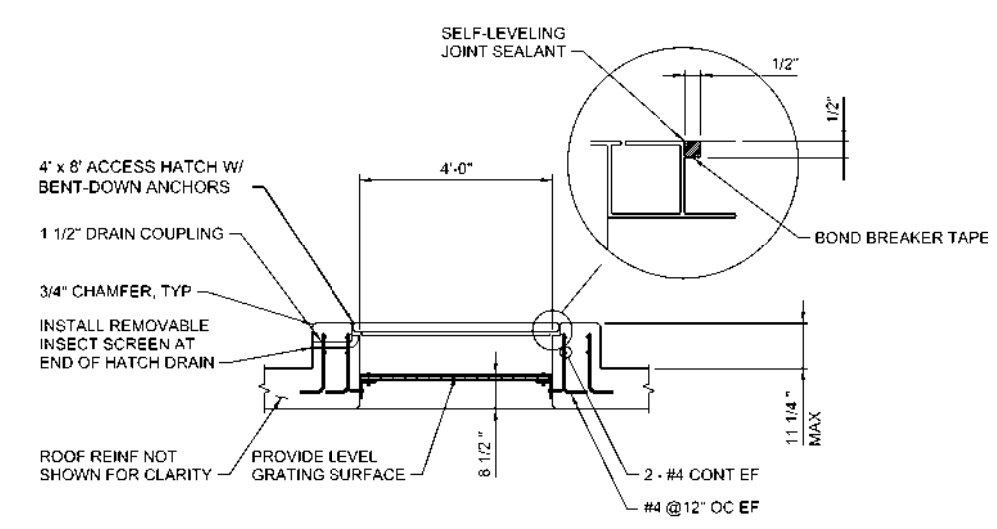
2 DETAIL
#S-001 1" = 1'-0"



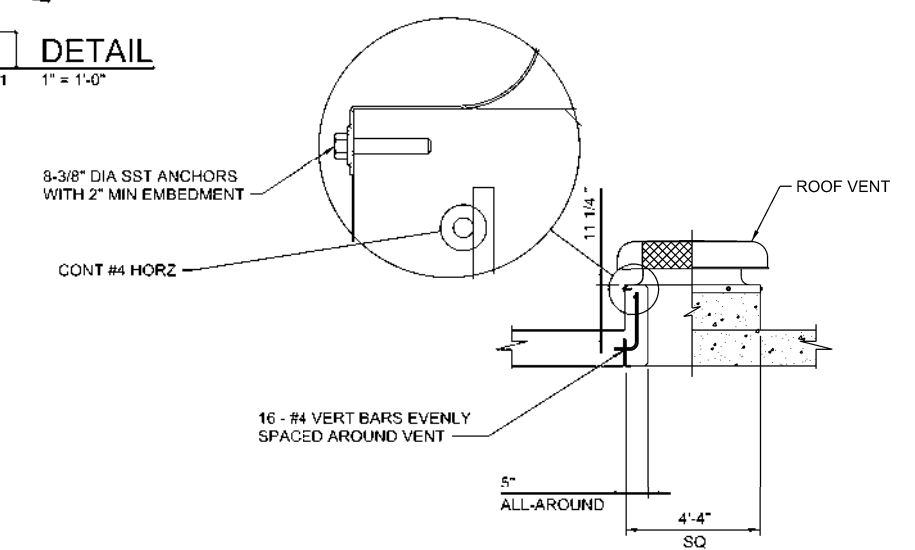
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3/8" = 1'-0"



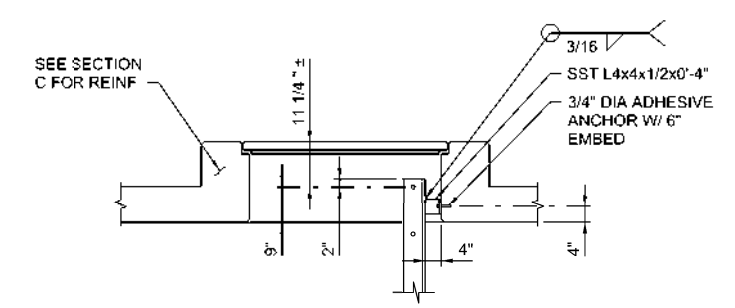
B SECTION
1/2" = 1'-0"



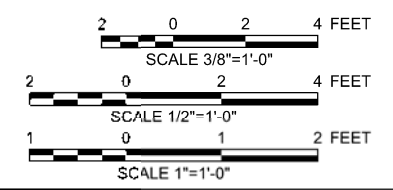
C SECTION
1/2" = 1'-0"



3 DETAIL
#S-001 NTS



D SECTION
1/2" = 1'-0"



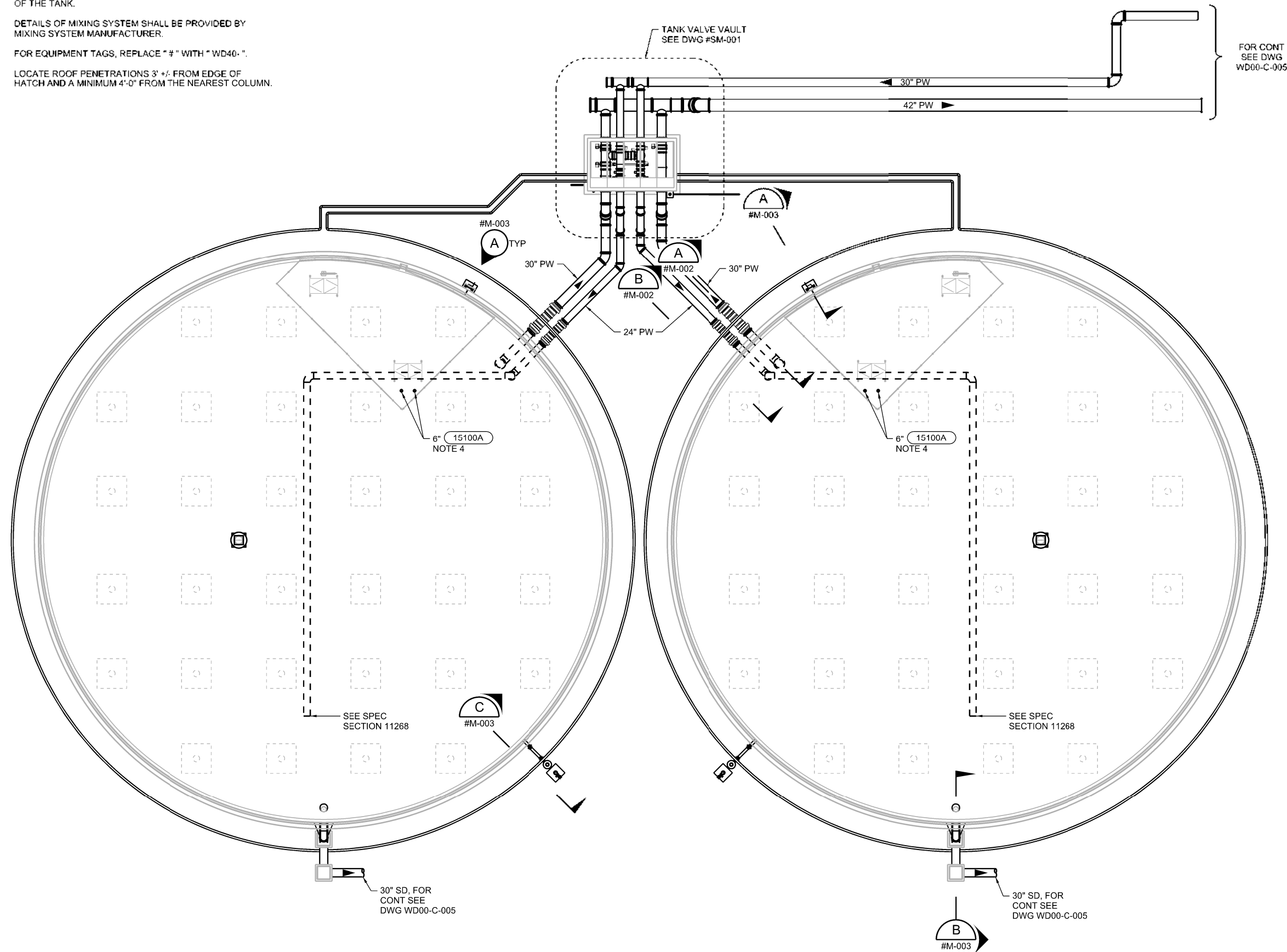
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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
STRUCTURAL MISCELLANEOUS TANK DETAILS #2			
DATE NOVEMBER 2019	PROJECT NUMBER 17-083	DRAWING NUMBER WD40-S-010	SHEET NUMBER 111

NOTES:

1. RESERVOIR HYDRODYNAMIC MIXING SYSTEM TO BE INSTALLED BETWEEN COLUMNS TOWARDS THE CENTER OF THE TANK.
2. DETAILS OF MIXING SYSTEM SHALL BE PROVIDED BY MIXING SYSTEM MANUFACTURER.
3. FOR EQUIPMENT TAGS, REPLACE "#" WITH "WD40-".
4. LOCATE ROOF PENETRATIONS 3' +/- FROM EDGE OF HATCH AND A MINIMUM 4'-0" FROM THE NEAREST COLUMN.



PLAN
1/16" = 1'-0"

16 0 16 32 FEET
SCALE 1/16"=1'-0"

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DESIGNED M FISHER	DRAWN J MARTIN	CHECKED S KADER	APPROVED M FISHER
CITY OF ROSEVILLE CALIFORNIA			
WATERWORKS ENGINEERS 2200 Douglas Blvd, Suite 105 • Roseville, CA 95661 • 916-780-2888			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
MECHANICAL WATER STORAGE TANKS PLAN			
DATE NOVEMBER 2019		PROJECT NUMBER 17-083	
DRAWING NUMBER WD40-M-001		SHEET NUMBER 112	

1

2

3

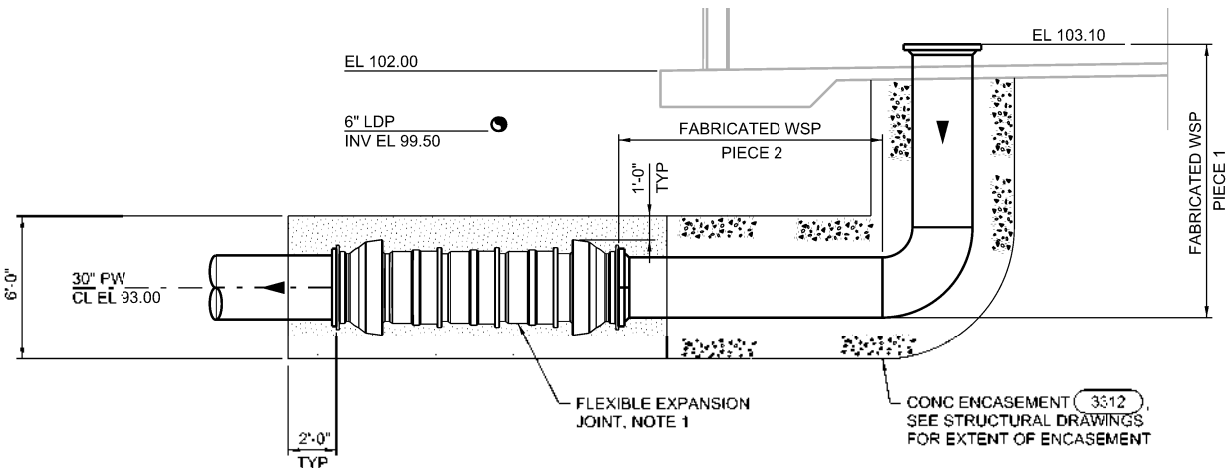
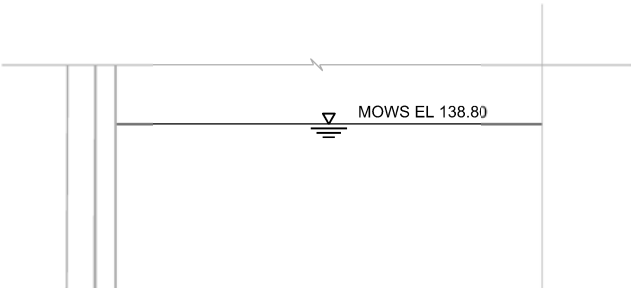
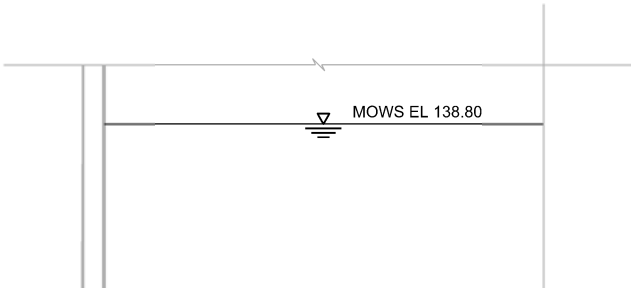
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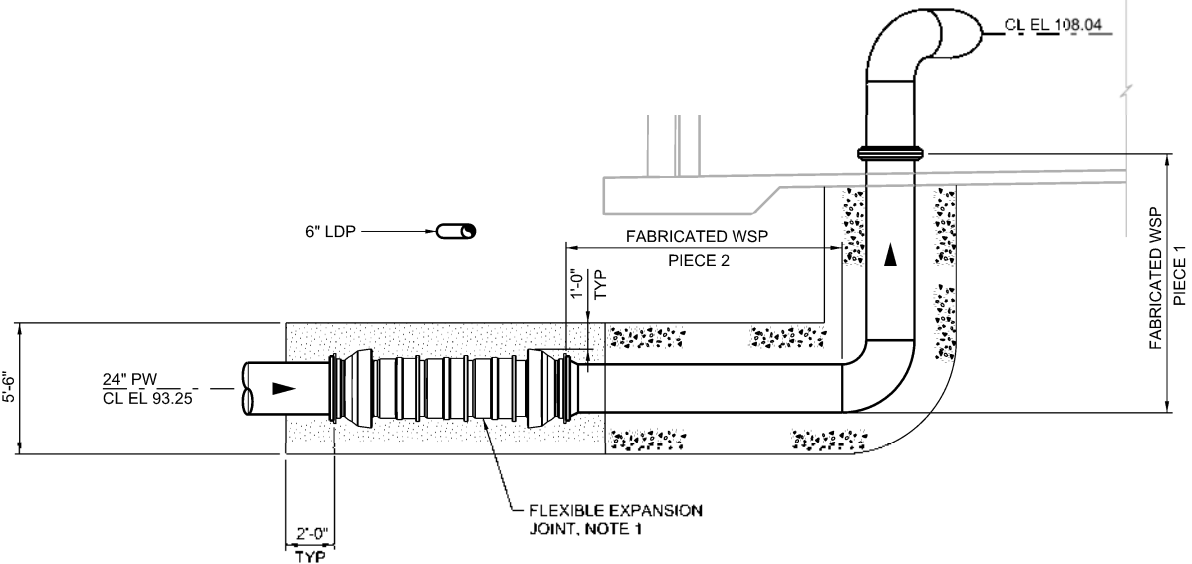
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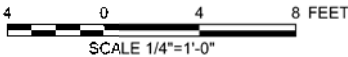
- 1. WRAP THE FLEXIBLE EXPANSION JOINT WITH POLYETHYLENE WRAP IN AT LEAST TWO LAYERS. WRAP PROVIDED BY MANUFACTURER.
- 2. THE FLANGE FACE SHALL BE MACHINED AND NOT COATED. THE REMAINDER OF THE FLANGE SHALL BE COATED. FLANGE CONNECTION MUST BE 2'-0" MIN OUTSIDE OF TANK FOOTING.



SECTION A
WD40-M-001 1/4" = 1'-0"



SECTION B
WD40-M-001 1/4" = 1'-0"



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DESIGNED	M. FISHER
DRAWN	J. MARTIN
CHECKED	S. KADER
APPROVED	M. FISHER



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Roseville, CA 95661 • 916-780-2888



CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

MECHANICAL
TANK
SECTIONS

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD40-M-002
SHEET NUMBER	113



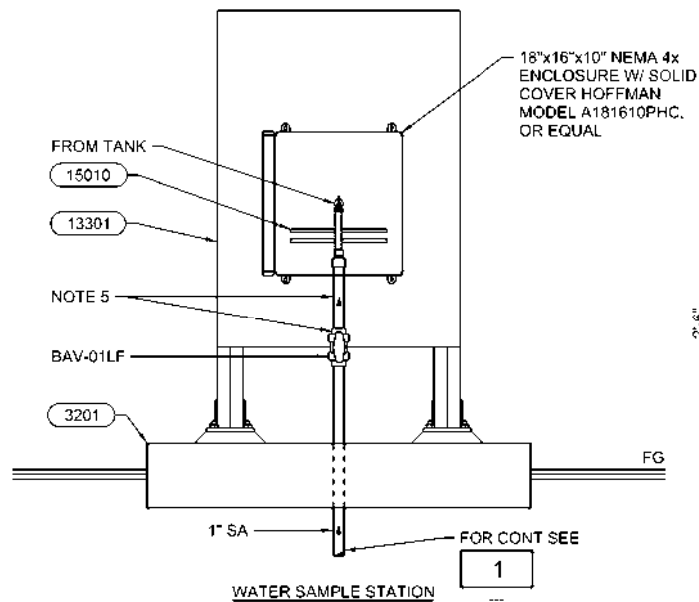
1 PHOTO
NTS



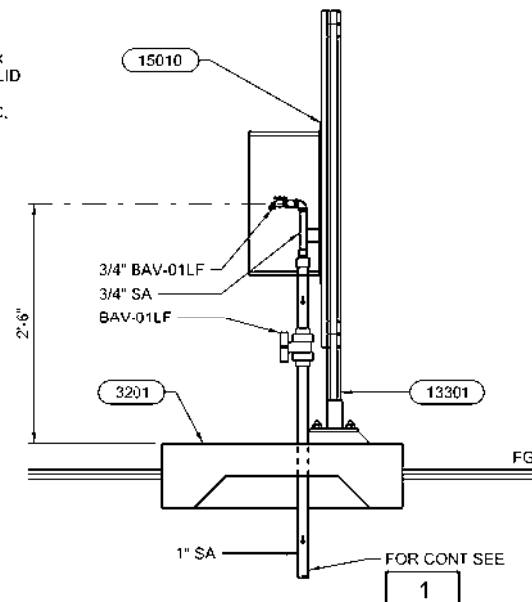
2 PHOTO
NTS

2 SCREEN TO BE VISIBLE TO OPERATOR WITHOUT TAKING VENT APART

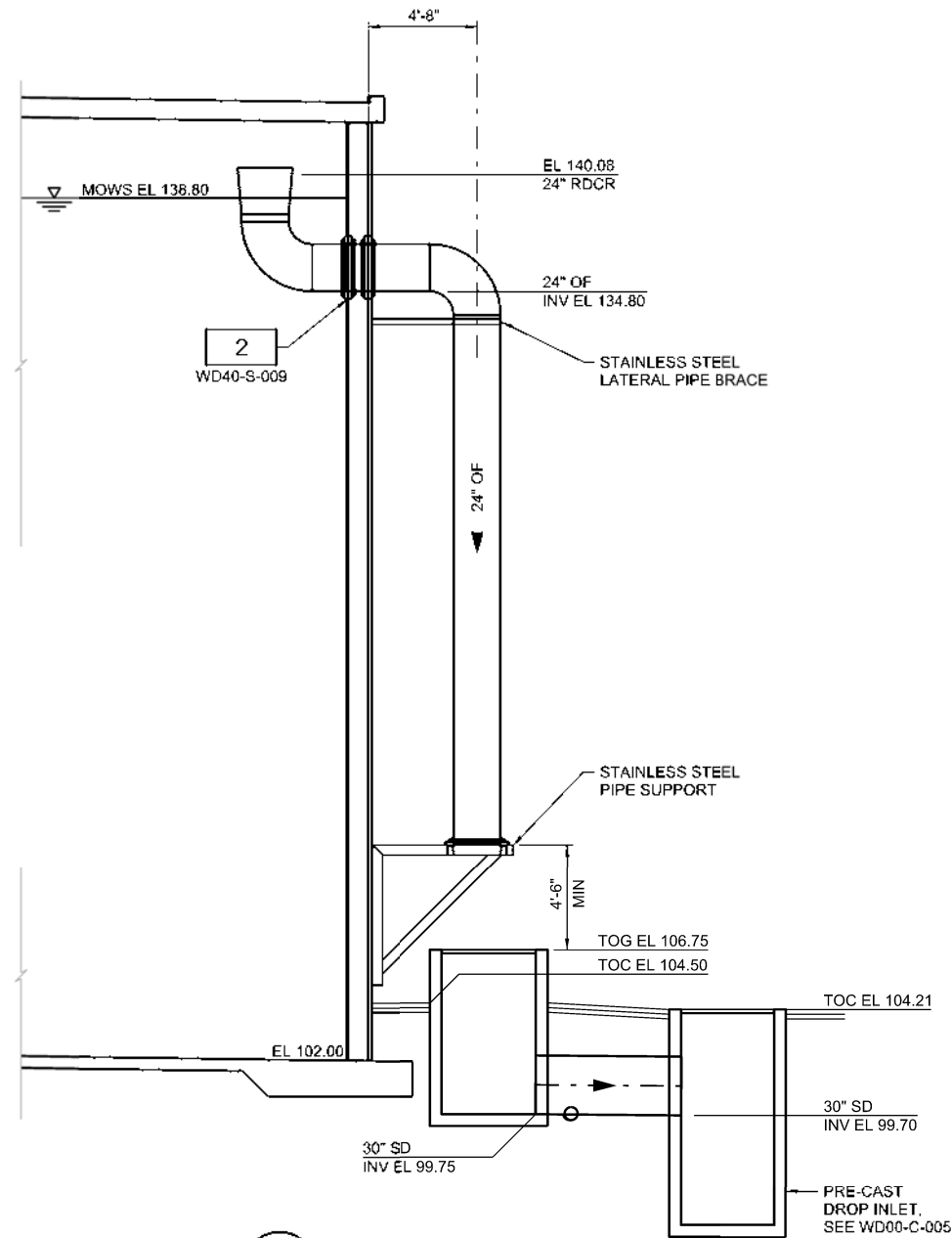
SAMPLE OF INSTALLED BIRD AND INSECT SCREEN. INSECT SCREEN SHALL BE 24 MESH 316 SS. BIRD SCREEN SHALL BE 4 MESH 316 SS.



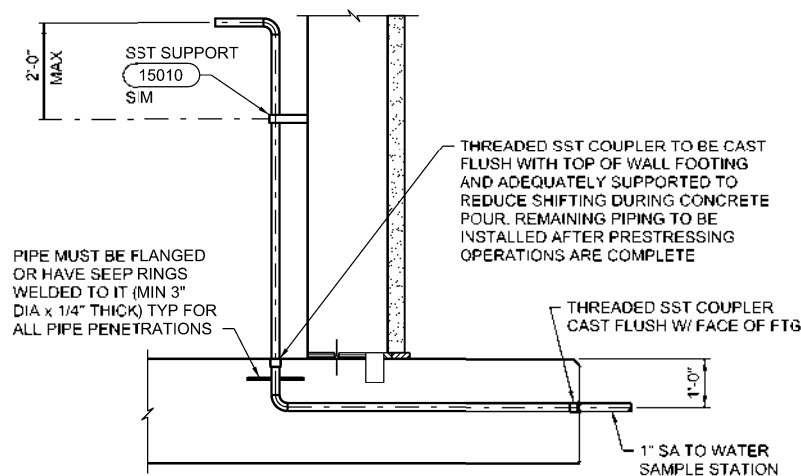
A ELEVATION
3/4" = 1'-0"



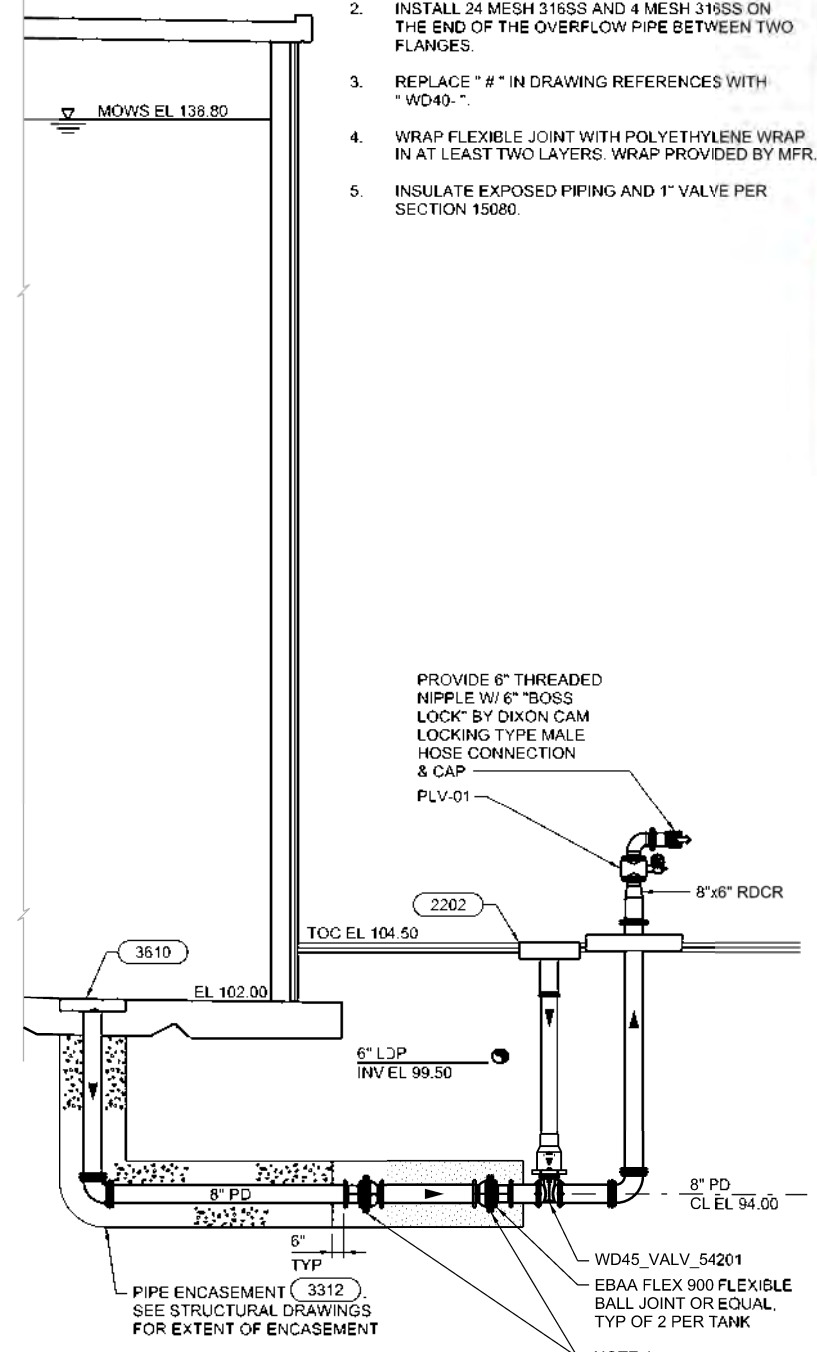
A SECTION
3/4" = 1'-0"



B SECTION
WD40-M-001 1/4" = 1'-0"



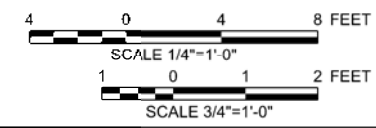
1 DETAIL
NTS



C SECTION
WD40-M-001 1/4" = 1'-0"

NOTES:

- 10'-0" MIN CLEARANCE FOR PRESTRESSING EQPT.
- INSTALL 24 MESH 316SS AND 4 MESH 316SS ON THE END OF THE OVERFLOW PIPE BETWEEN TWO FLANGES.
- REPLACE " # " IN DRAWING REFERENCES WITH " WD40- ".
- WRAP FLEXIBLE JOINT WITH POLYETHYLENE WRAP IN AT LEAST TWO LAYERS. WRAP PROVIDED BY MFR.
- INSULATE EXPOSED PIPING AND 1" VALVE PER SECTION 15080.



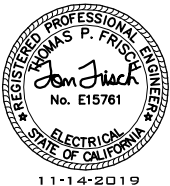
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DESIGNED M FISHER	DRAWN J MARTIN	CHECKED S KADER	APPROVED M FISHER
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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
MECHANICAL TANK SECTIONS, ELEVATION AND PHOTOS			
DATE NOVEMBER 2019		PROJECT NUMBER 17-083	
DRAWING NUMBER WD40-M-003		SHEET NUMBER 114	

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
COMPONENTS		SWITCHES – PROCESS		DEVICES – RELAY		WIRING – CONNECTIONS	
	RESISTOR		FLOW SWITCH – CLOSSES UPON INCREASING FLOW		CONTACTOR OR STARTER M1		PANEL OR EQUIPMENT WIRING
	SOLENOID COIL		FLOW SWITCH – OPENS UPON INCREASING FLOW		CONTROL RELAY CR1		FIELD WIRING
	HEATER		LEVEL SWITCH – CLOSSES UPON INCREASING LEVEL		TIME DELAY RELAY TR2 – ADJUSTABLE TIME DELAY RANGE & SETTING AS SHOWN		CONDUCTORS – NOT CONNECTED
	CAPACITOR		LEVEL SWITCH – OPENS UPON INCREASING LEVEL		TIME DELAY ON ENERGIZATION		CONDUCTORS – CONNECTED
	DIODE		PRESSURE SWITCH – CLOSSES UPON INCREASING PRESSURE (DECREASING VACUUM)		TIME DELAY ON DE-ENERGIZATION		GROUND CONNECTION
	DIODE, ZENER		PRESSURE SWITCH – OPENS UPON INCREASING PRESSURE (DECREASING VACUUM)		REFERENCED RELAY WITH N.O. CONTACT ON LINE 107 N.C. CONTACT ON LINE 121		PLUG AND RECEPTACLE
	METAL OXIDE VARISTOR		TEMPERATURE SWITCH – CLOSSES UPON INCREASING TEMPERATURE		NORMALLY OPEN, RELAY CONTACT – ACTUATED BY RELAY CR1 COIL LOCATED ON LINE 105		INCOMING LINE
	AUDIBLE ALARM		TEMPERATURE SWITCH – OPENS UPON INCREASING TEMPERATURE		NORMALLY CLOSED, RELAY CONTACT – ACTUATED BY RELAY CR1		TERMINAL BLOCKS WITH TERMINAL NUMBER AS SHOWN
	3 PHASE MOTOR ? = MOTOR HP		LIMIT SWITCH – CLOSSES AT SET LIMIT		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS ENERGIZED		TERMINAL BLOCKS WITH TERMINAL NUMBER DETERMINED BY SUBMITTAL
	3 PHASE MOTOR		LIMIT SWITCH – OPENS AT SET LIMIT		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS ENERGIZED		SHIELDED CABLE
	SINGLE PHASE MOTOR		TORQUE SWITCH – CLOSSES UPON INCREASING TORQUE		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED	PLAN – SYMBOLS	
	TRANSFORMER SIZE AND VOLTAGE AS SHOWN		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS DE-ENERGIZED		
	UTILITY POWER METER		GROUND ROD		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED		CONDUIT, EXPOSED
	UFER GROUND		CURRENT TRANSFORMER RATIO AS NOTED		CONTACT OPENS AND CLOSSES IN A TIMED REPEAT CYCLE		CONDUIT, IN SLAB OR BELOW GRADE
	GROUND ROD						CONDUIT, CONCEALED IN WALL OR CEILING
	DISCONNECT SWITCH SIZED PER FEEDER						CONDUIT STUBBED OUT & CAPPED
SWITCHES – OPERATOR		DEVICES – FRONT PANEL		DEVICES – PROTECTIVE			CONDUIT BENDS TOWARD OBSERVER
	TOGGLE OR DISCONNECT SWITCH		INDICATING LIGHT, LETTER "X" INDICATES COLOR: R=RED G=GREEN, A=AMBER, W=WHITE Y=YELLOW, B=BLUE		LOW VOLTAGE MOLDED CASE, INSULATED CASE OR POWER CIRCUIT BREAKER, RATINGS AS SHOWN IN DRAWINGS AND AS DEFINED BELOW: xA: CIRCUIT BREAKER AMERAGE xAT: AMPERAGE TRIP xAf: AMPERAGE FRAME xP: NUMBER OF POLES xT: TRIP PROTECTION MCP: MOTOR CIRCUIT PROTECTION TM: THERMAL MAGNETIC L: LONG TIME DELAY S: SHORT TIME DELAY I: INSTANTANEOUS TRIP G: GROUND FAULT A: ARC FLASH PROTECTION 100% DUTY RATED y: BREAKER FEATURES / OPTIONS – SHUNT TRIP – KIRK-KEY INTERLOCK – MANUALLY CHARGED PUSHBUTTON OPERATION – ELECTRICALLY CHARGED PUSHBUTTON OPERATION		CONDUIT BENDS AWAY FROM OBSERVER
	PUSHBUTTON – NORMALLY OPEN, MOMENTARY ACTION		INDICATING LIGHT, PUSH TO TEST		CONDUIT ENDS		FLEXIBLE CONDUIT CONNECTION FROM J-BOX TO EQUIPMENT
	PUSHBUTTON – NORMALLY CLOSED, MOMENTARY UNLESS LOS (LOCK OUT STOP) WHERE MECHANICALLY HELD		ELAPSED TIME METER		CONDUIT CHANGE IN ELEVATION		BARE COPPER GROUND WIRE
	PUSHBUTTON, MECHANICALLY CONNECTED, DOUBLE CIRCUIT – NORMALLY CLOSED AND NORMALLY OPEN				GROUND CONNECTION BOLTED TYPE		GROUND CONNECTION EXOTHERMIC WELD TYPE
	SELECTOR SWITCH, 3 POSITION – CONTACT STATUS SHOWN EXISTS I.E. AT POSITION OF HAND, OFF, OR AUTO				DISCONNECT SWITCH		FIELD MOUNTED DEVICE
	SELECTOR SWITCH, 2 POSITION – MIDDLE POSITION IS DELETED				TELEPHONE/DATA RECEPTACLE 2 PORT TA568A, 2 CAT 6 CABLES		CONDUIT REFERENCE TO SCHEDULE
	POTENTIOMETER				THERMOSTAT		EYS SEAL
					JUNCTION BOX		PULL BOX OF SIZE SHOWN (CHRISTY BOX SIZE MINIMUM)
					LIGHTING FIXTURE # – CIRCUIT BREAKER NUMBER A – FIXTURE SCHEDULE REF. a – CONTROL SWITCH REFERENCE		DUPLEX RECEPTACLE # – CIRCUIT BREAKER NUMBER WP – WEATHERPROOF (IF SHOWN) GFI – GROUND FAULT TYPE
					TOGGLE SWITCH a – FIXTURES CONTROLLED 3 – 3 WAY M = MOTION DETECTOR T = TIMER SWITCH		SPECIAL RECEPTACLE AS REQUIRED FOR EQUIPMENT TO BE CONNECTED
					THERMAL OVERLOAD CONTACT		
					FUSE		
					MEDIUM VOLTAGE CIRCUIT BREAKER		
					TRIP FUNCTIONS PER DRAWINGS AND SPECIFICATIONS		
					MULTIFUNCTION RELAY PER SPECIFICATIONS		

MISCELLANEOUS ABBREVIATIONS			
&	AND	MTR	MOTOR
@	AT	MUX	MULTIPLEXER
A	AMBER, AMPERES	MV	MERCURY VAPOR, MEDIUM VOLTAGE
AC	ALTERNATING CURRENT	N	NEUTRAL
ACK	ACKNOWLEDGE	NC	NORMALLY CLOSED
AFF	ABOVE FINISHED FLOOR	NHC	NORMALLY HELD CLOSED
AH	AMP HOUR	NHO	NORMALLY HELD OPEN
AI	ANALOG INPUT	NIC	NOT IN CONTRACT
AIC	AMP INTERRUPTING CAPACITY SYMMETRICAL	NL	NIGHT LIGHT
AM	AMP METER	NO	NORMALLY OPEN
AO	ANALOG OUTPUT	NTS	NOT TO SCALE
AWG	AMERICAN WIRE GAUGE	(N)	NEW
ATS	AUTOMATIC TRANSFER SWITCH	OC	ON CENTER
BATT	BATTERY	OI	OPERATOR INTERFACE
(B)	PROVIDED BY OWNER – INSTALLED BY CONTRACTOR	OL	OVERLOAD
BFC	BELOW FINISHED CEILING	ORP	OXIDATION REDUCTION POTENTIAL
BOD	BIOCHEMICAL OXYGEN DEMAND	P	POLE
BPF	BAND PASS FILTER	PB	PUSHBUTTON
BYP	BYPASS	PBX	PULL BOX
C	CONDUIT	PDB	POWER DISTRIBUTION BLOCK
CAP	CAPACITOR	PF	POWER FACTOR
CB	CIRCUIT BREAKER	PFR	POWER FAIL RELAY
CKT	CIRCUIT	PH	HYDROGEN ION CONCENTRATION
COAX	COAXIAL CABLE	PLC	PROGRAMMABLE LOGIC CONTROLLER
COMM	COMMUNICATION	PM	POWER MONITOR
CR	CONTROL RELAY	PNL	PANEL
CT	CURRENT TRANSFORMER	POT	POTENTIOMETER
CS	CONSTANT SPEED	PRESS	PRESSURE
CU	COPPER	PR	PAIR, TWISTED AND SHIELDED
DC	DIRECT CURRENT	PRI	PRIMARY
DET	DETAIL	PROVIDE	FURNISH, INSTALL, AND CONNECT
DI	DIGITAL INPUT	PS	PRESSURE SWITCH
DISC	DISCONNECT	PT	POTENTIAL TRANSFORMER
DO	DIGITAL OUTPUT	PTT	PUSH TO TEST
DPDT	DOUBLE POLE DOUBLE THROW	PVC	POLYVINYLCHLORIDE
DWG	DRAWING	PWR	POWER
E-DTL	ELECTRICAL DRAWING DETAIL	REF	REFERENCE
ELEV	ELEVATION	RFI	RADIO FREQUENCY INTERFERENCE
ENET	ETHERNET	RMS	ROOT MEAN SQUARE
ETM	ELAPSED TIME METER	RTD	RESISTANCE TEMPERATURE DETECTOR
ESW	ETHERNET SWITCH	RST	RESET
(E)	EXISTING	RVAT	REDUCE VOLTAGE AUTO TRANSFORMER
FCS	FIELD CONTROL STATION	RTU	REMOTE TERMINAL UNIT
FLA	FULL LOAD AMPS	(R)	REWIRE, RELOCATE, REVISE, REUSE
FLEX	FLEXIBLE LIQUID TIGHT CONDUIT	SCH	SCHEDULE
FRP	FIBERGLASS REINFORCED PLASTIC	SEC	SECONDARY, SECOND
FS	FULL SPEED	SECS	SECONDS
FVNR	FULL VOLTAGE NON-REVERSING	SEL	SELECTOR
FVR	FULL VOLTAGE REVERSING	SFA	SERVICE FACTOR AMPS
FWD	FORWARD	SPEC	SPECIFICATION
(F)	FUTURE	SS	STAINLESS STEEL
GALV	GALVANIZED	SSRC	STAINLESS STEEL RIGID CONDUIT
GFI	GROUND FAULT INTERRUPTER	SSS	SOLID STATE STARTER
GND	GROUND	STT	START
GRS	GALVANIZED RIGID STEEL CONDUIT	STP	STOP
GRS-PVC	PVC COATED GRS CONDUIT	SV	SOLENOID VALVE
HI	HIGH	SW	SWITCH
HIM	HUMAN INTERFACE MODULE	SWBD	SWITCHBOARD
HOA	HAND OFF AUTO	SYMM	SYMMETRICAL
HP	HORSE POWER	TB	TERMINAL BLOCK
HPS	HIGH PRESSURE SODIUM	TC	TIME CLOCK
HS	HAND SWITCH	TDOD	TIME DELAY ON DE-ENERGIZATION
HTR	HEATER	TDOE	TIME DELAY ON ENERGIZATION
HZ	HERTZ	TELCO	TELEPHONE COMPANY
HZD	HAZARD	TM	THERMAL MAGNETIC
I	INTERLOCK	TEMP	TEMPERATURE
I-DTL	INSTRUMENTATION DRAWING DETAIL	TR	TIME DELAY RELAY
I/O	INPUT/OUTPUT	TRIAD	TWISTED AND SHIELDED 3 CONDUCTOR
INST	INSTANTANEOUS	TS	TEMPERATURE SWITCH
ISR	INTRINSICALLY SAFE RELAY	TSPR	TWISTED AND SHIELDED PAIR
IS	INTRINSICALLY SAFE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
J	JUNCTION BOX	TYP	TYPICAL
K	KILO, PREFIX	UG	UNDERGROUND
LA	LIGHTNING ARRESTOR	ULH	ULTRA LOW HARMONIC
LC	LIGHTING CONTACTOR	UON	UNLESS OTHERWISE NOTED
LEL	LOWER EXPLOSION LIMIT	UPS	UNINTERRUPTIBLE POWER SUPPLY
LO	LOW	V	VOLTAGE
LOS	LOCK OUT STOP	VA	VOLT AMPS
LR	LATCHING RELAY	VAR	VOLT AMPS REACTIVE
LS	LIMIT SWITCH	VFD	VARIABLE FREQUENCY DRIVE
M	MOTOR CONTACTOR	VLV	VALVE
MAG	MAGNETIC FLOWMETER	VM	VOLTMETER
MAX	MAXIMUM	VMR	VOLTAGE MONITOR RELAY
MCM	THOUSAND CIRCULAR MILS	VR	VOLTAGE RELAY
MCP	MOTOR CIRCUIT PROTECTOR	W	WATTS
MCS	MOLDED CASE SWITCH	WP	WEATHER PROOF, NEMA 3R
MH	MANHOLE	WTP	WATER TREATMENT PLANT
MIN	MINIMUM, MINUTE	WWTP	WASTE WATER TREATMENT PLANT
MODEM	MODEM	XFMR	TRANSFORMER
MOV	MOTOR OPERATED VALVE	Z	IMPEDANCE
		ZS	LIMIT SWITCH

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DESIGN: T. FRISCH
DRAWN: M. YARBROUGH
CHECKED: M. FRISCH
APPROVED: M. FISHER

FRISCH ENGINEERING, INC.
13405 FOLEY BLVD., UNIT 600
FOLSOM, CA 95630
WWW.FRISCHENGINEERING.COM
FILE: 101 WD00-GE001.DWG
DATE: NOV 08, 2019 TIME: 10:45:09AM

CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

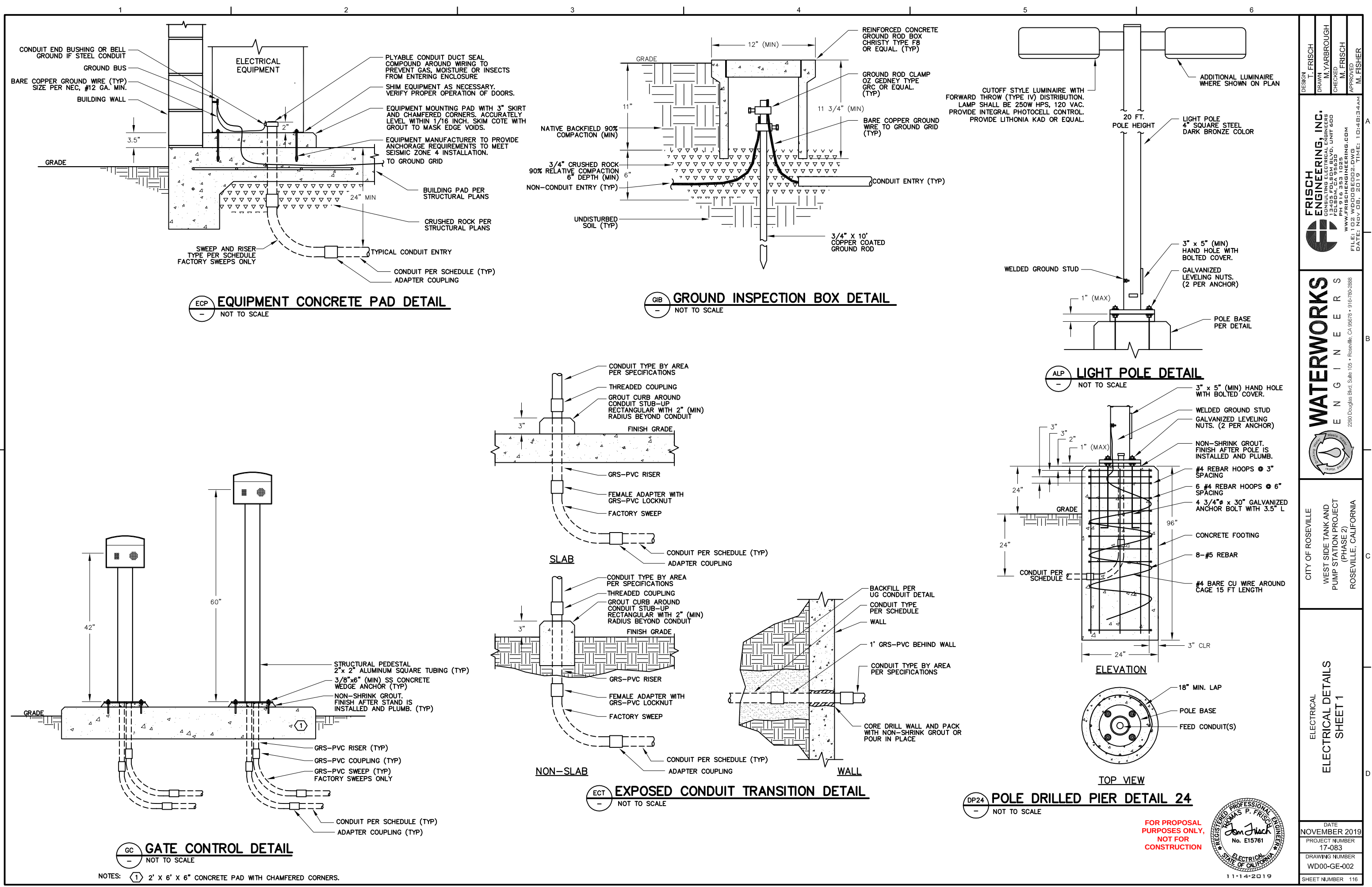
ELECTRICAL
SYMBOLS AND
ABBREVIATIONS

DATE
NOVEMBER 2019

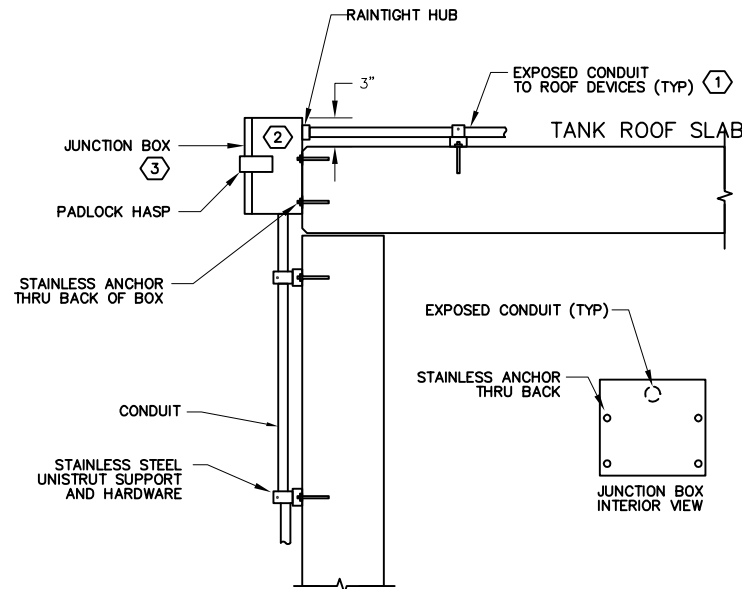
PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-GE-001

SHEET NUMBER 115

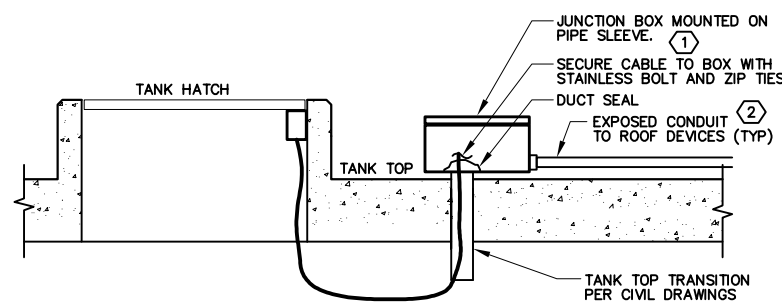


DESIGN T. FRISCH	FRISCH ENGINEERING, INC. 13405 FOLESBY BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 102 WD00 GE002.DWG DATE: NOV 08, 2019 TIME: 10:48:34 AM
DRAWN M. YARBROUGH	WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95678 • 916-790-2888
CHECKED M. FRISCH	
APPROVED M. FISHER	
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	
ELECTRICAL ELECTRICAL DETAILS SHEET 1	
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-GE-002 SHEET NUMBER 116	



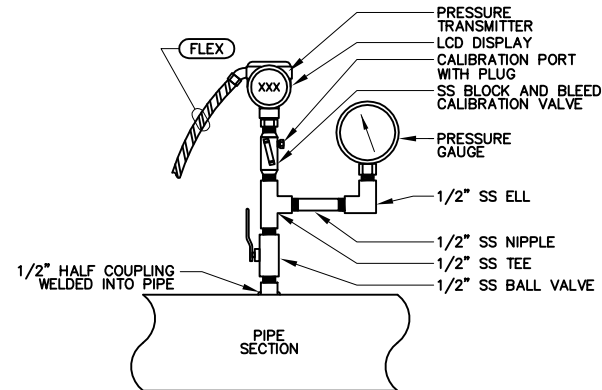
TJB STORAGE TANK LID TRANSITION/JUNCTION BOX DETAIL
NOT TO SCALE

- NOTES:
- 1 EXPOSED CONDUIT ON TANK SHALL BE GRS-PVC WITH STAINLESS STEEL SUPPORTS AND HARDWARE. SUPPORT CONDUIT WITH SINGLE BOLT CLAMPS WITH CLAMP-BACK SPACERS. NO CONDULETS OR SCREW COVER FITTINGS SHALL BE USED ON TANK TOP.
 - 2 BOX SHALL BE SECURED WITH NO EXTERNAL MOUNTING BOLTS OR SCREWS SHOWING. USE ALL STAINLESS STEEL HARDWARE.
 - 3 16"H X 14"W X 8"D, NEMA 4X STAINLESS STEEL JUNCTION BOX. JUNCTION BOX SHALL BE HOFFMAN CHNFSS OR EQUAL. PROVIDE PADLOCK HASP, MASTER LOCK MODEL 722 OR EQUAL.

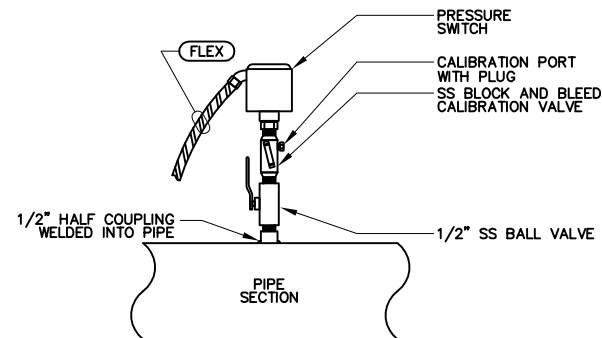


RHD STORAGE TANK HATCH DETAIL
SECTION VIEW, NOT TO SCALE

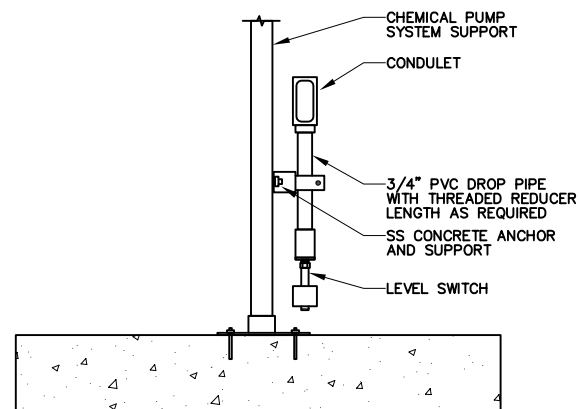
- NOTES:
- 1 12"H X 12"W X 6"D, NEMA 4X STAINLESS STEEL JUNCTION BOX. JUNCTION BOX SHALL BE HOFFMAN CHNFSS OR EQUAL. PROVIDE PADLOCK HASP, MASTER LOCK MODEL 722 OR EQUAL.
 - 2 EXPOSED CONDUIT ON TANK SHALL BE GRS-PVC WITH STAINLESS STEEL SUPPORTS AND HARDWARE. SUPPORT CONDUIT WITH SINGLE BOLT CLAMPS WITH CLAMP-BACK SPACERS. NO CONDULETS OR SCREW COVER FITTINGS SHALL BE USED ON TANK TOP.



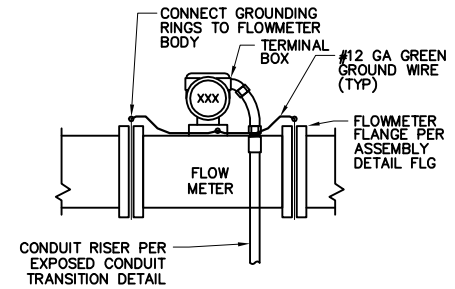
PTD PRESSURE TRANSMITTER DETAIL
NOT TO SCALE



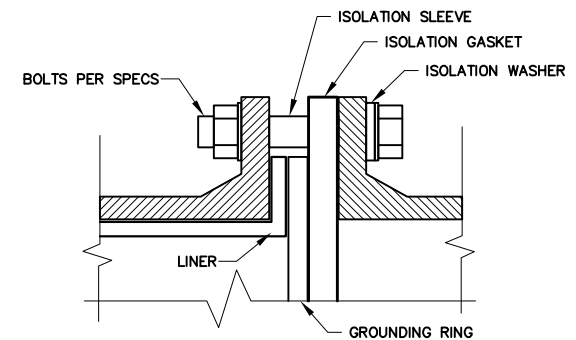
PSD PRESSURE SWITCH DETAIL
NOT TO SCALE



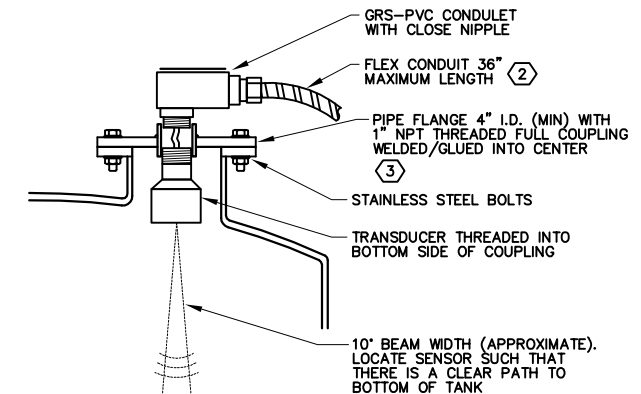
CLS CONTAINMENT LEVEL SWITCH DETAIL
NOT TO SCALE



FM FLOWMETER DETAIL
NOT TO SCALE



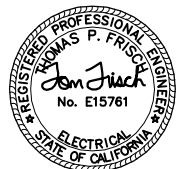
FLG FLOWMETER FLANGE ASSEMBLY
NOT TO SCALE



ULS ULTRASONIC TRANSMITTER DETAIL
NOT TO SCALE

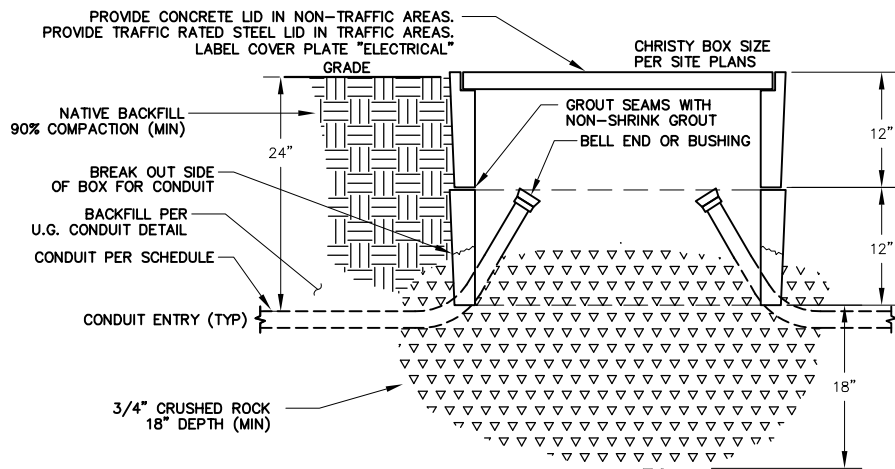
- 1 TANK NOZZLE LENGTH AND DIAMETER SHALL BE COORDINATED WITH TANK MANUFACTURER TO BE WITHIN TRANSMITTER MANUFACTURER GUIDELINES.
- 2 PROVIDE UNISTRUT MOUNTING LOCATIONS EVERY 3 FT FOR CONDUIT MOUNTING ON TANK OUTSIDE WALL. COORDINATE WITH TANK MANUFACTURER PRIOR TO TANK MANUFACTURING.
- 3 OPTIONAL: CONTRACTOR MAY USE 1" NPT THREADED BULKHEAD FITTING WITH GLUED LOCKNUT. TRANSDUCER MUST BE PERPENDICULAR TO LIQUID LEVEL.

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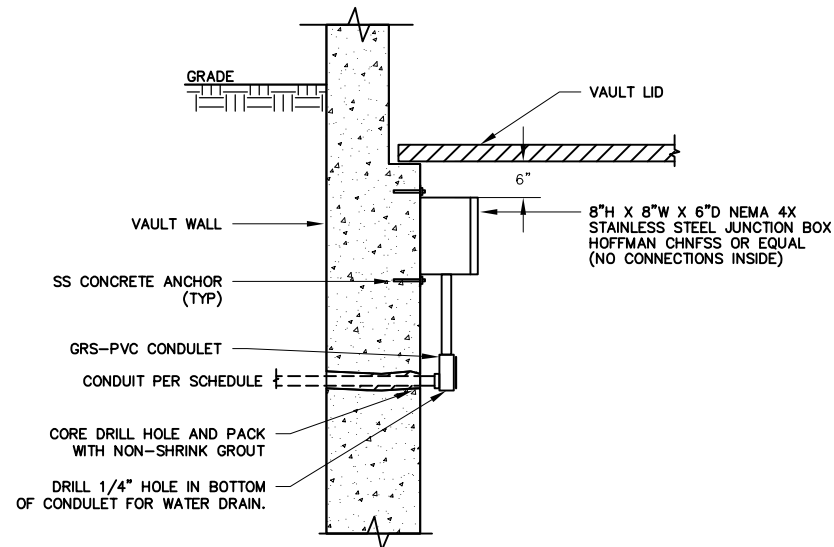


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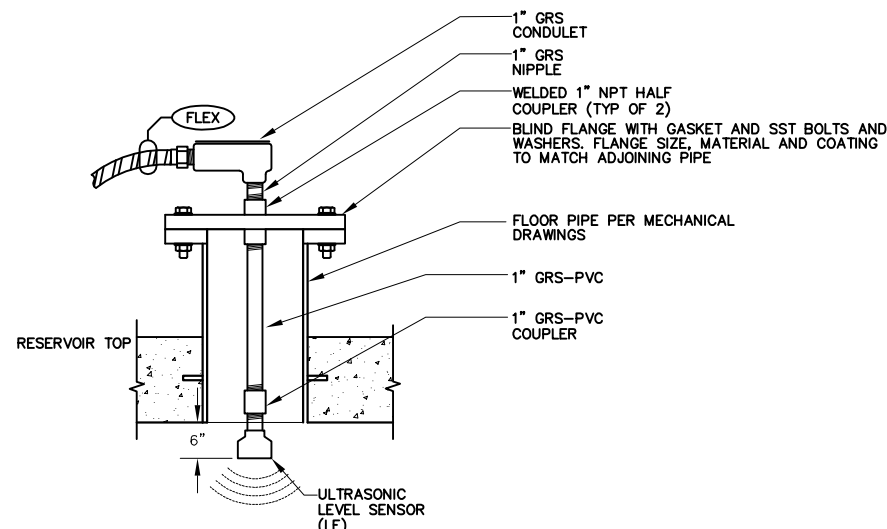
DESIGN T. FRISCH	FRISCH ENGINEERING, INC. 13405 FOLESON BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 102 WD00GE003.DWG DATE: NOV 08, 2019 TIME: 10:48:48AM
DRAWN M. YARBROUGH	
CHECKED M. FRISCH	
APPROVED M. FISHER	
WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95678 • 916-790-2688	
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	
ELECTRICAL ELECTRICAL DETAILS SHEET 2	
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-GE-003 SHEET NUMBER 117	



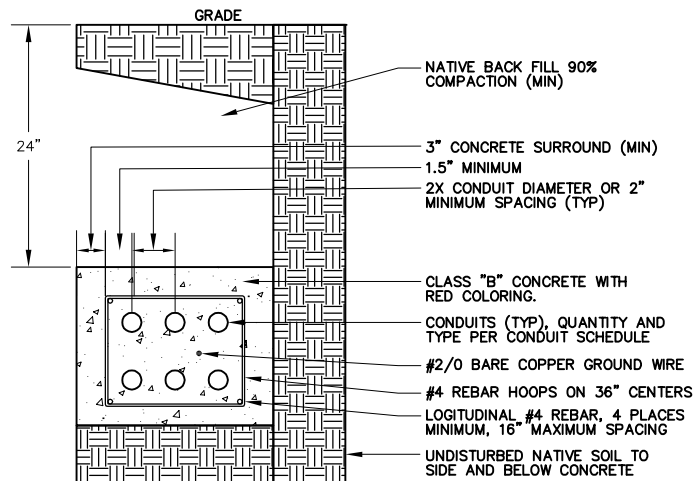
UPB UNDERGROUND PULL BOX DETAIL
NOT TO SCALE



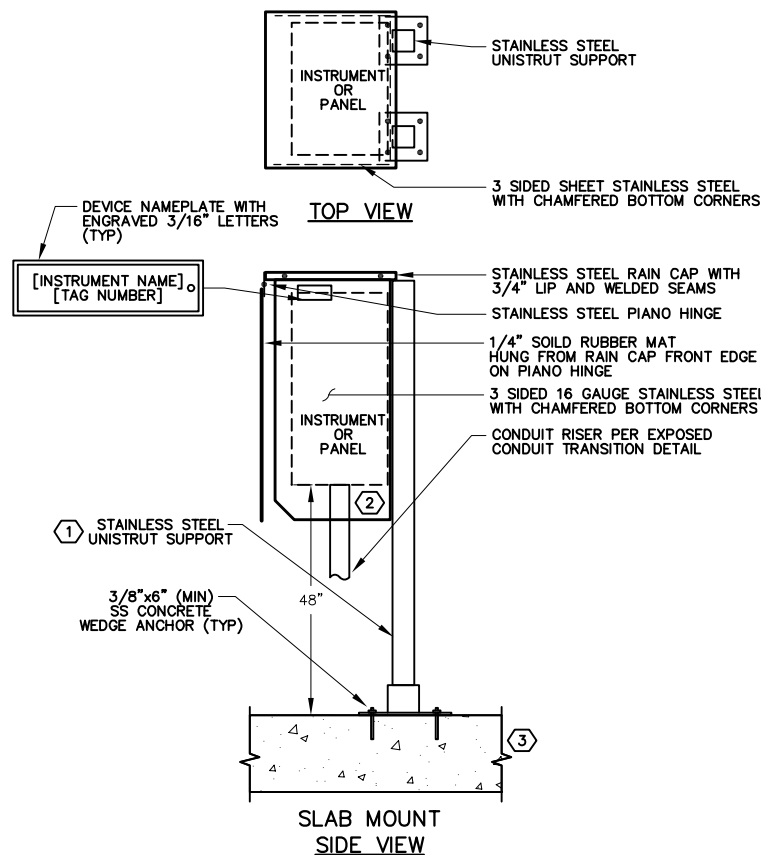
VJD VAULT JBOX DETAIL
NOT TO SCALE



URTD ULTRASONIC RESERVOIR TRANSMITTER DETAIL
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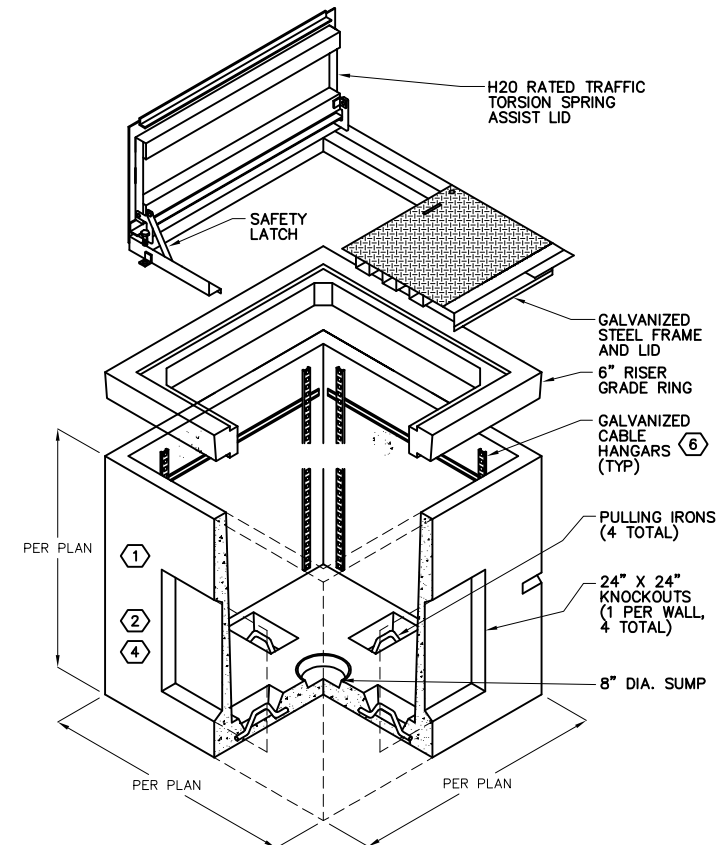


RCE REINFORCED CONDUIT ENCASEMENT DETAIL
NOT TO SCALE



ESD EQUIPMENT STANCHION DETAIL
NOT TO SCALE

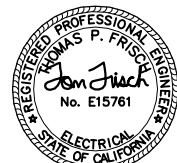
- NOTES:
- 1 ALL STAINLESS STEEL CONSTRUCTION WITH STAINLESS MACHINE HARDWARE.
 - 2 SUNSHADE SHALL BE CUSTOM SIZED FOR INSTRUMENT OR CONTROL PANEL. PROVIDE 3" SPACE AROUND ALL SIDES OF PROTECTED EQUIPMENT
 - 3 2' X 3' X 6" CONCRETE PAD (MINIMUM) WITH CHAMFERED CORNERS.
 - 4 NOTES TYPICAL FOR WALL AND RAIL MOUNT



PSV ELECTRICAL UNDERGROUND VAULT
NOT TO SCALE

- NOTES:
- 1 WIRES IN "P", "L" & "C" SERIES CONDUITS, SHALL BE SUPPORTED ON ONE SIDE OF VAULT AND WIRES FOR "A", "D" & "S" SERIES ON OTHER SIDE. ALL WIRE SHALL BE STRAPPED TO CABLE SUPPORTS.
 - 2 VAULTS SHALL BE CONSTRUCTED OF RE-INFORCED CONCRETE. PROVIDE VAULT BASE AND GRADE RING(S) AS NECESSARY TO MEET OR EXCEED REQUIRED DEPTH.
 - 3 ACCESS COVERS SHALL BE 1/4" GALVANIZED STEEL CHECKER PLATE, HINGED, 2 PIECE, BOLT DOWN, WITH SPRING ASSIST. COVERS SHALL BE H2O TRAFFIC LOAD RATED. LABEL LID "SECONDARY ELECTRICAL" OR "SIGNAL" WITH WELDED LETTERING.
 - 4 CAULK AND GROUT SEAMS AND AROUND CONDUIT ENTRIES TO SMOOTH FINISH AND PREVENT LEAKS. CONDUIT ENTRANCES SHALL BE PER ENCASED CONDUIT END DETAIL. ATTACH CONDUIT LABELS TO WALL ABOVE CONDUIT.
 - 5 OVER-EXCAVATE AND BACKFILL 18" OF 3/4" CRUSHED ROCK BELOW VAULT. BACKFILL AROUND VAULT WALLS WITH NATIVE SOIL.
 - 6 RACKS SHALL BE INSTALLED INSIDE THE MANHOLE FOR TRAINING, SUPPORTING AND ROUTING OF CONDUCTORS. RACKS SHALL BE INSTALLED TO SUPPORT CONDUCTORS AT 2 FOOT INTERVALS AND BE MADE OF HEAVY DUTY NON-METALLIC MATERIALS AS APPROPRIATE OF THE ANTICIPATED LOAD.

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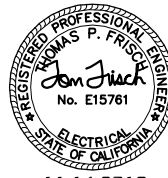


DESIGN T. FRISCH	FRISCH ENGINEERING, INC. 13405 FOLESON BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 103 WD00GE004.DWG DATE: NOV 08, 2019 TIME: 11:06:15AM	
DRAWN M. YARBROUGH		
CHECKED M. FRISCH		
APPROVED M. FISHER		
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	ELECTRICAL ELECTRICAL DETAILS SHEET 4	DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-GE-004 SHEET NUMBER 118

CONDUIT & WIRE ROUTING SCHEDULE (PRELIMINARY)														
REV	CONDUIT DETAILS						POWER WIRE		CONTROL WIRE		SIGNAL WIRE		GROUND	NOTES
	TAG NO.	FROM	TO	QTY	SIZE	TYPE	QTY	SIZE	QTY	SIZE	QTY	SIZE	SIZE	
	21 - E - 150	SWITCHBOARD 2 POWER DISTRIBUTION	FUTURE PUMP 5 SSS CONTROL PANEL	1	3"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 151	SWITCHBOARD 2 POWER DISTRIBUTION	FUTURE PUMP 5 SSS CONTROL PANEL	1	3"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 152	CONTROL PANEL	FUTURE PUMP 5 SSS CONTROL PANEL	1	1"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 153	COMMUNICATIONS PANEL	FUTURE PUMP 5 SSS CONTROL PANEL	1	1"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 250	FUTURE PUMP 5 SSS CONTROL PANEL	FUTURE BOOSTER PUMP 5	1	3"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 251	FUTURE PUMP 5 SSS CONTROL PANEL	FUTURE BOOSTER PUMP 5	1	3"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 251	CONTROL PANEL	FUTURE BOOSTER PUMP 5	1	1"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 252	FUTURE PUMP 5 SSS CONTROL PANEL	FUTURE BOOSTER PUMP 5	1	1"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 401	CONTROL PANEL	FUTURE OPERATIONS CREW FACILITY	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 402	CONTROL PANEL	FUTURE OPERATIONS CREW FACILITY	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 403	COMMUNICATIONS PANEL	FUTURE OPERATIONS CREW FACILITY	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 404	CONTROL PANEL	FUTURE OPERATIONS CREW FACILITY	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 405	SWITCHBOARD 2 POWER DISTRIBUTION	FUTURE OPERATIONS CREW FACILITY	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 501	PANELBOARD "LP-A"	PBX-P02	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB AND CAP
	21 - E - 501A	PBX-P02	VALVE VAULT JBOX	1	3/4"	SPEC	-	-	-	-	-	-	-	PULL ROPE
	21 - E - 501G	PBX-C02	STUB UP TANK 1	1	3/4"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB AND CAP
	21 - E - 501H	PBX-C02	STUB UP TANK 2	1	3/4"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB AND CAP
	21 - E - 502	CONTROL PANEL	PBX-C02	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB AND CAP
	21 - E - 502A	PBX-C02	TANK 1	1	1"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB AND CAP
	21 - E - 502B	PBX-C02	TANK 2	1	1"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB AND CAP
	21 - E - 503	CONTROL PANEL	PBX-C02	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB AND CAP
	21 - E - 503A	PBX-C02	VALVE VAULT JBOX	1	3/4"	SPEC	-	-	-	-	-	-	-	PULL ROPE
	21 - E - 602	CONTROL PANEL	SAMPLE PUMP	1	3/4"	SPEC	-	-	-	-	-	-	-	PULL ROPE
	21 - E - 610	PANELBOARD "LP-A"	PBX-P03	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE
	21 - E - 610A	PBX-P03	GENERATOR	1	1"	SPEC	-	-	-	-	-	-	-	PULL ROPE
	21 - E - 614	COMMUNICATIONS PANEL	PBX-C03	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE
	21 - E - 614A	PBX-C03	LOAD BANK	1	3/4"	SPEC	-	-	-	-	-	-	-	PULL ROPE
	21 - E - 614B	PBX-C03	FUEL TANK CONTROL PANEL	1	3/4"	SPEC	-	-	-	-	-	-	-	PULL ROPE
	21 - E - 621	PANELBOARD "LP-A"	PBX-C04	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE
	21 - E - 701	PANELBOARD "LP-A"	NORTH GATE AREA	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - E - 702	CONTROL PANEL	NORTH GATE AREA	1	2"	SPEC	-	-	-	-	-	-	-	PULL ROPE, STUB OUT CAP
	21 - P - 101	PANELBOARD "LP-A"	COMMUNICATION PANEL	1	1"	SPEC	4	#12	-	-	-	-	#12	
	21 - P - 102	PANELBOARD "LP-A"	CONTROL PANEL	1	1"	SPEC	2	#12	-	-	-	-	#12	
	21 - P - 103	PANELBOARD "LP-A"	CONTROL PANEL	1	1"	SPEC	2	#12	-	-	-	-	#12	
	21 - P - 104	PANELBOARD "LP-A"	SWITCHBOARD 1	1	1"	SPEC	4	#12	-	-	-	-	#12	
	21 - P - 105	SWITCHBOARD 2 POWER DISTRIBUTION	HVAC OUTDOOR UNIT DISCONNECT	1	1 1/2"	SPEC	3	#6	-	-	-	-	#10	
	21 - P - 106	PANELBOARD "LP-A"	SECURITY PANEL	1	1"	SPEC	4	#12	-	-	-	-	#12	
	21 - P - 110	SWITCHBOARD 2 POWER DISTRIBUTION	PUMP 1 VFD CONTROL PANEL	1	3"	SPEC	3	#250	-	-	-	-	#2	
	21 - P - 111	SWITCHBOARD 2 POWER DISTRIBUTION	PUMP 1 VFD CONTROL PANEL	1	3"	SPEC	3	#250	-	-	-	-	#2	
	21 - P - 120	SWITCHBOARD 2 POWER DISTRIBUTION	PUMP 2 SSS CONTROL PANEL	1	3"	SPEC	3	#250	-	-	-	-	#2	
	21 - P - 121	SWITCHBOARD 2 POWER DISTRIBUTION	PUMP 2 SSS CONTROL PANEL	1	3"	SPEC	3	#250	-	-	-	-	#2	
	21 - P - 130	SWITCHBOARD 2 POWER DISTRIBUTION	PUMP 3 VFD CONTROL PANEL	1	3"	SPEC	3	#250	-	-	-	-	#2	
	21 - P - 131	SWITCHBOARD 2 POWER DISTRIBUTION	PUMP 3 VFD CONTROL PANEL	1	3"	SPEC	3	#250	-	-	-	-	#2	
	21 - P - 140	SWITCHBOARD 2 POWER DISTRIBUTION	PUMP 4 SSS CONTROL PANEL	1	3"	SPEC	3	#250	-	-	-	-	#2	
	21 - P - 141	SWITCHBOARD 2 POWER DISTRIBUTION	PUMP 4 SSS CONTROL PANEL	1	3"	SPEC	3	#250	-	-	-	-	#2	
	21 - P - 201	PANELBOARD "LP-A"	SCADA TERMINAL	1	3/4"	SPEC	2	#12	-	-	-	-	#12	
	21 - P - 202	PANELBOARD "LP-A"	STORAGE RESIDUAL CL2 ANALYZER	1	3/4"	SPEC	2	#12	-	-	-	-	#12	
	21 - P - 203	PANELBOARD "LP-A"	DISTRIBUTION RESIDUAL CL2 ANALYZER	1	3/4"	SPEC	2	#12	-	-	-	-	#12	

NOTES PERTAINING TO CONDUIT SCHEDULE:

- CONDUIT TYPE "SPEC" IS AS DEFINED IN SPECIFICATIONS SECTION 16110 FOR NON-EXPOSED AND EXPOSED PORTIONS OF CONDUIT RUN.
- SEE SPECIFICATIONS AND EXPOSED TRANSITION DETAIL OR EQUIPMENT SPECIFIC DETAIL FOR CONDUIT TRANSITION MATERIALS AND METHODS FROM BELOW GROUND TO EXPOSED PORTIONS OF RUN.
- CONDUITS OVER 15 FT LENGTH (EITHER EMPTY OR WITH CONDUCTORS SIZED LESS THAN #8 AWG), SHALL INCLUDE A POLY PULL STRING. STRING SHALL BE TIED OFF AT EACH END.
- FITTINGS, CONDULETS, BOXES AND COVERS SHALL MATCH DUTY OF ADJACENT PIPE, SEE SPECIFICATIONS 16110.
- WIRE SIZING IN TABLE IS BASED ON COPPER CONDUCTORS, THHN INSULATION, WITH TYPE C STRANDING. OTHER CONDUCTOR TYPES, IF ALLOWED OR REQUIRED PER SPECIFICATION, MAY REQUIRE CONDUITS TO BE UPSIZED BY CONTRACTOR AND SUBMITTED FOR APPROVAL.
- SEE GENERAL NOTES ON LIGHTING AND RECEPTACLE PLAN FOR CONDUIT REQUIREMENTS FOR ELECTRICAL DEVICES WITHOUT CONDUITS SHOWN, CONDUIT NUMBERS, OR NOT LISTED IN SCHEDULE.

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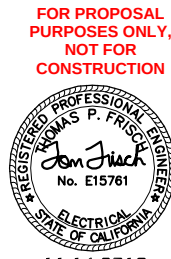
11-14-2019

DESIGN T. FRISCH	DRAWN M. YARBROUGH	CHECKED M. FRISCH	APPROVED M. FISHER
FRISCH ENGINEERING, INC. 13405 FOLESON BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 103 WD00GE005.DWG DATE: NOV 08, 2019 TIME: 11:34:50AM			
WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95678 • 916-790-2688			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
ELECTRICAL CONDUIT AND WIRE ROUTING SCHEDULE (PRELIMINARY)			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-GE-005			
SHEET NUMBER 119			

CONDUIT & WIRE ROUTING SCHEDULE (PRELIMINARY)														
REV	CONDUIT DETAILS							POWER WIRE		CONTROL WIRE		SIGNAL WIRE		NOTES
	TAG NO.	FROM	TO	QTY	SIZE	TYPE		QTY	SIZE	QTY	SIZE	QTY	SIZE	
	21 - P - 210	PUMP 1 VFD CONTROL PANEL	BOOSTER PUMP 1	1	3"	SPEC		3	#250	-	-	-	-	#2
	21 - P - 211	PUMP 1 VFD CONTROL PANEL	BOOSTER PUMP 1	1	3"	SPEC		3	#250	-	-	-	-	#2
	21 - P - 220	PUMP 2 SSS CONTROL PANEL	BOOSTER PUMP 2	1	3"	SPEC		3	#250	-	-	-	-	#2
	21 - P - 221	PUMP 2 SSS CONTROL PANEL	BOOSTER PUMP 2	1	3"	SPEC		3	#250	-	-	-	-	#2
	21 - P - 230	PUMP 3 VFD CONTROL PANEL	BOOSTER PUMP 3	1	3"	SPEC		3	#250	-	-	-	-	#2
	21 - P - 231	PUMP 3 VFD CONTROL PANEL	BOOSTER PUMP 3	1	3"	SPEC		3	#250	-	-	-	-	#2
	21 - P - 240	PUMP 4 SSS CONTROL PANEL	BOOSTER PUMP 4	1	3"	SPEC		3	#250	-	-	-	-	#2
	21 - P - 241	PUMP 4 SSS CONTROL PANEL	BOOSTER PUMP 4	1	3"	SPEC		3	#250	-	-	-	-	#2
	21 - P - 302	PANELBOARD "LP-A"	SODIUM HYPO PUMP 1 VFD	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 303	PANELBOARD "LP-A"	SODIUM HYPO PUMP 2 VFD	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 304	SWITCHBOARD 2 POWER DISTRIBUTION	WATER HEATER	1	3"	SPEC		3	#3/0	-	-	-	-	#6
	21 - P - 501	PANELBOARD "LP-A"	PBX-P02	1	2"	SPEC		6	#12	-	-	-	-	#12
	21 - P - 501A	PBX-P02	VALVE VAULT AREA LIGHT POLE	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 501B	PBX-P02	VALVE VAULT RECEPTACLE	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 501C	PBX-P02	TANK AREA LIGHT POLE	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 502	PANELBOARD "LP-A"	PBX-P02	1	2"	SPEC		4	#12	-	-	-	-	#12
	21 - P - 502A	PBX-P02	TANK 1 DAVIT CRANE RECEPTACLE	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 502B	PBX-P02	TANK 2 DAVIT CRANE RECEPTACLE	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 601	PANELBOARD "LP-A"	SAMPLE PUMP	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 601A~H	UTILITY TRANSFORMER	SWITCHBOARD 1 METER/MAIN	8	4"	SPEC		3	#500	-	-	-	-	#350
	21 - P - 602A~B	UTILITY UG VAULT	UTILITY TRANSFORMER	2	5"	SPEC		-	-	-	-	-	-	PER UTILITY REQUIREMENTS
	21 - P - 603A~H	AUTOMATIC TRANSFER SWITCH	SWITCHBOARD 2 ATS TRANSITION	8	4"	SPEC		3	#500	-	-	-	-	#350
	21 - P - 610	PANELBOARD "LP-A"	PBX-P03	1	2"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 610A	PBX-P03	GENERATOR	1	2"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 611	PANELBOARD "LP-A"	PBX-P03	1	2"	SPEC		4	#12	-	-	-	-	#12
	21 - P - 611A	PBX-P03	GENERATOR	1	2"	SPEC		4	#12	-	-	-	-	#12
	21 - P - 612A~H	SWITCHBOARD 1 GENERATOR BREAKER	GENERATOR	8	4"	SPEC		3	#500	-	-	-	-	#350
	21 - P - 613	PANELBOARD "LP-A"	FUEL TANK CONTROL PANEL	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 614	PANELBOARD "LP-A"	LOAD BANK	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 615A~H	GENERATOR	LOAD BANK	8	4"	SPEC		3	#500	-	-	-	-	#350
	21 - P - 616	SWITCHBOARD 2 POWER DISTRIBUTION	EVAP COOLER DISCONNECT	1	1 1/2"	SPEC		3	#6	-	-	-	-	#10
	21 - P - 617	SWITCHBOARD 2 POWER DISTRIBUTION	EVAP COOLER TRANSFORMER	1	3/4"	SPEC		3	#12	-	-	-	-	#12
	21 - P - 620	GENERATOR	FUEL TANK	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 631	PANELBOARD "LP-A"	PBX-P03	1	2"	SPEC		6	#12	-	-	-	-	#12
	21 - P - 631A	PBX-P03	GENERATOR AREA LIGHT	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 631B	PBX-P03	PBX-P05	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 631C	PBX-P05	EAST GATE AREA SITE LIGHT	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 631D	PBX-P05	AREA SITE LIGHT	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 632	PANELBOARD "LP-A"	PBX-P05	1	2"	SPEC		2	#10	-	-	-	-	#12
	21 - P - 632A	PBX-P05	EAST GATE SLIDE GATE OPERATOR	1	1"	SPEC		2	#10	-	-	-	-	#12
	21 - P - 701	PANELBOARD "LP-A"	NORTH GATE AREA LIGHT	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 702	PANELBOARD "LP-A"	PARKING AREA LIGHT 1	1	3/4"	SPEC		4	#12	-	-	-	-	#12
	21 - P - 702A	PARKING AREA LIGHT 1	PARKING AREA LIGHT 2	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 750A	PBX-C01	CAMERA 751	1	3/4"	SPEC		2	#12	-	-	-	-	#12
	21 - P - 750B	PBX-C01	CAMERA 752	1	3/4"	SPEC		2	#12	-	-	-	-	#12

NOTES PERTAINING TO CONDUIT SCHEDULE:

- CONDUIT TYPE "SPEC" IS AS DEFINED IN SPECIFICATIONS SECTION 16110 FOR NON-EXPOSED AND EXPOSED PORTIONS OF CONDUIT RUN.
- SEE SPECIFICATIONS AND EXPOSED TRANSITION DETAIL OR EQUIPMENT SPECIFIC DETAIL FOR CONDUIT TRANSITION MATERIALS AND METHODS FROM BELOW GROUND TO EXPOSED PORTIONS OF RUN.
- CONDUITS OVER 15 FT LENGTH (EITHER EMPTY OR WITH CONDUCTORS SIZED LESS THAN #8 AWG), SHALL INCLUDE A POLY PULL STRING. STRING SHALL BE TIED OFF AT EACH END.
- FITTINGS, CONDULETS, BOXES AND COVERS SHALL MATCH DUTY OF ADJACENT PIPE, SEE SPECIFICATIONS 16110.
- WIRE SIZING IN TABLE IS BASED ON COPPER CONDUCTORS, THHN INSULATION, WITH TYPE C STRANDING. OTHER CONDUCTOR TYPES, IF ALLOWED OR REQUIRED PER SPECIFICATION, MAY REQUIRE CONDUITS TO BE UPSIZED BY CONTRACTOR AND SUBMITTED FOR APPROVAL.
- SEE GENERAL NOTES ON LIGHTING AND RECEPTACLE PLAN FOR CONDUIT REQUIREMENTS FOR ELECTRICAL DEVICES WITHOUT CONDUITS SHOWN, CONDUIT NUMBERS, OR NOT LISTED IN SCHEDULE.

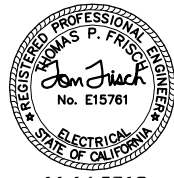


DESIGN T. FRISCH	DRAWN M. YARBROUGH	CHECKED M. FRISCH	APPROVED M. FISHER
FRISCH ENGINEERING, INC. 13405 FOLESON BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 103 WD00GE006.DWG DATE: NOV 08, 2019 TIME: 5:06:34PM			
WATERWORKS ENGINEERS 2260 Douglas Blvd, Suite 105 • Roseville, CA 95678 • 916-790-2688			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
ELECTRICAL CONDUIT AND WIRE ROUTING SCHEDULE (PRELIMINARY)			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-GE-006			
SHEET NUMBER 120			

CONDUIT & WIRE ROUTING SCHEDULE (PRELIMINARY)														
REV	CONDUIT DETAILS						POWER WIRE		CONTROL WIRE		SIGNAL WIRE		GROUND	NOTES
	TAG NO.	FROM	TO	QTY	SIZE	TYPE	QTY	SIZE	QTY	SIZE	QTY	SIZE	SIZE	
	21 - S - 101	CONTROL PANEL	COMMUNICATION PANEL	1	1"	SPEC	-	-	-	-	3	CAT 6e	#12	
	21 - S - 102	SWITCHBOARD 1	COMMUNICATION PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	#12	
	21 - S - 103	SWITCHBOARD 2 ATS	COMMUNICATION PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	#12	
	21 - S - 104	CONTROL PANEL	SWITCHBOARD 2 ATS	1	3/4"	SPEC	-	-	8	#14	-	-	#14	
	21 - S - 105	CONTROL PANEL	HVAC OUTDOOR UNIT	1	1"	SPEC	-	-	-	-	1	#16 TSPR	-	
	21 - S - 106	CONTROL PANEL	SECURITY PANEL	1	2"	SPEC	-	-	6	#14	-	-	#14	
	21 - S - 110	CONTROL PANEL	PUMP 1 VFD CONTROL PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	-	
	21 - S - 111	COMMUNICATIONS PANEL	PUMP 1 VFD CONTROL PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	-	
	21 - S - 120	CONTROL PANEL	PUMP 2 SSS CONTROL PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	-	
	21 - S - 121	COMMUNICATIONS PANEL	PUMP 2 SSS CONTROL PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	-	
	21 - S - 130	CONTROL PANEL	PUMP 3 VFD CONTROL PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	-	
	21 - S - 131	COMMUNICATIONS PANEL	PUMP 3 VFD CONTROL PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	-	
	21 - S - 140	CONTROL PANEL	PUMP 4 SSS CONTROL PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	-	
	21 - S - 141	COMMUNICATIONS PANEL	PUMP 4 SSS CONTROL PANEL	1	1"	SPEC	-	-	-	-	1	CAT 6e	-	
	21 - S - 181	CONTROL PANEL	ELECTRICAL ROOM TEMP TRANSMITTER	1	3/4"	SPEC	-	-	-	-	1	#16 TSPR	-	#TIT-*783
	21 - S - 182	CONTROL PANEL	OUTDOOR TEMP TRANSMITTER	1	3/4"	SPEC	-	-	-	-	1	#16 TSPR	-	#TIT-*781
	21 - S - 182A	CONTROL PANEL	PUMP ROOM MAN DOOR INTRUSION JBOX	1	3/4"	SPEC	-	-	-	-	1	#16 TSPR	-	#TIT-*791
	21 - S - 192	CONTROL PANEL	PUMP ROOM MAN TEMP TRANSMITTER	1	3/4"	SPEC	-	-	-	-	1	#16 TSPR	-	#TIT-*782
	21 - S - 193	CONTROL PANEL	PUMP ROOM MAN DOOR INTRUSION JBOX	1	3/4"	SPEC	-	-	6	#14	-	-	#14	#ZSB-*793
	21 - S - 194	CONTROL PANEL	ELECTRICAL ROOM SMOKE DETECTOR JBOX	1	3/4"	SPEC	-	-	6	#14	-	-	#14	#SS-*98C
	21 - S - 194A	ELECTRICAL ROOM SMOKE DETECTOR JBOX	PUMP ROOM SMOKE DETECTOR JBOX	1	3/4"	SPEC	-	-	4	#14	-	-	#14	#SS-*98B
	21 - S - 194B	PUMP ROOM SMOKE DETECTOR JBOX	PUMP ROOM SMOKE DETECTOR JBOX	1	3/4"	SPEC	-	-	2	#14	-	-	#14	#SS-*98A
	21 - S - 195	CONTROL PANEL	ELECTRICAL ROOM MAN DOOR INTRUSION JBOX	1	3/4"	SPEC	-	-	2	#14	-	-	#14	#ZSA-*793
	21 - S - 201	CONTROL PANEL	SCADA TERMINAL	1	1"	SPEC	-	-	-	-	1	CAT 6e	-	
	21 - S - 202	CONTROL PANEL	STORAGE RESIDUAL CL2 ANALYZER	1	1"	SPEC	-	-	-	-	1	#16 TSPR	#14	~AIT-*081
	21 - S - 203	CONTROL PANEL	DISTRIBUTION RESIDUAL CL2 ANALYZER	1	1"	SPEC	-	-	-	-	1	#16 TSPR	#14	~AIT-*082
	21 - S - 205	CONTROL PANEL	DISCHARGE PRESSURE TRANSMITTER	1	1"	SPEC	-	-	-	-	1	#16 TSPR	#14	#PIT-*063
	21 - S - 206	CONTROL PANEL	PRESSURE SUSTATING VALVE	1	1"	SPEC	-	-	2	#14	1	#16 TSPR	#14	
	21 - S - 207	CONTROL PANEL	DISTRIBUTION FLOWMETER	1	1"	SPEC	-	-	-	-	1	#16 TSPR	#14	#FIT-*071
	21 - S - 210	PUMP 1 VFD CONTROL PANEL	BOOSTER PUMP 1	1	3/4"	SPEC	-	-	4	#14	-	-	#14	
	21 - S - 211	CONTROL PANEL	BOOSTER PUMP 1 JBOX	1	1"	SPEC	-	-	4	#14	1	#16 TSPR	#14	#ZSO-*100, #PSH-*161, #VIT-*100
	21 - S - 220	PUMP 2 SSS CONTROL PANEL	BOOSTER PUMP 2	1	3/4"	SPEC	-	-	4	#14	-	-	#14	
	21 - S - 221	CONTROL PANEL	BOOSTER PUMP 2 JBOX	1	1"	SPEC	-	-	4	#14	1	#16 TSPR	#14	#ZSO-*200, #PSH-*261, #VIT-*200
	21 - S - 230	PUMP 3 VFD CONTROL PANEL	BOOSTER PUMP 3	1	3/4"	SPEC	-	-	4	#14	-	-	#14	
	21 - S - 231	CONTROL PANEL	BOOSTER PUMP 3 JBOX	1	1"	SPEC	-	-	4	#14	1	#16 TSPR	#14	#ZSO-*300, #PSH-*361, #VIT-*300
	21 - S - 240	PUMP 4 SSS CONTROL PANEL	BOOSTER PUMP 4	1	3/4"	SPEC	-	-	4	#14	-	-	#14	
	21 - S - 241	CONTROL PANEL	BOOSTER PUMP 4 JBOX	1	1"	SPEC	-	-	4	#14	1	#16 TSPR	#14	#ZSO-*400, #PSH-*461, #VIT-*400
	21 - S - 293	PUMP ROOM MAN DOOR INTRUSION JBOX	CL2 ROOM MAN DOOR INTRUSION JBOX	1	3/4"	SPEC	-	-	4	#14	-	-	#14	#ZSC-*793
	21 - S - 293A	CL2 ROOM MAN DOOR INTRUSION JBOX	PUMP ROOM ROLLUP DOOR INTRUSION JBOX	1	3/4"	SPEC	-	-	2	#14	-	-	#14	#ZSD-*793
	21 - S - 301	CONTROL PANEL	SODIUM HYPO LEVEL TRANSMITTER	1	1"	SPEC	-	-	-	-	1	#16 TSPR	-	#LIT-*151
	21 - S - 302	CONTROL PANEL	SODIUM HYPO PUMP 1 VFD	1	1 1/2"	SPEC	-	-	6	#14	3	#16 TSPR	#14	#FIT-*171
	21 - S - 303	CONTROL PANEL	SODIUM HYPO PUMP 2 VFD	1	1 1/2"	SPEC	-	-	6	#14	3	#16 TSPR	#14	#FIT-*271
	21 - S - 304	CONTROL PANEL	CONTAINMENT LEVEL SWITCH	1	3/4"	SPEC	-	-	2	#14	-	-	#14	#LSH-*151
	21 - S - 305	CONTROL PANEL	EYE WASH FLOW SWITCH	1	3/4"	SPEC	-	-	2	#14	-	-	#14	#EWSS-*171

NOTES PERTAINING TO CONDUIT SCHEDULE:

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FOR PROPOSAL
PURPOSES ONLY,
NOT FOR
CONSTRUCTION

11-14-2019

DESIGN T. FRISCH	DRAWN M. YARBROUGH	CHECKED M. FRISCH	APPROVED M. FISHER
FRISCH ENGINEERING, INC. 13405 FOLESBOM BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM DATE: NOV 08, 2019 TIME: 11:32:47AM			
WATERWORKS ENGINEERS 2260 Douglas Blvd. Suite 105 • Roseville, CA 95678 • 916-790-2688			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
ELECTRICAL CONDUIT AND WIRE ROUTING SCHEDULE (PRELIMINARY)			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-GE-007			
SHEET NUMBER 121			

CONDUIT & WIRE ROUTING SCHEDULE (PRELIMINARY)													
REV	CONDUIT DETAILS						POWER WIRE		CONTROL WIRE		SIGNAL WIRE		NOTES
	TAG NO.	FROM	TO	QTY	SIZE	TYPE	QTY	SIZE	QTY	SIZE	QTY	SIZE	
	21 - S - 501	CONTROL PANEL	PBX-C02	1	2"	SPEC	-	-	12	#14	6	#16 TSPR	#14
	21 - S - 501A	PBX-C02	TANK 1 LADDER INTRUSION SWITCH	1	3/4"	SPEC	-	-	2	#14	-	-	#ZS-*191
	21 - S - 501B	PBX-C02	TANK 1 HATCH 1 JBOX	1	3/4"	SPEC	-	-	2	#14	-	-	#ZSA-*192
	21 - S - 501C	TANK 1 HATCH 1 JBOX	TANK 1 HATCH 2 INTRUSION SWITCH	1	3/4"	SPEC	-	-	2	#14	-	-	#ZSB-*192
	21 - S - 501D	PBX-C02	TANK 2 LADDER INTRUSION SWITCH	1	3/4"	SPEC	-	-	2	#14	-	-	#ZS-*291
	21 - S - 501E	PBX-C02	TANK 2 HATCH 1 JBOX	1	3/4"	SPEC	-	-	2	#14	-	-	#ZSA-*292, #LSH-*251, #LSL-*251
	21 - S - 501F	TANK 2 HATCH 1 JBOX	TANK 2 HATCH 2 INTRUSION SWITCH	1	3/4"	SPEC	-	-	2	#14	-	-	#ZSB-*292
	21 - S - 501J	PBX-C02	TANK 1 LEVEL TRANSMITTER	1	3/4"	SPEC	-	-	-	-	1	#16 TSPR	-
	21 - S - 501K	PBX-C02	TANK 2 LEVEL TRANSMITTER	1	3/4"	SPEC	-	-	-	-	1	#16 TSPR	-
	21 - S - 550	SECURITY PANEL	PBX-C02	1	2"	SPEC	-	-	-	-	3	CAT 6E	-
	21 - S - 550A	PBX-C02	CAMERA 551	1	3/4"	SPEC	-	-	-	-	1	CAT 6E	-
	21 - S - 550B	PBX-C02	CAMERA 552	1	3/4"	SPEC	-	-	-	-	1	CAT 6E	-
	21 - S - 550C	PBX-C02	CAMERA 553	1	3/4"	SPEC	-	-	-	-	1	CAT 6E	-
	21 - S - 610	COMMUNICATIONS PANEL	PBX-C03	1	2"	SPEC	-	-	-	-	1	CAT 6e	-
	21 - S - 610A	PBX-C03	GENERATOR	1	3/4"	SPEC	-	-	-	-	1	CAT 6e	-
	21 - S - 611	CONTROL PANEL	PBX-C03	1	2"	SPEC	-	-	4	#14	-	-	#14
	21 - S - 611A	PBX-C03	GENERATOR	1	3/4"	SPEC	-	-	4	#14	-	-	#14
	21 - S - 612	SWITCHBOARD 2 ATS	PBX-C03	1	2"	SPEC	-	-	2	#14	-	-	#14
	21 - S - 612A	PBX-C03	GENERATOR	1	3/4"	SPEC	-	-	2	#14	-	-	#14
	21 - S - 613	CONTROL PANEL	FUEL TANK CONTROL PANEL	1	3/4"	SPEC	-	-	6	#14	1	#16 TSPR	#14
	21 - S - 614	CONTROL PANEL	LOAD BANK	1	2"	SPEC	-	-	4	#14	1	CAT 6e	#14
	21 - S - 615	GENERATOR	LOAD BANK	1	3/4"	SPEC	-	-	4	#14	-	-	#14
	21 - S - 621	CONTROL PANEL	PBX-C04	1	2"	SPEC	-	-	-	-	2	#16 TSPR	-
	21 - S - 621A	PBX-C04	HYDRO TANK PRESSURE TRANSMITTER	1	3/4"	SPEC	-	-	-	-	1	#16 TSPR	-
	21 - S - 621B	PBX-C04	HYDRO TANK LEVEL TRANSMITTER	1	3/4"	SPEC	-	-	-	-	1	#16 TSPR	-
	21 - S - 631	CONTROL PANEL	PBX-C05	1	2"	SPEC	-	-	20	#14	-	-	#14
	21 - S - 631A	PBX-C05	EAST GATE SLIDE GATE OPERATOR	1	3/4"	SPEC	-	-	8	#14	-	-	#14
	21 - S - 631B	PBX-C05	GATE ACCESS STATION 1	1	3/4"	SPEC	-	-	6	#14	-	-	#14
	21 - S - 631C	PBX-C05	GATE ACCESS STATION 2	1	3/4"	SPEC	-	-	6	#14	-	-	#14
	21 - S - 632	COMMUNICATIONS PANEL	PBX-C05	1	2"	SPEC	-	-	-	-	2	CAT 6E	-
	21 - S - 632A	PBX-C05	GATE ACCESS STATION 1	1	3/4"	SPEC	-	-	-	-	1	CAT 6E	-
	21 - S - 632B	PBX-C05	GATE ACCESS STATION 2	1	3/4"	SPEC	-	-	-	-	1	CAT 6E	-
	21 - S - 650	SECURITY PANEL	PBX-C03	1	2"	SPEC	-	-	-	-	2	CAT 6E	-
	21 - S - 650A	PBX-C03	CAMERA 651	1	3/4"	SPEC	-	-	-	-	1	CAT 6E	-
	21 - S - 650B	PBX-C03	CAMERA 652	1	3/4"	SPEC	-	-	-	-	1	CAT 6E	-
	21 - S - 750	SECURITY PANEL	PBX-C01	1	2"	SPEC	-	-	-	-	2	CAT 6E	-
	21 - S - 750A	PBX-C01	CAMERA 751	1	3/4"	SPEC	-	-	-	-	1	CAT 6E	-
	21 - S - 750B	PBX-C01	CAMERA 752	1	3/4"	SPEC	-	-	-	-	1	CAT 6E	-

NOTES PERTAINING TO CONDUIT SCHEDULE:

1. CONDUIT TYPE "SPEC" IS AS DEFINED IN SPECIFICATIONS SECTION 16110 FOR NON-EXPOSED AND EXPOSED PORTIONS OF CONDUIT RUN.
2. SEE SPECIFICATIONS AND EXPOSED TRANSITION DETAIL OR EQUIPMENT SPECIFIC DETAIL FOR CONDUIT TRANSITION MATERIALS AND METHODS FROM BELOW GROUND TO EXPOSED PORTIONS OF RUN.
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4. FITTINGS, CONDULETS, BOXES AND COVERS SHALL MATCH DUTY OF ADJACENT PIPE, SEE SPECIFICATIONS 16110.
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6. SEE GENERAL NOTES ON LIGHTING AND RECEPTACLE PLAN FOR CONDUIT REQUIREMENTS FOR ELECTRICAL DEVICES WITHOUT CONDUITS SHOWN, CONDUIT NUMBERS, OR NOT LISTED IN SCHEDULE.



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DRAWN
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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

ELECTRICAL
CONDUIT AND WIRE ROUTING
SCHEDULE (PRELIMINARY)

DATE
NOVEMBER 2019

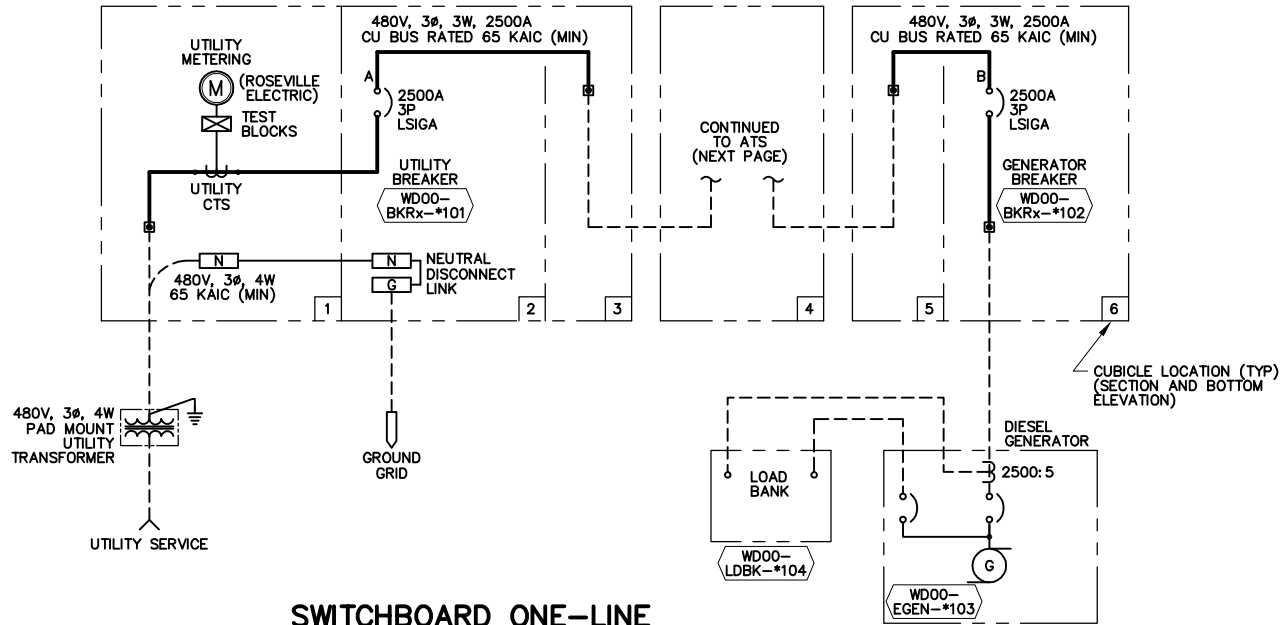
PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-GE-008

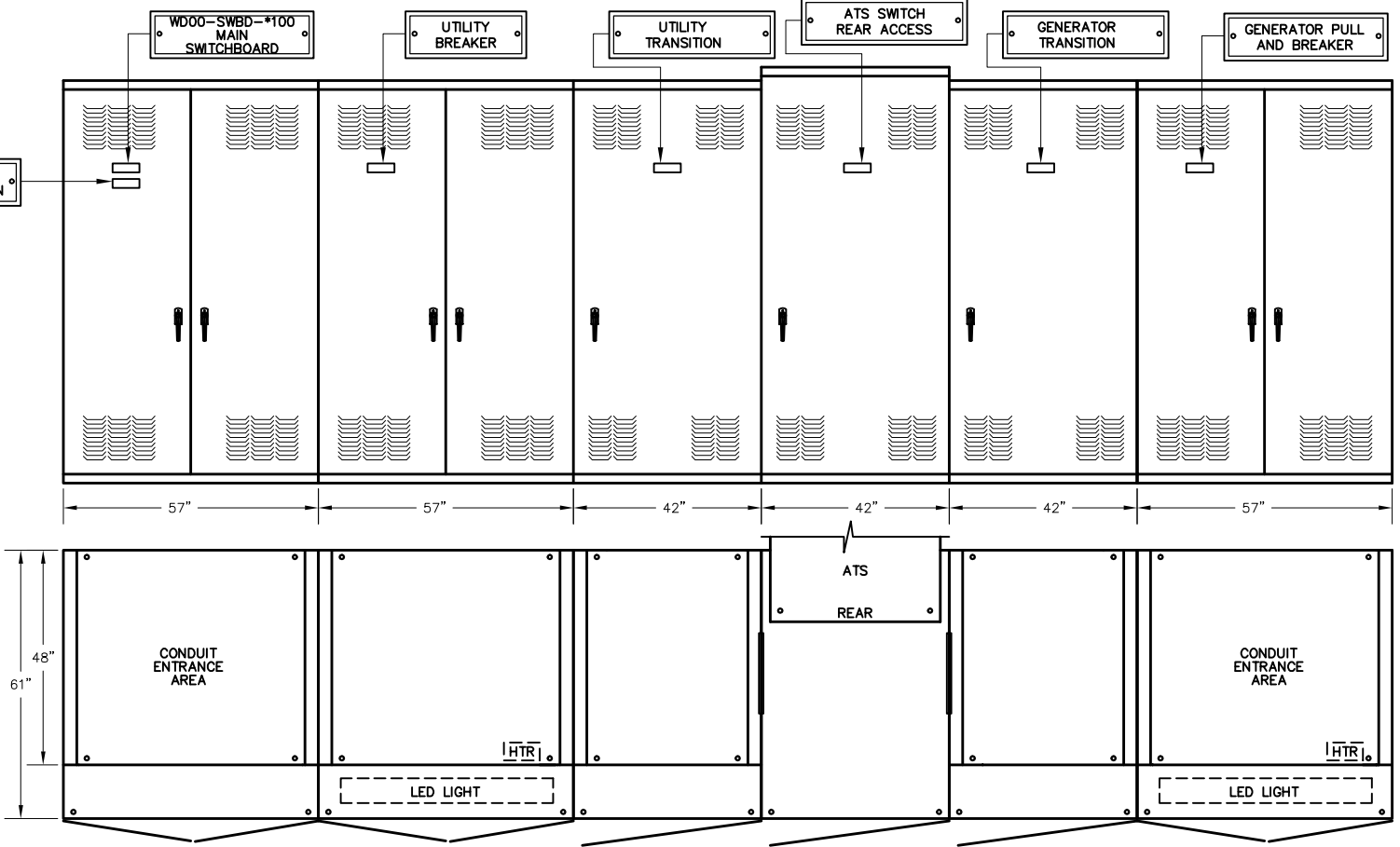
SHEET NUMBER 122

GENERAL NOTES:

- EACH BREAKER SHALL HAVE A PADLOCKABLE HASP TO LOCK BREAKER IN THE OFF POSITION.
- ALL DIMENSIONS ARE APPROXIMATE. ACTUAL DIMENSIONS SHALL BE PER MANUFACTURER APPROVED IN SUBMITTAL.
- FURNISH AND APPLY ENGRAVED WHITE LETTERING ON BLACK PLASTIC NAMEPLATES FOR DEVICES AND BREAKERS WHERE NOTED, ON EXTERIOR DOORS AT MINIMUM, WITH A LETTERED BOX. TEXT HEIGHT SHALL BE 1/4 INCH MINIMUM. REFERENCE ONE-LINE DIAGRAM FOR LABEL.
- FURNISH CODE REQUIRED WARNING LABELS AND EQUIPMENT RATINGS LABELS.
- SEE TAGGING CONVENTIONS ON P&IDs TO COMPLETE EQUIPMENT TAG NUMBERS.

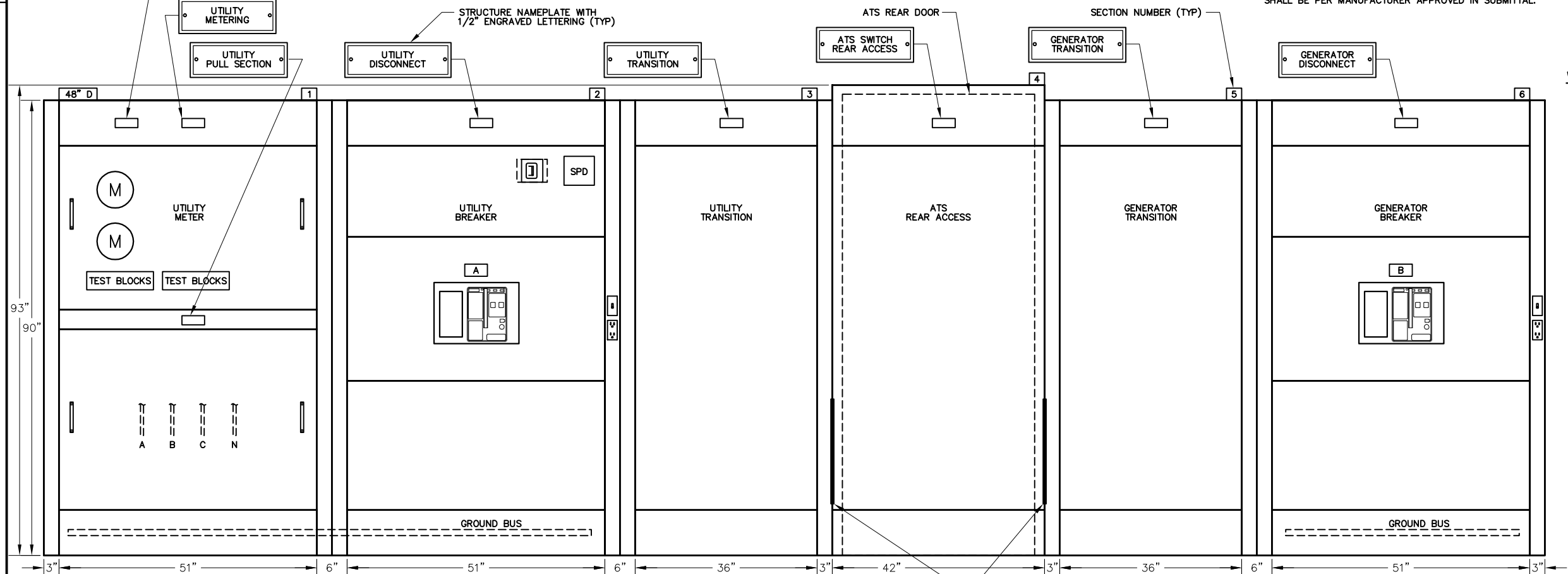


SWITCHBOARD ONE-LINE



METER/MAIN WEATHERWRAP

- ALL DIMENSIONS ARE APPROXIMATE. ACTUAL DIMENSIONS SHALL BE PER MANUFACTURER APPROVED IN SUBMITTAL.



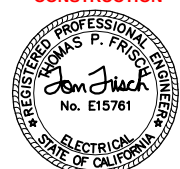
SWITCHBOARD ELEVATION
OUTDOOR, NEMA 3R

12"x24" OPEN WINDOW WITH EDGE GUARD GASKET (TYP OF 2)

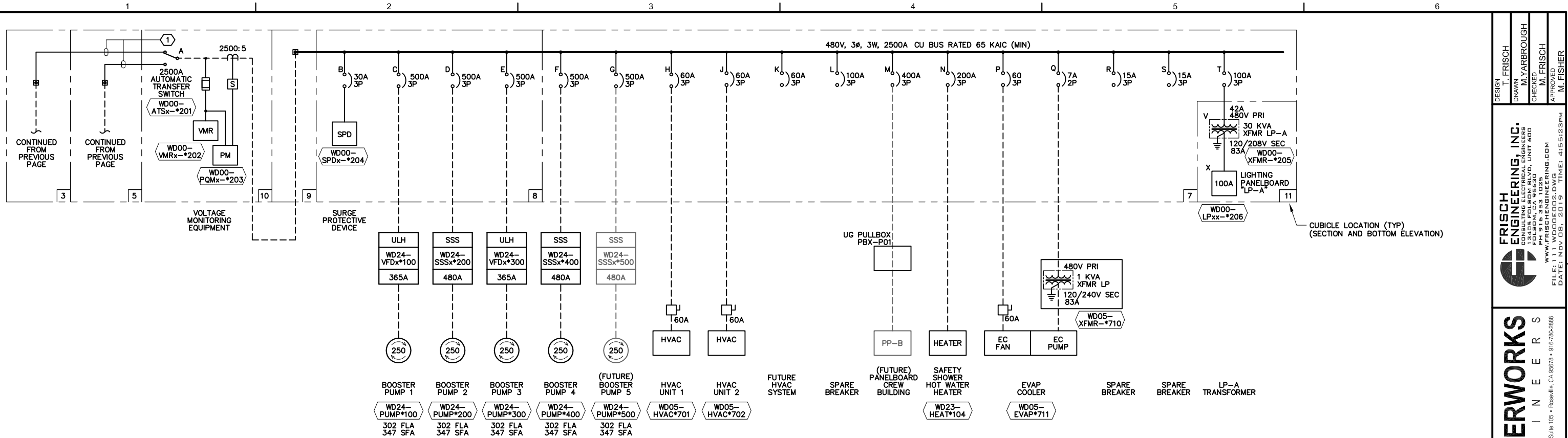
WEATHERWRAP FABRICATION METHODS

- NEMA 3R WEATHER-PROOF FOR OUTDOOR INSTALLATION.
- OUTER DOORS SHALL BE SEALED WITH RUBBERIZED FOAM GASKET.
- EXTERIOR FABRICATED FROM GALVANEAL (PAINT BOND) SHEET STEEL.
- 12 GAUGE EXTERIOR AND 14 GAUGE INTERIOR.
- ALL SEAMS SHALL HAVE CONTINUOUS WELD, GROUND SMOOTH.
- OUTER DOORS TO BE PADLOCKABLE WITH HEAVY DUTY 3 POINT LATCHES.
- DOOR HINGES AND PINS SHALL BE 316 STAINLESS STEEL.
- NO SCREWS, RIVETS, OR BOLTS SHALL PROTRUDE EXTERNALLY.
- INTERNAL SCREWS, RIVETS, BOLTS, AND NUTS SHALL BE STAINLESS STEEL.
- PAINT APPLICATION SHALL BE AS FOLLOWS:
A. TWO STAGE CHEMICAL BATH CLEANING.
B. ELECTROSTATICALLY APPLIED POWDER COAT PAINT FINISH.
C. OVEN CURED FOR TWO HOURS.
D. EXTERIOR COLOR SHALL BE: HOSPITAL WHITE.
- PHENOLIC SCREW MOUNTED NAMEPLATES SHALL BE PROVIDED FOR ALL OUTER DOOR SECTIONS.
- FABRICATION, COMPONENTS, AND WIRING SHALL CONFORM TO UL, NEC AND NEMA STANDARDS. PANEL SHALL BE APPROPRIATELY LABELLED.
- ALL WIRING SHALL BE LABELLED ON BOTH ENDS OF WIRE.
- AS-BUILT WIRING DIAGRAMS SHALL BE SHIPPED WITH PANEL.
- PROVIDE DRAWING POCKET ON INSIDE OF CONTROL PANEL DOOR.

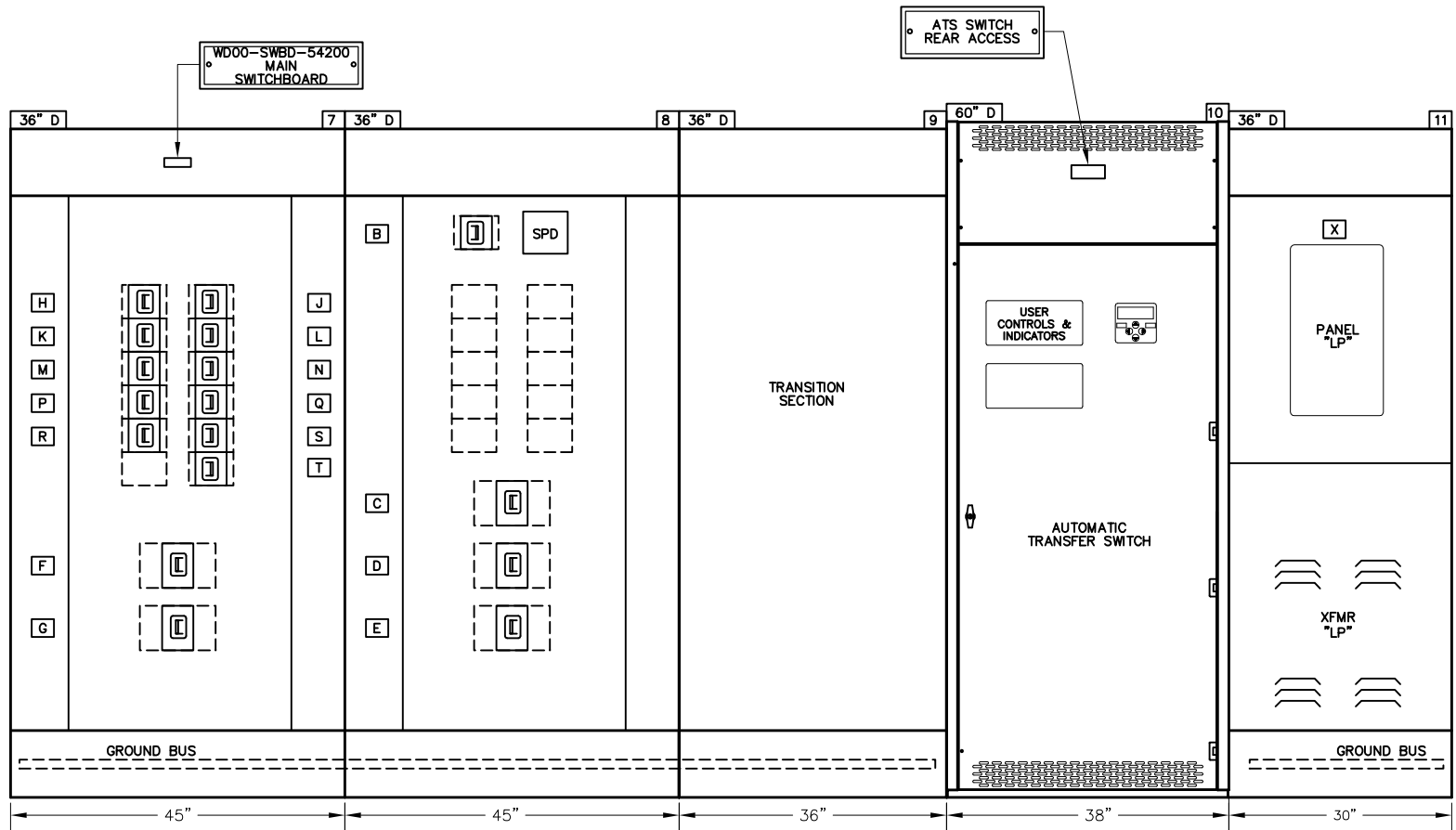
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DESIGN T. FRISCH	FRISCH ENGINEERING, INC. 13405 FOLESON BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 110 WD00E001.DWG DATE: NOV 08, 2019 TIME: 11:06:44 AM
DRAWN M. YARBROUGH	WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95678 • 916-790-2688
CHECKED M. FRISCH	
APPROVED M. FISHER	
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	
ELECTRICAL SWITCHBOARD ONE-LINE AND ELEVATION	
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-E-001 SHEET NUMBER 123	



ATS AND DISTRIBUTION ONE-LINE DIAGRAM



ATS AND DISTRIBUTION ELEVATION

INDOOR, NEMA 1

LEGEND

- VMR VOLTAGE MONITORING RELAY
PM POWER MONITOR
SPD SURGE PROTECTIVE DEVICE, 300KA (MIN)

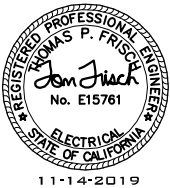
GENERAL NOTES:

1. REAR ACCESS SHALL NOT BE REQUIRED TO SERVICE OR REPLACE SWITCHBOARD COMPONENTS.
2. EACH BREAKER SHALL HAVE A PADLOCKABLE HASP TO LOCK BREAKER IN THE OFF POSITION.
3. ALL DIMENSIONS ARE APPROXIMATE. ACTUAL DIMENSIONS SHALL BE PER MANUFACTURER APPROVED IN SUBMITTAL.
4. FURNISH AND APPLY ENGRAVED WHITE LETTERING ON BLACK PLASTIC NAMEPLATES FOR DEVICES AND BREAKERS WHERE NOTED, AT MINIMUM, WITH A LETTERED BOX. TEXT HEIGHT SHALL BE 1/4 INCH MINIMUM. REFERENCE ONE-LINE DIAGRAM FOR LABEL.
5. FURNISH CODE REQUIRED WARNING LABELS AND EQUIPMENT RATINGS LABELS.
6. SEE TAGGING CONVENTIONS ON P&IDS TO COMPLETE EQUIPMENT TAG NUMBERS.

NOTES REFERENCED IN DRAWING:

- ① CABLES SHALL BE FIELD CUT TO LENGTH, STRIPPED, AND FIT. BRACE WIRES TO MAINTAIN 65K AIC RATING. PROVIDE 6 SETS 535 MCM TYPE K STRANDED CABLE PER PHASE WITH COMPRESSION LUG CONNECTORS.

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DRAWN M. YARBROUGH
CHECKED M. FRISCH
APPROVED M. FISHER

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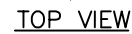
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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

ELECTRICAL
ATS AND DISTRIBUTION
ONE-LINE AND ELEVATION

DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD00-E-002
SHEET NUMBER 124



GENERAL NOTES

1. TYPE 1 ENCLOSURE WITH CUSTOM RAIN SHIELD AND REAR ACCESS PANEL.
FREE STANDING, FORMED FRAME CONSTRUCTION.
2. NEC STANDARD GAUGE PAN TYPE DOOR WITH LOCKABLE HANDLE.
3. FINISH: ANSI 61 GRAY, POLYESTER POWDER STANDARD. OTHER ANSI
COLORS AVAILABLE CONSULT FACTORY UL RECOGNIZED.
4. CONSTRUCTION IS IN ACCORDANCE WITH APPLICABLE REQUIREMENTS
OF UL 1008.
5. RECOMMENDED CLEARANCES: FRONT: 48 INCHES REAR: 36 INCHES
A 20% RATED GROUND BUS IS PROVIDED.
7. UNIT IS DESIGNED FOR COMBINATION TOP AND BOTTOM CABLE ENTRY.
THE STANDARD SWITCHING CONFIGURATION IS FOR TOP LUGS EMERGENCY
AND LOAD AND BOTTOM LUGS NORMAL OPERATION. THE SWITCH MAY
BE SUPPLIED WITH REVERSE NORMAL & EMERGENCY LUGS. (REFER TO
THE WIRING DIAGRAM FURNISHED WITH EACH TRANSFER SWITCH TO
DETERMINE TERMINATION POSITIONS).
8. NEUTRAL CONFIGURATIONS:
AN OPTIONAL FULL RATED NEUTRAL CONFIGURATION FOR EACH
SOURCE AND THE LOAD MAY BE PROVIDED. WHEN EQUIPPED
IT IS IN ONE OF THE FOLLOWING FORMATS AS SPECIFIED BY THE
CATALOG NUMBER NO. NEUTRAL TYPE:
(A) SOLID (COPPER BUS) NEUTRAL
(B) SWITCHED NEUTRAL POLE
(C) OVERLAPPING NEUTRAL POLE (NOT AVAILABLE ON ACTS/ADTS UNITS)

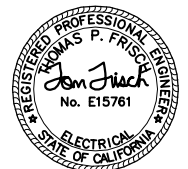
TERMINATIONS

1. ALL SIZES SUPPLIED STANDARD WITH MECHANICAL (SCREW TYPE) LUGS. (SEE AMP SIZE BELOW)
 - A. LUG MATERIAL: ALUMINUM ALLOY 8061-T6 WITH ELECTRO TIN PLATED FINISH.
 - B. SCREW MATERIAL: ALUMINUM ALLOY 6262-T9 WITH ELECTRO TIN PLATED FINISH.
 - C. UL LISTED, CSA CERTIFIED.
 - D. LUG SCREW TIGHTENING TORQUE PER UL 486B: 19 FT-LBS.
 - E. SUITABLE WIRE BENDING SPACE IS PROVIDED. (SEE AMP SIZE BELOW)
2. OPTIONAL COPPER CRIMP LUGS MAY BE SUPPLIED. (SEE AMP SIZE BELOW)
 - A. LUG MATERIAL: HIGH CONDUCTIVITY WROUGHT COPPER FINISH, ELECTRO TIN PLATED.
 - B. UL LISTED, CSA CERTIFIED.
 - C. LUG MOUNTING HARDWARE TIGHTENING TORQUE: (REFER TO WITHSTAND CURRENT RATING LABEL PROVIDED ON EACH TRANSFER SWITCH).
 - D. SUITABLE WIRE BENDING SPACE IS PROVIDED. (SEE AMP SIZE BELOW)
3. CONSULT FACTORY FOR OTHER TERMINATION REQUIREMENTS.
4. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS. (SEE AMP SIZE BELOW).
5. CUSTOMER TERMINAL BLOCKS:
 - FOR ALL 7000 SERIES UNITS THE TB WILL BE MOUNTED ON THE UPPER RIGHT INSIDE OF ENCLOSURE.
 - FOR 4000 SERIES UNITS TB WILL BE MOUNTED ON THE TRANSFER SWITCH FRAME AS INDICATED.

CABLING NOTES 2600-3000 AMPS

1. SUPPLIED WITH STANDARD MECHANICAL (SCREW TYPE) LUGS ON THE NORMAL, EMERGENCY & LOAD BUS STABS. TWO (2) LUG PER PHASE AND NEUTRAL EACH SUITABLE FOR CONNECTION OF TWELVE (12) 1/0 - 750MCM CU/AL CABLE (SEE NOTE "E" BELOW).
 - A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO TWELVE (12) 750MCM CABLES PER TERMINAL PER TABLE 373-6(a) OF NFPA 70 OF THE NEC.
2. OPTIONAL COPPER CRIMP LUGS MAY BE SUPPLIED. UP TO EIGHT (8) TWO HOLE, LONG BARREL CU CRIMP LUGS RATED FOR UP TO 600MCM. (REFER TO CRIMP LUG INSTALLATION DATA PROVIDED WITH UNIT FOR FULL INSTALLATION DETAILS).
 - A. SUITABLE WIRE BENDING SPACE IS PROVIDED FOR UP TO EIGHT (8) 600MCM CABLES PER TERMINAL PER TABLE 373-6(b) OF NFPA 70 OF THE NEC.
3. GROUND LUGS ARE PROVIDED STANDARD AS FOLLOWS;
(36) 1/0 - 750MCM CU/AL CABLE

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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

ELECTRICAL
AUTOMATIC TRANSFER
SWITCH DETAIL

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD00-E-003
SHEET NUMBER	125

PANEL "LP-A"							120/208 VOLTS, 3 PHASE, 4 WIRE			
LOCATION: PUMP BUILDING							200 AMP BUS			
ENCLOSURE: SURFACE							200 AMP MAIN BREAKER			
AIC RATING: 22 KAIC										
BKR NO.	DESCRIPTION	LOAD VA	PHASE AMPS			AMPS/ POLE	BKR NO.			
1	LIGHTING - PUMP ROOM	420	A	B	C	20/1	1			
3	RECEPT - PUMP ROOM	1500		12.5		20/1*	3			
5	LIGHTING - CHEM & ELECTRICAL ROOM	420			3.5	20/1	5			
7	RECEPT - ELECTRICAL ROOM	750	6.3			20/1	7			
9	LIGHTING - AREA POLES	420		3.5		20/1	9			
11	RECEPT - SITE	1500			12.5	20/1*	11			
13	EXHAUST FAN - CHEMICAL AREA	1500	12.5			20/1	13			
15	RECEPT - OUTDOOR	1200		10.0		20/1	15			
17	LIGHTING OUTDOOR WALL	500			4.2	20/1	17			
19	RESIDUAL CHLORINE ANALYZER-STORAGE	350	2.9			20/1	19			
21	RESIDUAL CHLORINE ANALYZER-DIST	350		2.9		20/1	21			
23	SCADA TERMINAL	500			4.2	20/1	23			
25	SAMPLE PUMP	850	7.1			20/1	25			
27	TANK 1 LIT-151 HEATER	700		5.8		20/1	27			
29	TANK 2 LIT-251 HEATER	700			5.8	20/1	29			
31	TANK 1 DAVIT CRANE	1350	11.3			20/1	31			
33	FRONT GATE	1200		10.0		20/1	33			
35	TANK 2 DAVIT CRANE	1350			11.3	20/1	35			
37	SPACE	0	0.0			20/1	37			
39	SPACE	0		0.0		20/1	39			
41	SPACE	0			0.0	20/1	41			

BKR NO.	AMPS/ POLE	PHASE A	AMPS B	PHASE C	LOAD VA	DESCRIPTION	BKR NO.
2	20/1	5.0			600	CONTROL PANEL	2
4	20/1		10.0		1200	CONTROL PANEL - MISC	4
6	20/1			12.5	1500	SWITCHBOARD - 120V POWER	6
8	20/1	0.0			0	SPARE	8
10	20/1		10.4		1250	CHEMICAL PUMP 1 VFD	10
12	20/1			10.4	1250	CHEMICAL PUMP 2 VFD	12
14	20/1 * 0.0				0	SPARE	14
16	20/1		8.3		1000	COMMUNICATIONS PANEL	16
18	40/2			20.8	2500	GENERATOR HEATER	18
20		20.8			2500		20
22	20/1		10.0		1200	GENERATOR BATTERY CHARGER	22
24	20/1			7.5	900	ELECTRICAL ROOM COOLING FANS	24
26	20/1	0.0			0	SPARE	26
28	20/1		0.0		0	SPARE	28
30	20/1			0.0	0	SPARE	30
32	30/3	0.0			0	SPARE	32
34			0.0		0		34
36				0.0	0		36
38	100/3	0.0			0	MAIN	38
40			0.0		0		40
42				0.0	0		42

PHASE			A			B			C			PHASE		
LEFT SIDE AMPS			43.5	44.8		41.4		RIGHT SIDE AMPS						
LEFT SIDE KVA			5.22	5.37		4.97		RIGHT SIDE KVA						
TOTAL PHASE KVA			8.32	10.02		11.12		TOTAL KVA						
TOTAL PHASE AMPS			69.3	83.5		92.7		TOTAL AMPS @ 208V, 3P						
% OF AVERAGE			85	102		113		DEMAND FACTOR						
									LOAD KVA					
									29.46					
									81.77					
									0.80					
									23.57					

NEUTRAL

GROUND

29.46

81.77

0.80

23.57

TOTAL KVA

TOTAL AMPS @ 208V, 3P

DEMAND FACTOR

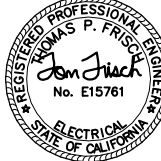
LOAD KVA

NOTES: 1 MEANS OF WIRE COLOR CODING SHALL BE POSTED ON PANELBOARD PER NEC 210 (4)
2 ASTERISK (*) DENOTES GFI BREAKER REQUIRED WITH 5 MA SENSITIVITY
3 TILDA (~) DENOTES GFI BREAKER REQUIRED WITH 30 MA SENSITIVITY

LOAD CALCULATIONS										
LOAD DESCRIPTION		CONNECTED LOAD			DEMAND LOAD			GENERATOR LOAD		
		LOAD	QTY	TOTAL	LOAD	QTY	TOTAL	LOAD	QTY	TOTAL
250HP PUMP		302.00	A 5	1255390.4 VA	302.00	A 4	1004312.3 VA	302.00	A 4	1004312.3 VA
126kW WATER HEATER		151.00	A 1	125539.0 VA	151.00	A 1	125539.0 VA	151.00	A 1	125539.0 VA
56KW HVAC SYSTEM		68.00	A 1	56534.1 VA	68.00	A 1	56534.1 VA	68.00	A 1	56534.1 VA
PANELBOARD LP	120/208	35.43	A 1	29460.0 VA	28.35	A 1	23568.0 VA	28.35	A 1	23568.0 VA
PANELBOARD PP	277/480	72.17	A 1	60000.0 VA	57.74	A 1	48000.0 VA	57.74	A 1	48000.0 VA
TOTAL LOAD =		1836.60	A <	1526923.6 VA	1513.08	A <	1257953.5 VA	1513.08	A <	1257953.5 VA
LOAD CORRECTION FACTORS				GENERATOR SIZE						
LARGEST MOTOR LOAD x 25%				NAMEPLATE = 1500 KW 1875 KVA						
250HP HP => 0.25 x	251078.1 VA	=	75.50 A	62769.5 VA	75.50 A	62769.5 VA	TEMP OF 100 deg F			
80% BREAKER DERATING =	TOTAL x 0.25 =	478.03 A	397423.3 VA	397.15 A	330180.8 VA	ELEVATION OF 200 FT ASL				
FOR CONTINUOUS LOADS NEC 210-20				DERATED SIZE = 1465.5 KW 1831.9 KVA						
SERVICE SIZE (MIN)		=	2390.13 A	1987116.4VA	1985.73 A	1650903.8VA	AMPERAGE = 2203 A @ 0.8 PF			
UTILITY SERVICE SIZE REQUIRED =		2500 AMP					UTILIZATION % = 77 % @ 0.90 PF			
480V, 3 PHASE, 4 WIRE										

FIXTURE SCHEDULE						
CODE LETTER	FIXTURE TYPE	FIXTURE LAMPS	WATTS/FIXTURE	MANUFACTURER OR APPROVED EQUAL	MOUNTING ARRANGEMENT	NOTES
A	STRIP LUMINAIRE, 4 FT, VAPORTIGHT MOLDED POLYCARBONATE HOUSING FROSTED LENS, MEDIUM DISTRIBUTION	6000 LUMEN 4500K	120V 50W	ATLAS ILW48LED40 RAB SEAL4-50/D10	CEILING MOUNT FIXTURE	U.L. LISTED -20F TO 140F
B	WALL PACK LIGHT DARK BRONZE COLOR ALUMINUM CASE	4000 LUMEN 4000K	120V 37W	ATLAS WSPS40LED RAB SLIM FC	WALL MOUNT 10 FT AFF	U.L. LISTED FOR WET LOCATIONS PHOTOCELL CONTROL FULL CUTOFF
E	EXIT LIGHT PACK WITH EGRESS LAMPS AND REMOTE OUTDOOR EGRESS FIXTURE LED LAMPS WITH RED LED SIGN INTEGRAL BATTERY AND CHARGER	2 LED 3W	120V 5W	DUAL-LITE HCX-U-R-W-03L-RC12 CPRSB0603L	WALL MOUNT 9 FT AFF	WHITE INTERIOR, BROWN EXTERIOR DUAL LED LAMPS INDOORS AND OUT 12W REMOTE LIGHT CAPACITY
P	POLE MOUNTED CUTOFF LUMINAIRE 4" SQUARE STEEL POLE BRONZE POLE AND LAMP HMF DISTRIBUTION	LED 40K COLOR 18992 LM	MVOLT 183W	LITHONIA D-SERIES SIZE 3	MOUNT ON POLE BASE PER DETAILS	POLE HEIGHT 20 FT OR AS SHOWN ON PLANS PHOTOCELL CONTROL

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11-14-2019

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WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

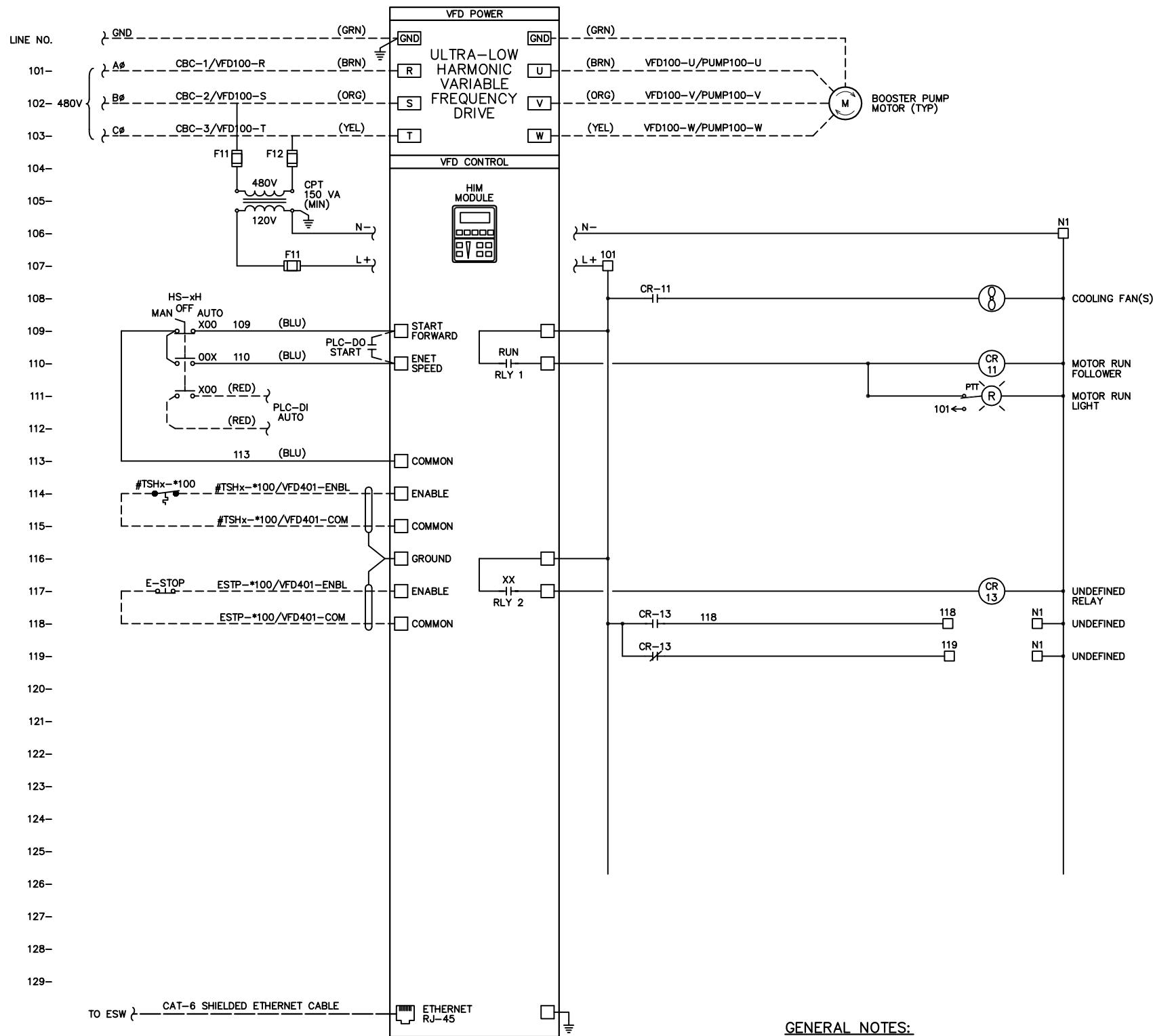
ELECTRICAL
PANEL SCHEDULES,
LOAD CALCULATIONS
AND FIXTURE SCHEDULE

DATE
NOVEMBER 2019

PROJECT NUMBER
17-083

DRAWING NUMBER
WD00-E-004

SHEET NUMBER 126

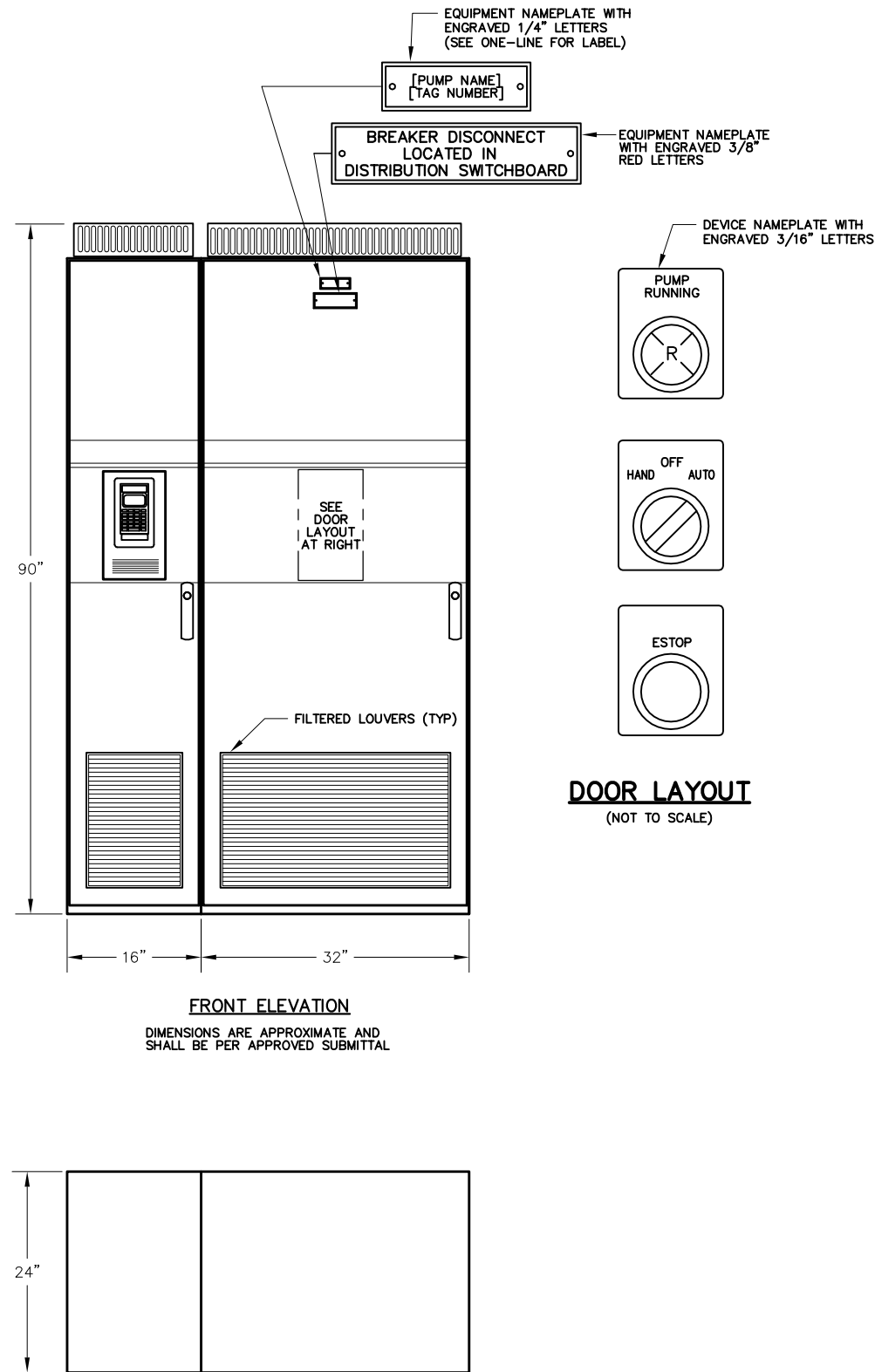


VFD PUMP MOTOR ELEMENTARY DIAGRAM

WD24-VFDx*100 WD24-VFDx*300

GENERAL NOTES:

1. TERMINAL BLOCKS AND WIRES SHALL BE LABELED SAME EXCEPT: WIRES TO PLC SHALL BE NUMBERED PER CONTROL PANEL TERMINAL BLOCK NUMBER.
2. DOOR LAYOUT IS DIAGRAMMATICAL AND IS INTENDED TO SHOW DEVICES REQUIRED. ACTUAL LAYOUT SHALL BE SUBMITTED FOR APPROVAL AND MAY DIFFER FROM THAT SHOWN ABOVE.
2. SIMILAR DIAGRAM FOR BOOSTER PUMPS 3
3. USE 3, 30 & 300 SERIES NUMBERING FOR PUMP NO. 3 DEVICES



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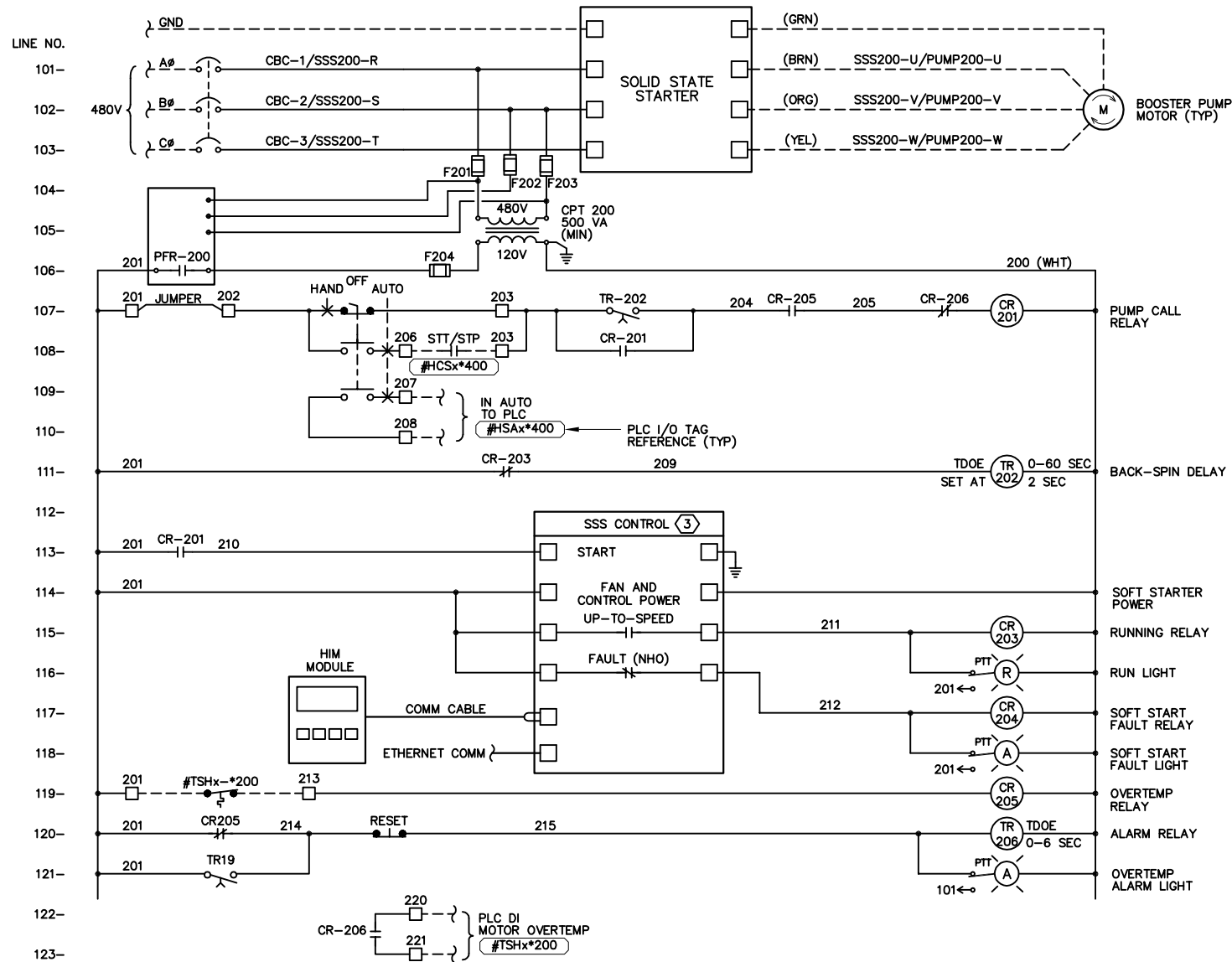
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WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

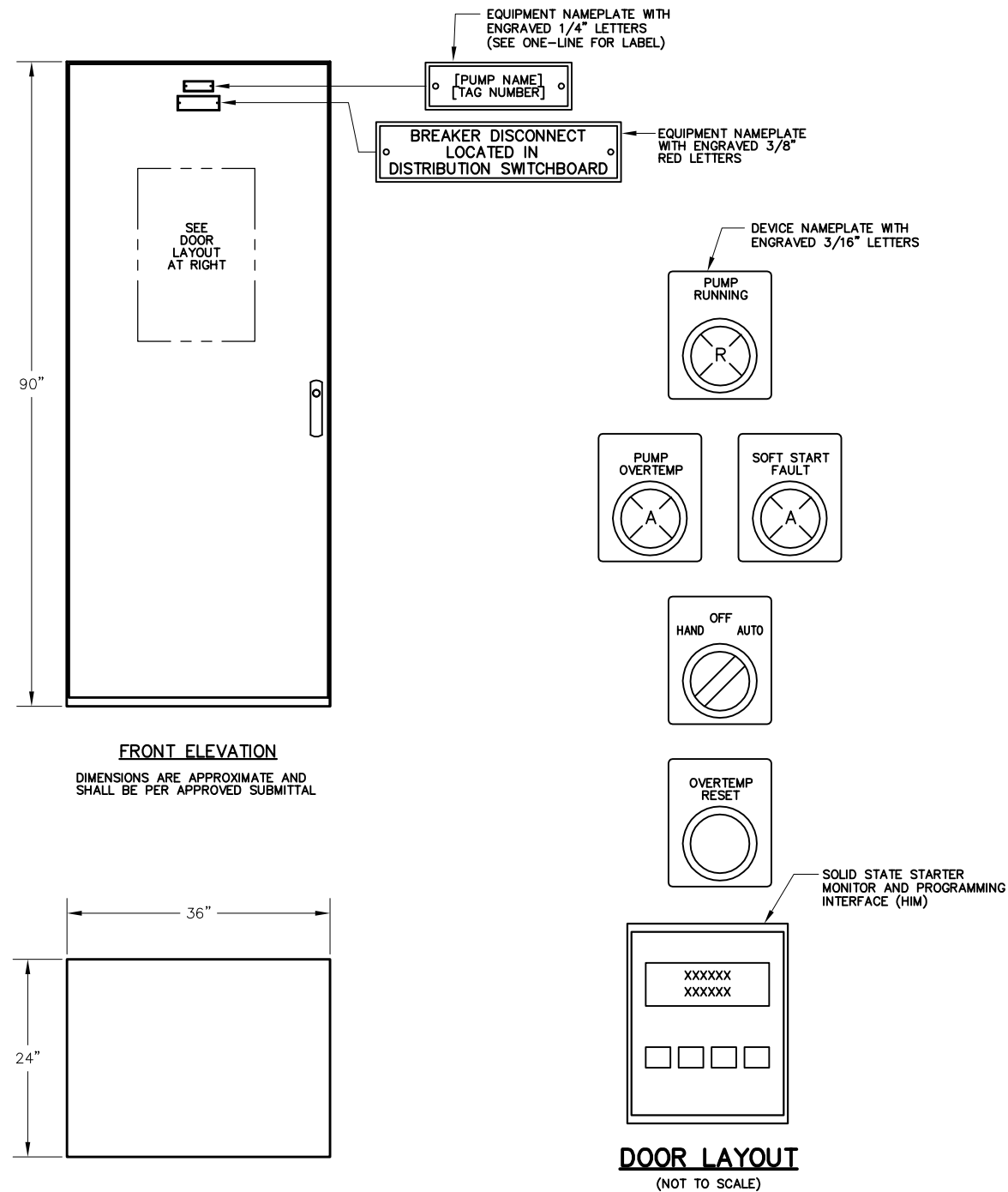
ELECTRICAL
VFD PUMP MOTOR
ELEMENTARY DIAGRAM

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD00-E-005
SHEET NUMBER	127



SSS PUMP MOTOR ELEMENTARY DIAGRAM

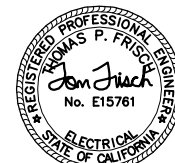
WD24-SSSx*200 WD24-SSSx*400 WD24-VFDx*500



GENERAL NOTES:

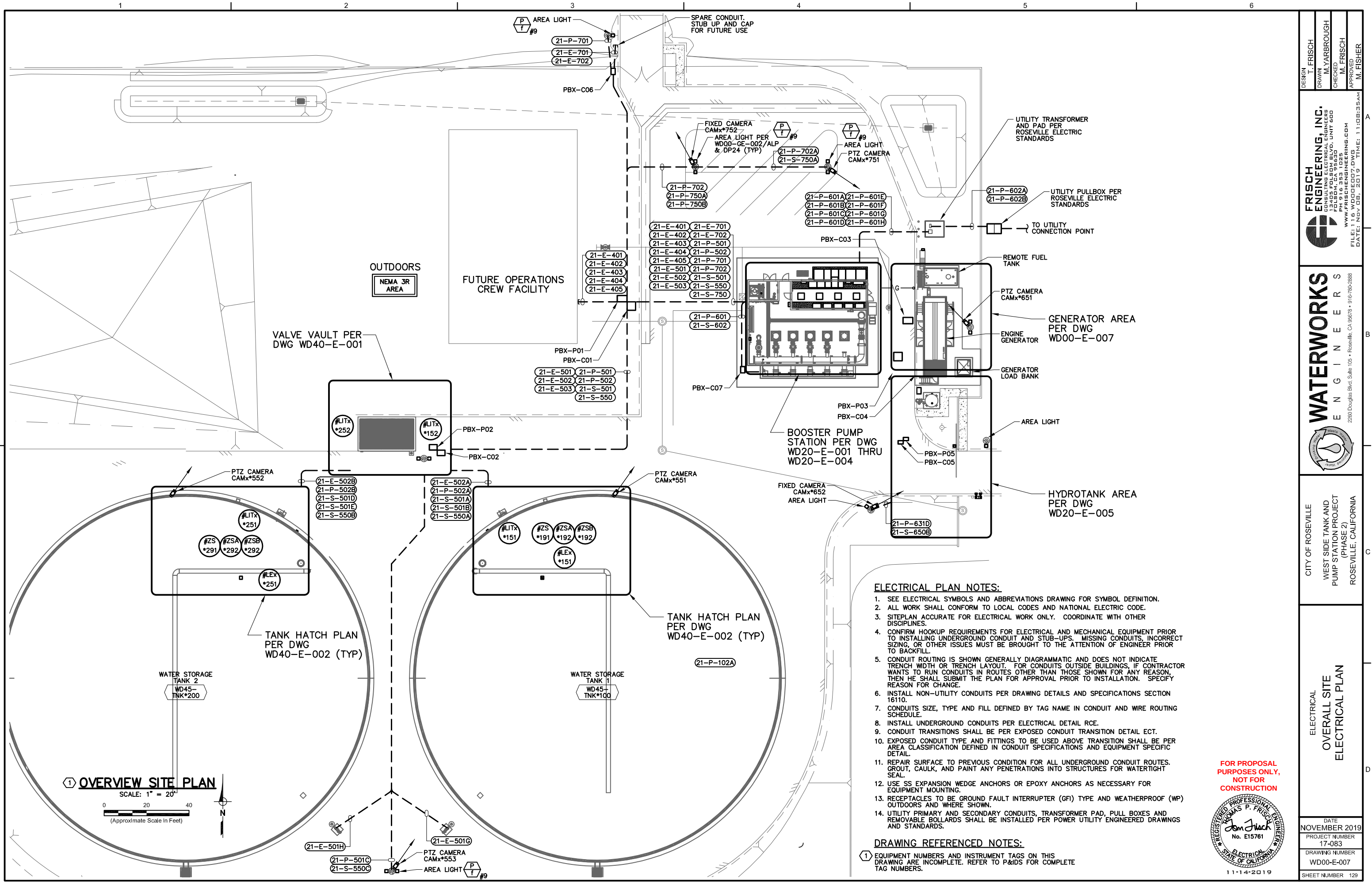
1. TERMINAL BLOCKS AND WIRES SHALL BE LABELED SAME. EXCEPTION: WIRES TO PLC SHALL BE NUMBERED PER CONTROL PANEL TERMINAL BLOCK NUMBER.
2. DOOR LAYOUT IS DIAGRAMMATICAL AND IS INTENDED TO SHOW DEVICES REQUIRED. ACTUAL LAYOUT SHALL BE SUBMITTED FOR APPROVAL AND MAY DIFFER FROM THAT SHOWN ABOVE.
2. SIMILAR DIAGRAM FOR BOOSTER PUMPS 4 & 5
3. USE 4, 40 & 400 SERIES NUMBERING FOR PUMP NO. 4 DEVICES
USE 5, 50 & 500 SERIES NUMBERING FOR PUMP NO. 5 DEVICES

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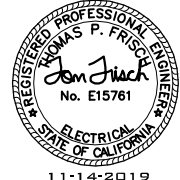
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APPROVED	M. FISHER
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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	
ELECTRICAL SSS PUMP MOTOR ELEMENTARY DIAGRAM	
DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD00-E-006
SHEET NUMBER	128



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CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA		
ELECTRICAL OVERALL SITE ELECTRICAL PLAN		
DATE NOVEMBER 2019		
PROJECT NUMBER 17-083		
DRAWING NUMBER WD00-E-007		
SHEET NUMBER 129		

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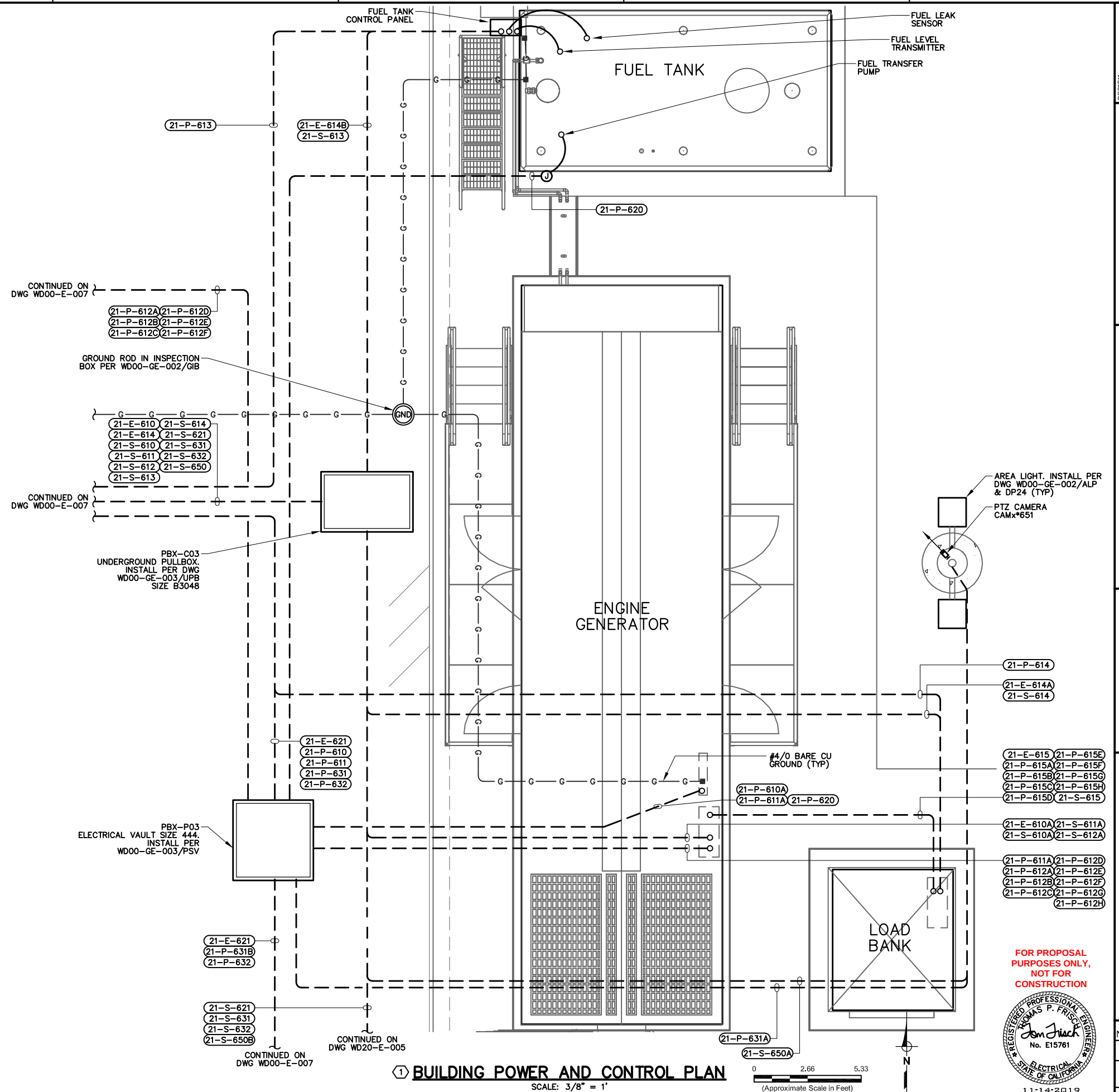


11-14-2019

1. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
2. ALL WORK SHALL CONFORM TO LOCAL CODES AND NATIONAL ELECTRIC CODE.
3. SITEPLAN ACCURATE FOR ELECTRICAL WORK ONLY. COORDINATE WITH OTHER DISCIPLINES.
4. CONFIRM HOOKUP REQUIREMENTS FOR ELECTRICAL AND MECHANICAL EQUIPMENT PRIOR TO INSTALLING UNDERGROUND CONDUIT AND STUB-UPS. MISSING CONDUITS, INCORRECT SIZING, OR OTHER ISSUES MUST BE BROUGHT TO THE ATTENTION OF ENGINEER PRIOR TO BACKFILL.
5. CONDUIT ROUTING IS SHOWN GENERALLY DIAGRAMMATIC AND DOES NOT INDICATE TRENCH WIDTH OR TRENCH LAYOUT. FOR CONDUITS OUTSIDE BUILDINGS, IF CONTRACTOR WANTS TO RUN CONDUITS IN ROUTES OTHER THAN THOSE SHOWN FOR ANY REASON, THEN HE SHALL SUBMIT THE PLAN FOR APPROVAL PRIOR TO INSTALLATION. SPECIFY REASON FOR CHANGE.
6. INSTALL NON-UTILITY CONDUITS PER DRAWING DETAILS AND SPECIFICATIONS SECTION 16110.
7. CONDUITS SIZE, TYPE AND FILL DEFINED BY TAG NAME IN CONDUIT AND WIRE ROUTING SCHEDULE.
8. INSTALL UNDERGROUND CONDUITS PER ELECTRICAL DETAIL RCE.
9. CONDUIT TRANSITIONS SHALL BE PER EXPOSED CONDUIT TRANSITION DETAIL ECT.
10. EXPOSED CONDUIT TYPE AND FITTINGS TO BE USED ABOVE TRANSITION SHALL BE PER AREA CLASSIFICATION DEFINED IN CONDUIT SPECIFICATIONS AND EQUIPMENT SPECIFIC DETAIL.
11. REPAIR SURFACE TO PREVIOUS CONDITION FOR ALL UNDERGROUND CONDUIT ROUTES. GROUT, CAULK, AND PAINT ANY PENETRATIONS INTO STRUCTURES FOR WATERTIGHT SEAL.
12. USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
13. RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) OUTDOORS AND WHERE SHOWN.

1 EQUIPMENT NUMBERS AND INSTRUMENT TAGS ON THIS DRAWING ARE INCOMPLETE. REFER TO P&IDS FOR COMPLETE TAG NUMBERS.

2 ALL TYPE A FIXTURES TO BE MOUNTED AT 10 FEET AFF (TYPICAL).



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CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

ELECTRICAL
GENERATOR AREA
ELECTRICAL PLAN

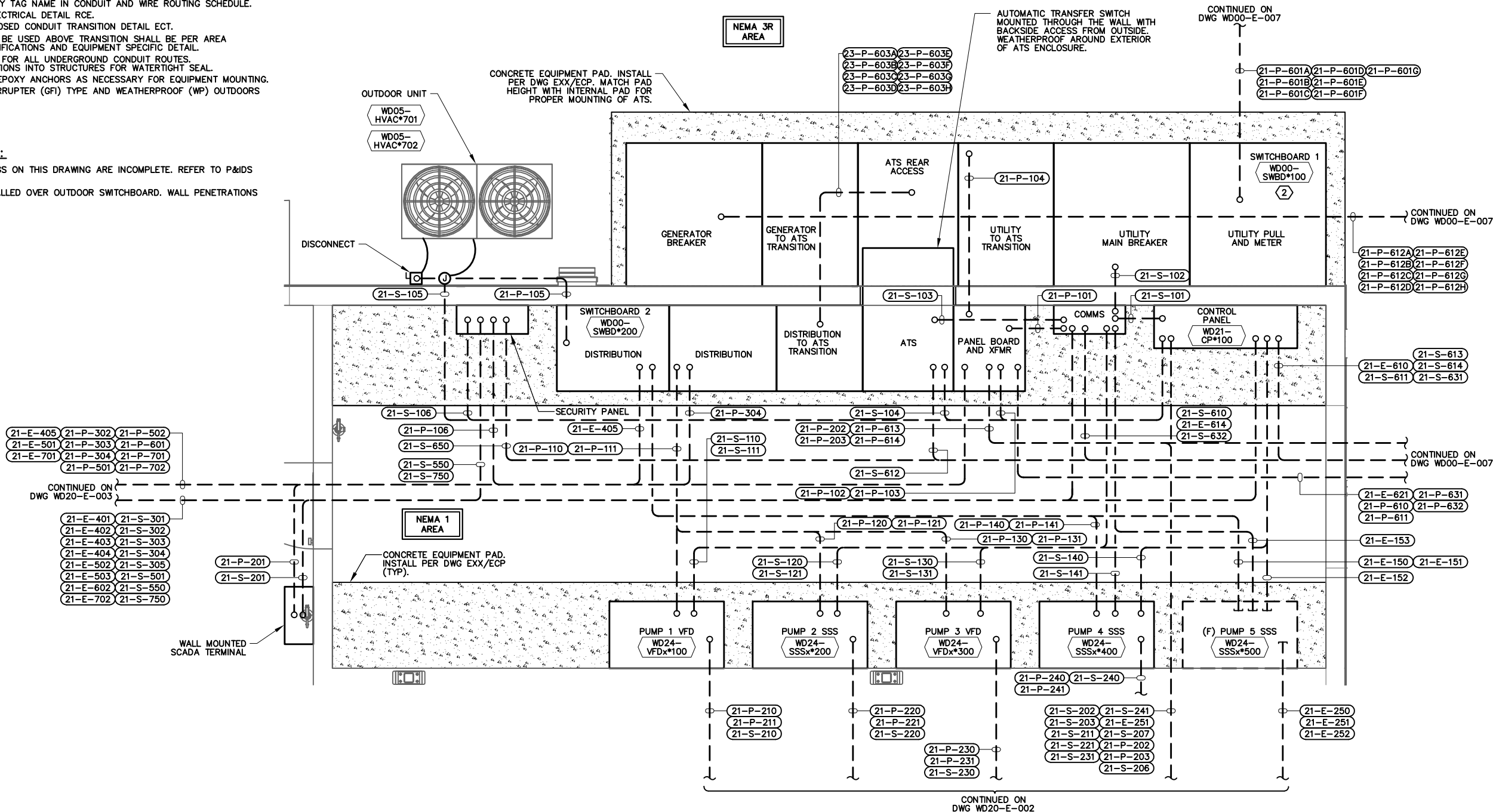
DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD00-E-008
SHEET NUMBER	130

ELECTRICAL PLAN NOTES:

1. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
2. ALL WORK SHALL CONFORM TO LOCAL CODES AND NATIONAL ELECTRIC CODE.
3. SITEPLAN ACCURATE FOR ELECTRICAL WORK ONLY. COORDINATE WITH OTHER DISCIPLINES.
4. CONFIRM HOOKUP REQUIREMENTS FOR ELECTRICAL AND MECHANICAL EQUIPMENT PRIOR TO INSTALLING UNDERGROUND CONDUIT AND STUB-UPS. MISSING CONDUITS, INCORRECT SIZING, OR OTHER ISSUES MUST BE BROUGHT TO THE ATTENTION OF ENGINEER PRIOR TO BACKFILL.
5. CONDUIT ROUTING IS SHOWN GENERALLY DIAGRAMMATIC AND DOES NOT INDICATE TRENCH WIDTH OR TRENCH LAYOUT. FOR CONDUITS OUTSIDE BUILDINGS, IF CONTRACTOR WANTS TO RUN CONDUITS IN ROUTES OTHER THAN THOSE SHOWN FOR ANY REASON, THEN HE SHALL SUBMIT THE PLAN FOR APPROVAL PRIOR TO INSTALLATION. SPECIFY REASON FOR CHANGE.
6. INSTALL NON-UTILITY CONDUITS PER DRAWING DETAILS AND SPECIFICATIONS SECTION 16110.
7. CONDUITS SIZE, TYPE AND FILL DEFINED BY TAG NAME IN CONDUIT AND WIRE ROUTING SCHEDULE.
8. INSTALL UNDERGROUND CONDUITS PER ELECTRICAL DETAIL RCE.
9. CONDUIT TRANSITIONS SHALL BE PER EXPOSED CONDUIT TRANSITION DETAIL ECT.
10. EXPOSED CONDUIT TYPE AND FITTINGS TO BE USED ABOVE TRANSITION SHALL BE PER AREA CLASSIFICATION DEFINED IN CONDUIT SPECIFICATIONS AND EQUIPMENT SPECIFIC DETAIL.
11. REPAIR SURFACE TO PREVIOUS CONDITION FOR ALL UNDERGROUND CONDUIT ROUTES. GROUT, CAULK, AND PAINT ANY PENETRATIONS INTO STRUCTURES FOR WATERTIGHT SEAL.
12. USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
13. RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) OUTDOORS AND WHERE SHOWN.

DRAWING REFERENCED NOTES:

- 1 EQUIPMENT NUMBERS AND INSTRUMENT TAGS ON THIS DRAWING ARE INCOMPLETE. REFER TO P&IDS FOR COMPLETE TAG NUMBERS.
- 2 CUSTOM FLANGE OR HOOD SHALL BE INSTALLED OVER OUTDOOR SWITCHBOARD. WALL PENETRATIONS SHALL BE WATERPROOF.

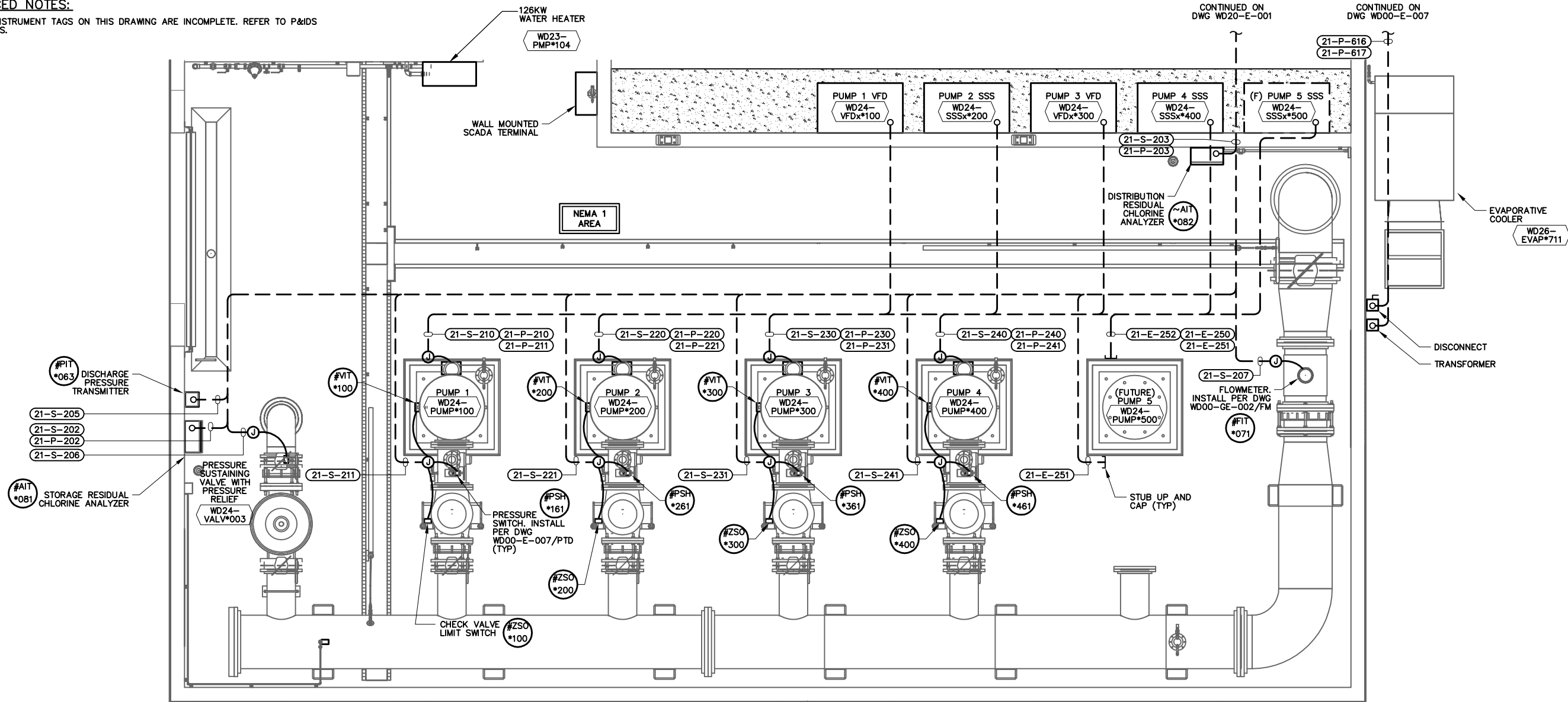


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① PUMP ROOM POWER AND CONTROL PLAN

SCALE: 3/8" = 1'

0 2.66 5.33
(Approximate Scale in Feet)



FOR PROPOSAL
PURPOSES ONLY,
NOT FOR
CONSTRUCTION



11-14-2019

DESIGN	T. FRISCH
DRAWN	M. YARBROUGH
CHECKED	M. FRISCH
APPROVED	M. FISHER

FRISCH ENGINEERING, INC.
13405 FOLESON BLVD., UNIT 600
FOLSOM, CA 95630
WWW.FRISCHENGINEERING.COM
FILE: 120 WD20E001.DWG
DATE: NOV 08, 2019 TIME: 11:13:07AM



CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

ELECTRICAL
PUMP ROOM POWER
AND CONTROL PLAN

DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD20-E-002
SHEET NUMBER	132

ELECTRICAL PLAN NOTES:

1. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
2. ALL WORK SHALL CONFORM TO LOCAL CODES AND NATIONAL ELECTRIC CODE.
3. SITEPLAN ACCURATE FOR ELECTRICAL WORK ONLY. COORDINATE WITH OTHER DISCIPLINES.
4. CONFIRM HOOKUP REQUIREMENTS FOR ELECTRICAL AND MECHANICAL EQUIPMENT PRIOR TO INSTALLING UNDERGROUND CONDUIT AND STUB-UPS. MISSING CONDUITS, INCORRECT SIZING, OR OTHER ISSUES MUST BE BROUGHT TO THE ATTENTION OF ENGINEER PRIOR TO BACKFILL.
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7. CONDUITS SIZE, TYPE AND FILL DEFINED BY TAG NAME IN CONDUIT AND WIRE ROUTING SCHEDULE.
8. INSTALL UNDERGROUND CONDUITS PER ELECTRICAL DETAIL RCE.
9. CONDUIT TRANSITIONS SHALL BE PER EXPOSED CONDUIT TRANSITION DETAIL ECT.
10. EXPOSED CONDUIT TYPE AND FITTINGS TO BE USED ABOVE TRANSITION SHALL BE PER AREA CLASSIFICATION DEFINED IN CONDUIT SPECIFICATIONS AND EQUIPMENT SPECIFIC DETAIL.
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12. USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
13. RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) OUTDOORS AND WHERE SHOWN.

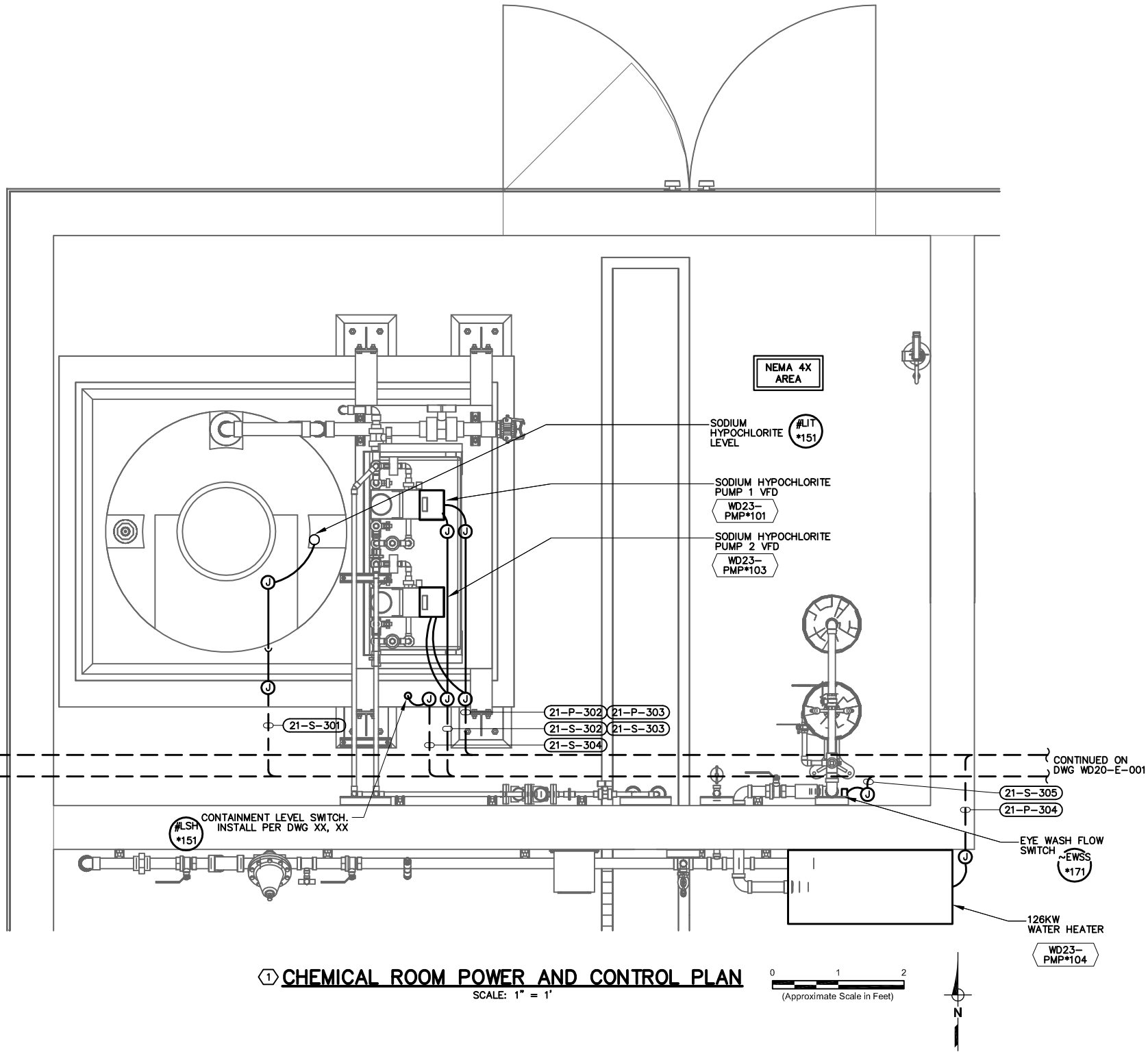
DRAWING REFERENCED NOTES:

- ① EQUIPMENT NUMBERS AND INSTRUMENT TAGS ON THIS DRAWING ARE INCOMPLETE. REFER TO P&IDS FOR COMPLETE TAG NUMBERS.

21-E-405 21-P-502
21-E-501 21-P-601
21-E-701 21-P-701
21-P-501 21-P-702

CONTINUED ON
DWG WD00-E-007

21-E-401 21-E-503
21-E-402 21-E-602
21-E-403 21-E-702
21-E-404 21-S-501
21-E-502 21-S-550
21-S-750



① CHEMICAL ROOM POWER AND CONTROL PLAN
SCALE: 1" = 1'

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PURPOSES ONLY,
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CONSTRUCTION



11-14-2019

DESIGN: T. FRISCH
DRAWN: M. YARBROUGH
CHECKED: M. FRISCH
APPROVED: M. FISHER

FRISCH ENGINEERING, INC.
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FILE: 120 WD20E001.DWG
DATE: NOV 08, 2019 TIME: 11:13:19AM

WATERWORKS
ENGINEERS
2260 Douglas Blvd., Suite 105 • Roseville, CA 95678 • 916-790-2688

CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

ELECTRICAL
CHEMICAL ROOM POWER
AND CONTROL PLAN

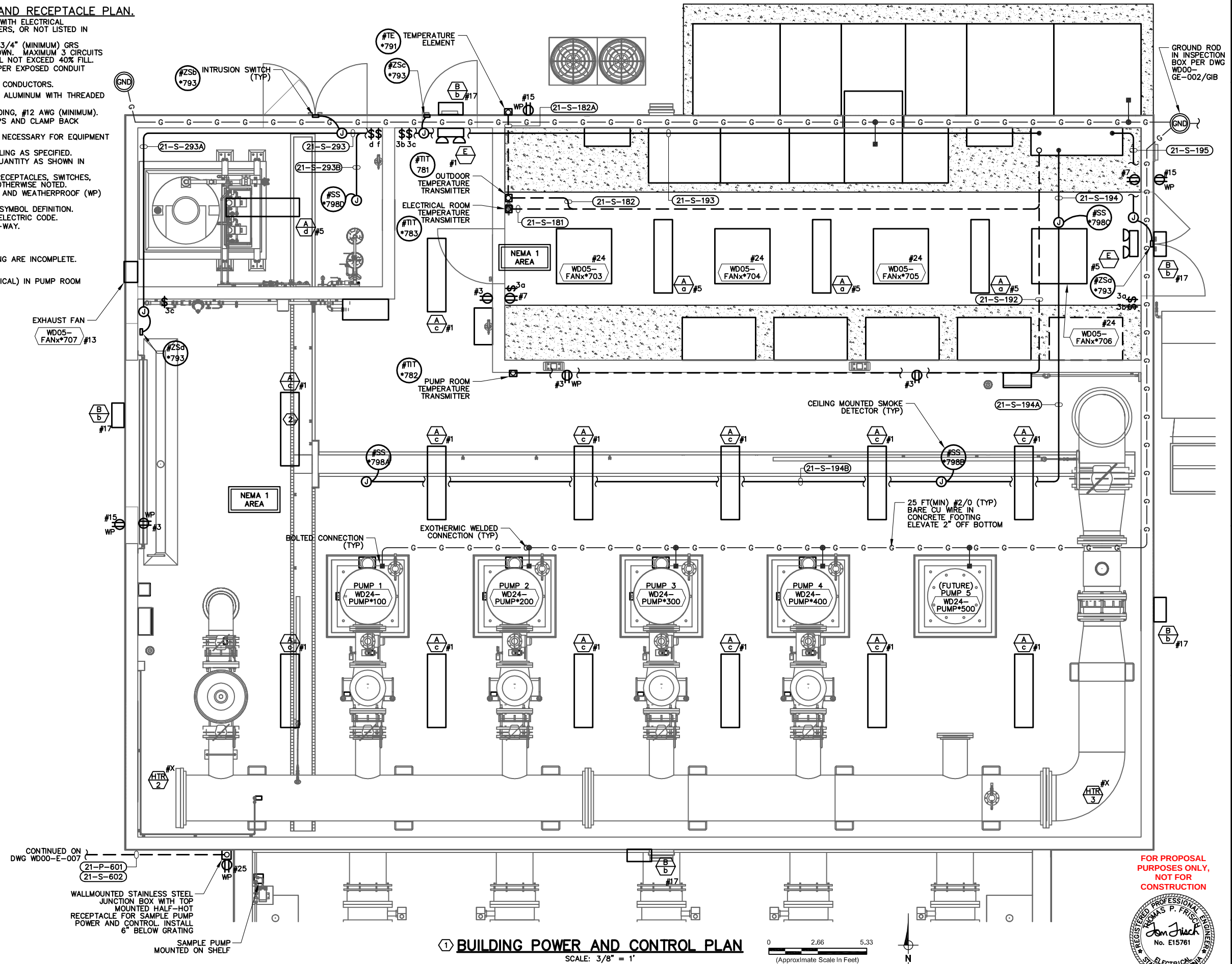
DATE
NOVEMBER 2019
PROJECT NUMBER
17-083
DRAWING NUMBER
WD20-E-003
SHEET NUMBER 133

GENERAL NOTES THAT APPLY TO LIGHTING AND RECEPTACLE PLAN.

1. THESE NOTES SHALL APPLY TO ALL EQUIPMENT OR FIXTURES WITH ELECTRICAL CONNECTIONS BUT WITHOUT CONDUITS SHOWN, CONDUIT NUMBERS, OR NOT LISTED IN SCHEDULE.
2. PROVIDE AND INSTALL NECESSARY WIRES IN SURFACE MOUNT 3/4" (MINIMUM) GRS CONDUIT FOR FOR ELECTRICAL FIXTURE ARRANGEMENT AS SHOWN. MAXIMUM 3 CIRCUITS PER CONDUIT SECTION OVER 24" IN LENGTH. CONDUITS SHALL NOT EXCEED 40% FILL.
3. CONDUITS UNDER SLAB SHALL BE PVC-40 WITH STUB-OUTS PER EXPOSED CONDUIT TRANSITION DETAIL.
4. ACCESS TO ATTIC AREA SHALL NOT BE REQUIRED TO INSTALL CONDUCTORS.
5. DEVICE BOXES AND CONDUIT BODIES SHALL BE CAST IRON OR ALUMINUM WITH THREADED HUB.
6. CONDUCTORS SHALL BE COPPER TYPE THHN, CLASS C STRANDING, #12 AWG (MINIMUM).
7. MOUNT CONDUITS USING SINGLE BOLT GALVANIZED PIPE STRAPS AND CLAMP BACK SPACERS.
8. USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
9. EXPOSED CONDUIT SHALL BE PAINTED WITH WALL AND/OR CEILING AS SPECIFIED.
10. PROVIDE AND INSTALL FIXTURES PER SCHEDULE THIS PAGE, QUANTITY AS SHOWN IN DRAWINGS.
11. PROVIDE AND INSTALL ALL DEVICE BOXES, JUNCTION BOXES, RECEPTACLES, SWITCHES, AND COVERS MOUNT ALL RECEPTACLES AT 48" AFF UNLESS OTHERWISE NOTED.
12. RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) WHERE SHOWN.
13. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
14. ALL WORK SHALL CONFORM TO LOCAL CODES AND NATIONAL ELECTRIC CODE.
15. SWITCH TYPE: T= TIME SWITCH, M= MOTION DETECTOR, 3= 3-WAY.

DRAWING REFERENCED NOTES:

1. EQUIPMENT NUMBERS AND INSTRUMENT TAGS ON THIS DRAWING ARE INCOMPLETE. REFER TO P&IDS FOR COMPLETE TAG NUMBERS.
2. ALL TYPE A FIXTURES TO BE MOUNTED AT 10 FEET AFF (TYPICAL) IN PUMP ROOM AND ON CEILING IN ELECTRICAL AND CHEMICAL ROOMS.



1 BUILDING POWER AND CONTROL PLAN
SCALE: 3/8" = 1'

0 2.66 5.33
(Approximate Scale in Feet)



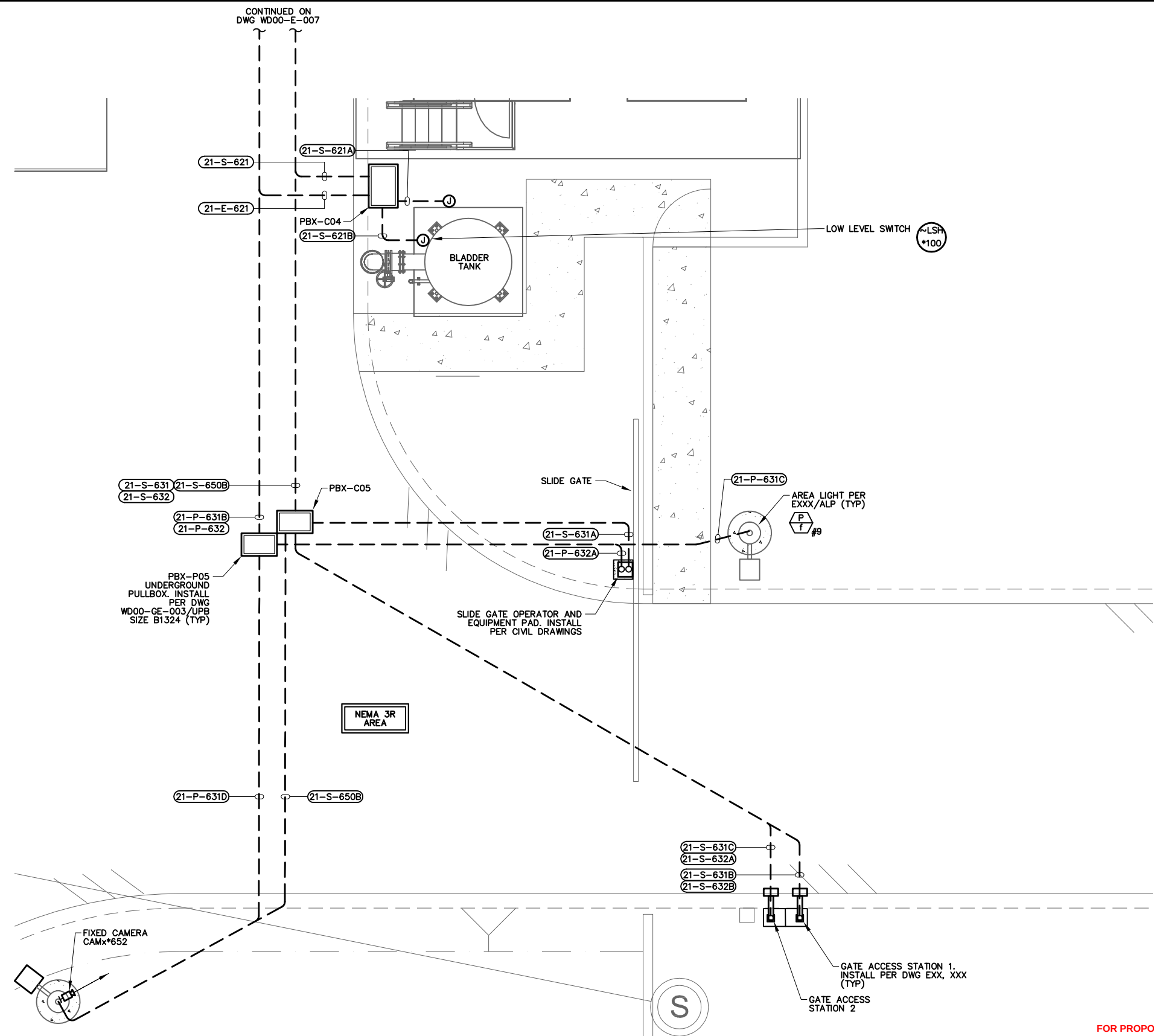
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DESIGN T. FRISCH	FRISCH ENGINEERING, INC. 13405 FOLEY BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM DATE: NOV 08, 2019 TIME: 11:31:32AM	CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	ELECTRICAL BUILDING LIGHTING AND RECEPTACLE PLAN	DATE NOVEMBER 2019
DRAWN M. YARBROUGH	CHECKED M. FRISCH			APPROVED M. FISHER
SHEET NUMBER 134				

1. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
2. ALL WORK SHALL CONFORM TO LOCAL CODES AND NATIONAL ELECTRIC CODE.
3. SITEPLAN ACCURATE FOR ELECTRICAL WORK ONLY. COORDINATE WITH OTHER DISCIPLINES.
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13. RECEPTABLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) OUTDOORS AND WHERE SHOWN.

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0 2.66 5.33
(Approximate Scale in Feet)



11-14-2019

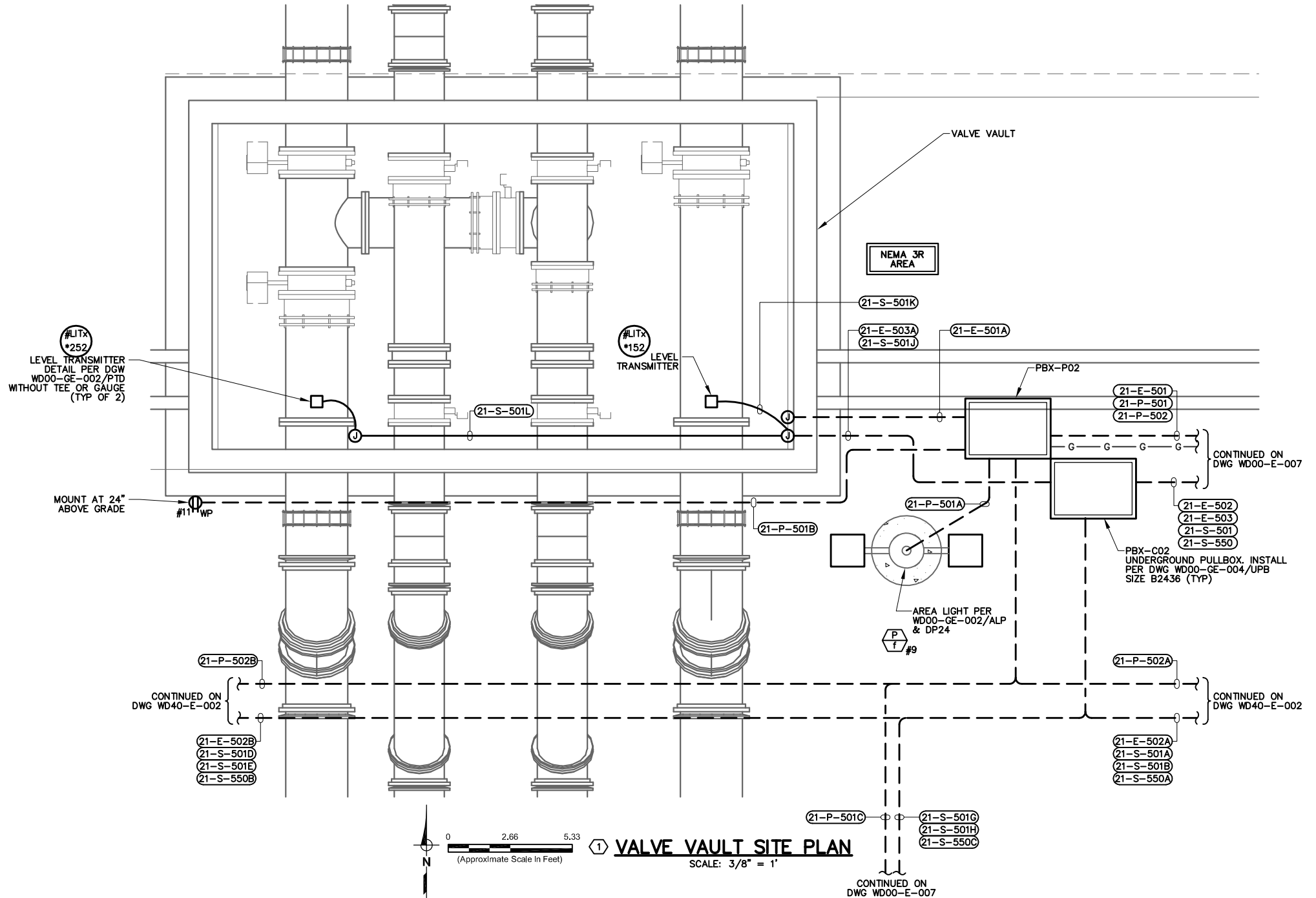
ELECTRICAL		DATE: NOVEMBER 2019	
BLADDER TANK AREA		PROJECT NUMBER: 17-083	
ELECTRICAL PLAN		DRAWING NUMBER: WD20-E-005	
SHEET NUMBER: 135			

ELECTRICAL PLAN NOTES:

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11-14-2019

DESIGN	T. FRISCH
DRAWN	M. YARBROUGH
CHECKED	M. FRISCH
APPROVED	M. FISHER

FRISCH ENGINEERING, INC.
13405 FOLEY BLVD., UNIT 600
FOLSOM, CA 95630
WWW.FRISCHENGINEERING.COM
FILE: 121 WD40E001.DWG
DATE: NOV 08, 2019 TIME: 11:14:13AM



CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

ELECTRICAL
TANK AREA VALVE VAULT
ELECTRICAL PLAN

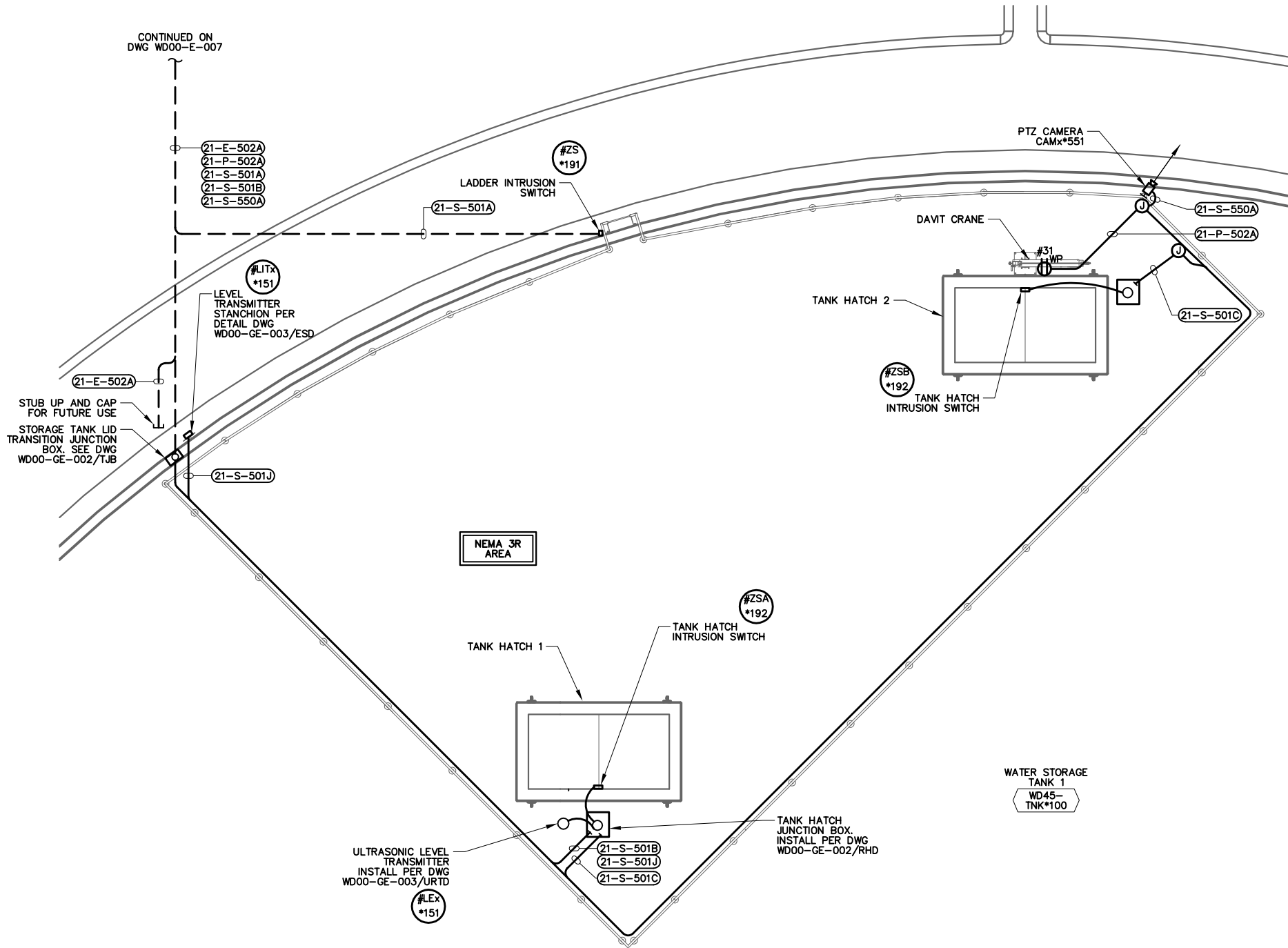
DATE	NOVEMBER 2019
PROJECT NUMBER	17-083
DRAWING NUMBER	WD40-E-001
SHEET NUMBER	136

ELECTRICAL PLAN NOTES:

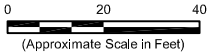
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- 2 CONDUITS AND EQUIPMENT MOUNTED TO TANK WALL SHALL BE PER DETAIL 15010A IN ORDER TO AVOID PRESTRESS STRANDS. SEE CIVIL DETAILS.



1 STORAGE TANK 1 HATCH PLAN
SCALE: 1" = 20'
(SIMILAR FOR TANK 2 HATCH PLAN)



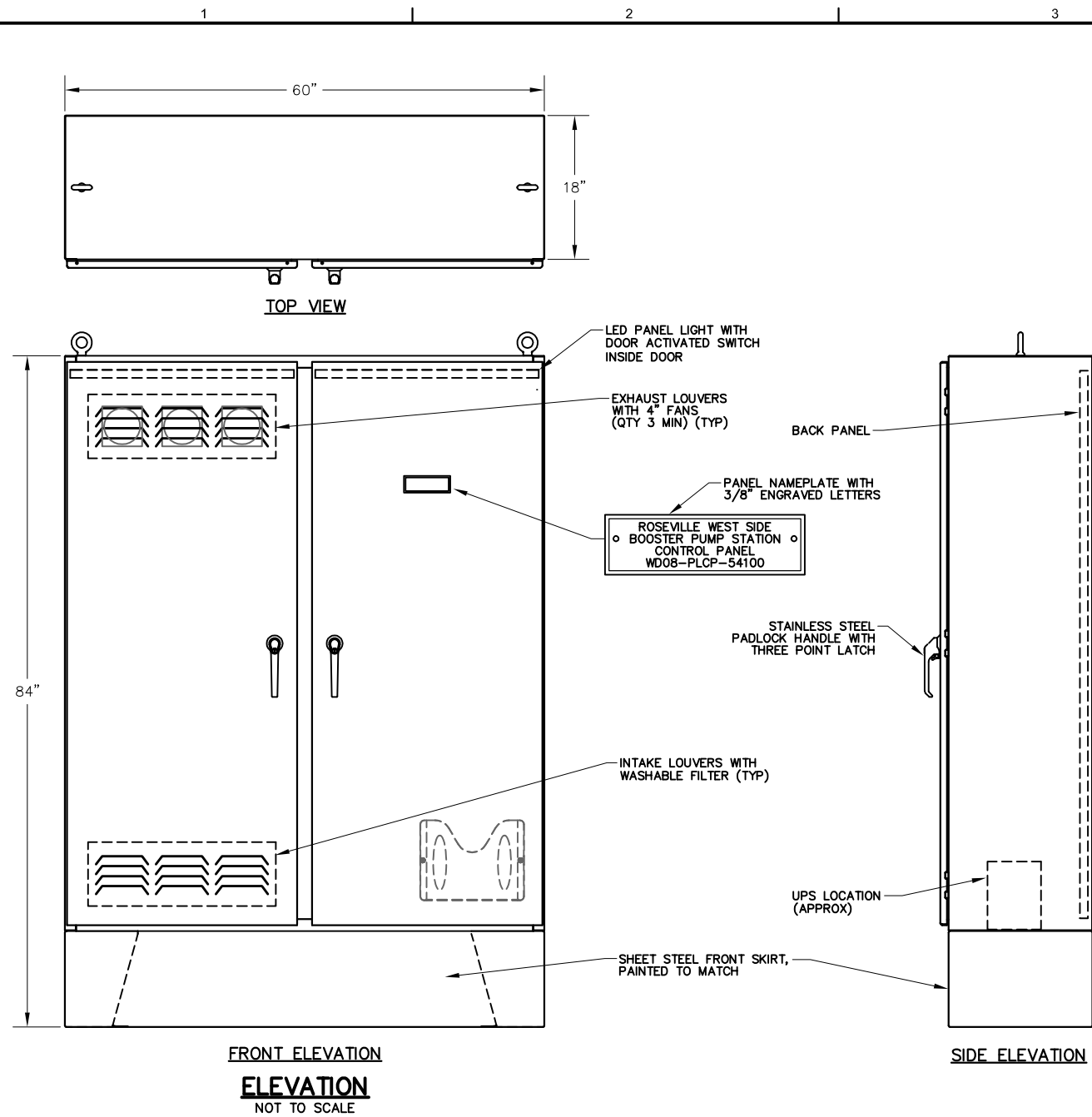
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11-14-2019

CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA		ELECTRICAL STORAGE TANK TOP (TYPICAL) ELECTRICAL PLAN		DATE NOVEMBER 2019	
				PROJECT NUMBER 17-083	
				DRAWING NUMBER WD40-E-002	
				SHEET NUMBER 137	

	WATERWORKS ENGINEERING			FRISCH ENGINEERING, INC. CONSULTING ELECTRICAL ENGINEERS 13405 FOLESON BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM	
	2269 Douglas Blvd, Suite 105 • Roseville, CA 95678 • 916-760-2888			FILE: 1 21 WD40E001.DWG	
				DATE: NOV 08, 2019 TIME: 11:14:21 AM	
		DESIGN T. FRISCH	DRAWN M. YARBROUGH	CHECKED M. FRISCH	APPROVED M. FISHER



PANEL FABRICATION METHODS

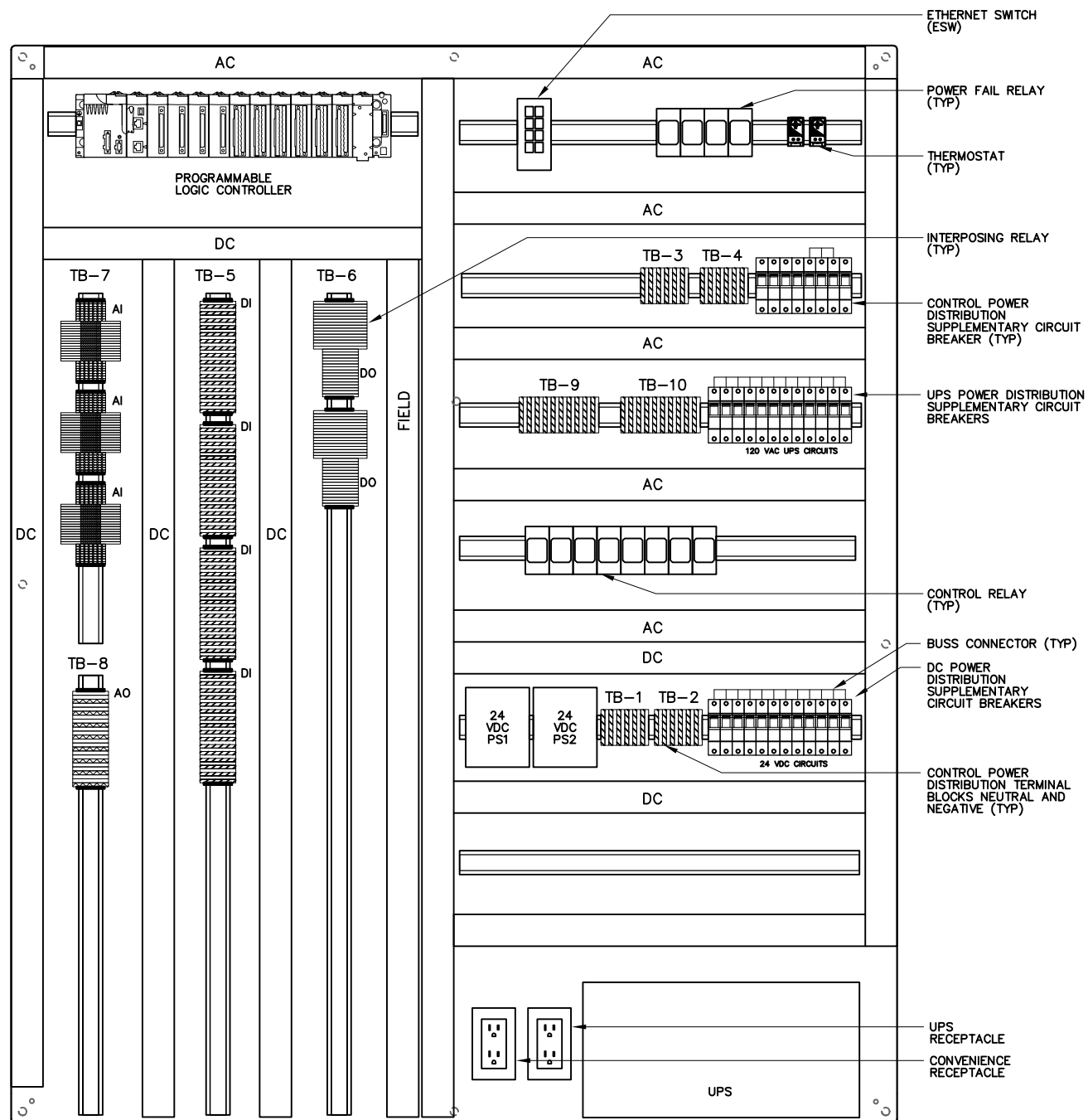
1. NEMA 12.
2. OUTER DOOR SEALED WITH RUBBERIZED FOAM GASKET.
3. PANEL SHALL BE FABRICATED FROM PAINT BOND GALVANEAL SHEET STEEL.
4. 12 GAUGE EXTERIOR AND 14 GAUGE INTERIOR.
5. ALL SEAMS SHALL HAVE CONTINUOUS WELD GROUND SMOOTH.
6. DOOR TO BE PADLOCKABLE WITH HEAVY DUTY 3 POINT LATCH.
7. DOOR HINGES AND PINS SHALL BE CONTINUOUS, HEAVY DUTY.
8. NO SCREWS, RIVETS, OR BOLTS SHALL PROTRUDE EXTERNALLY.
9. INTERNAL SCREWS, RIVETS, BOLTS, AND NUTS SHALL BE MACHINE THREAD INTO TAPPED BACKPAN.
10. EXTERIOR PANEL COLOR: ANSI 61 GRAY.
11. MOUNTING PAN AND INTERIOR DOOR COLOR: WHITE.
12. FABRICATION AND WIRING SHALL CONFORM TO U.L. AND NEMA STANDARDS.
13. ALL WIRING SHALL BE PERMANENTLY LABELED WITH WIRE MARKERS ON BOTH ENDS.
14. WIRING DIAGRAMS SHALL BE PLACED IN A PLASTIC DRAWING HOLDER PERMANENTLY ATTACHED TO THE INSIDE OF THE FRONT DOOR.
15. AS - BUILT WIRING DIAGRAMS SHALL BE SHIPPED WITH EQUIPMENT.
16. SAGINAW ENVIROLINE TYPE 12 FLOOR MOUNT, OR EQUAL.

GENERAL NOTES:

1. REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ACTUAL BACKPAN LAYOUT SHALL BE SIMILAR TO LAYOUT SHOWN. SUBMIT SCALED BACKPAN LAYOUT FOR REVIEW BY ENGINEER.
2. QUANTITY OF TERMINAL BLOCKS AND RELAYS SHALL BE AS DETERMINED BY P&IDS AND EXAMPLE I/O WIRING DIAGRAM

LAYOUT REFERENCED NOTES:

- ① WIRE I/O TO TERMINAL BLOCK PER EXAMPLE I/O WIRING DIAGRAMS.



BACKPAN LAYOUT ①

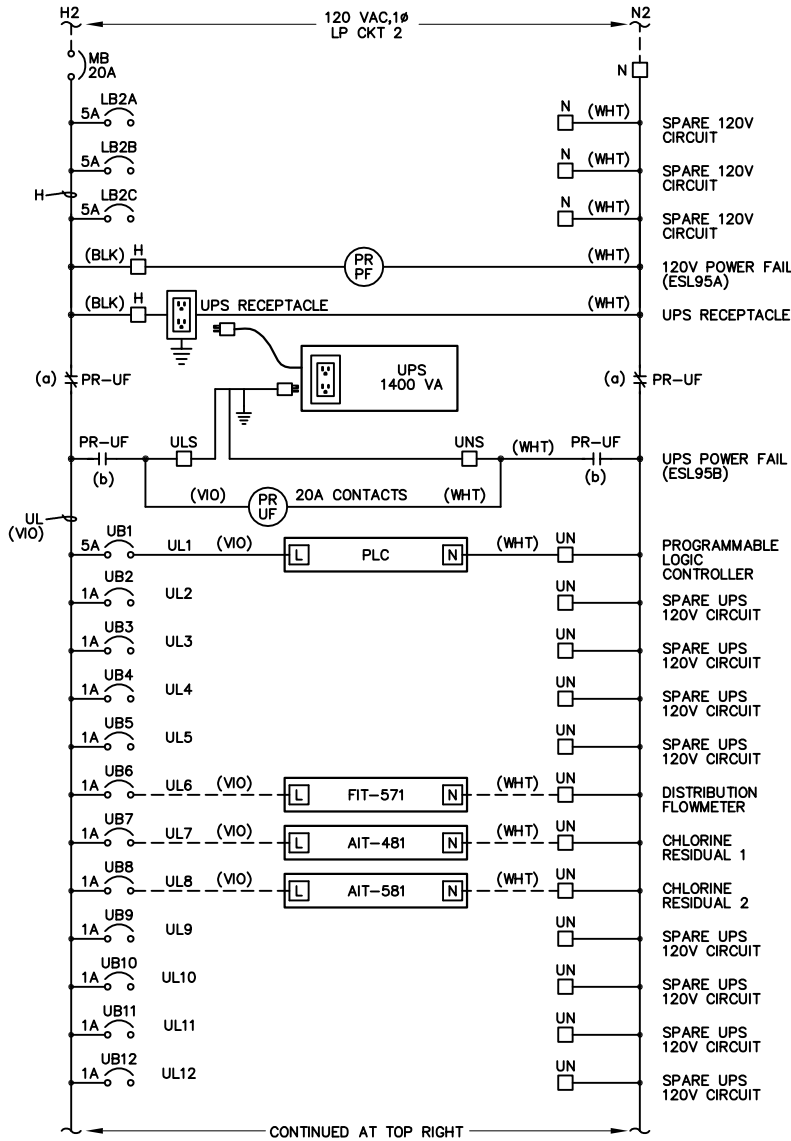
NOT TO SCALE

FOR PROPOSAL
PURPOSES ONLY,
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CONSTRUCTION

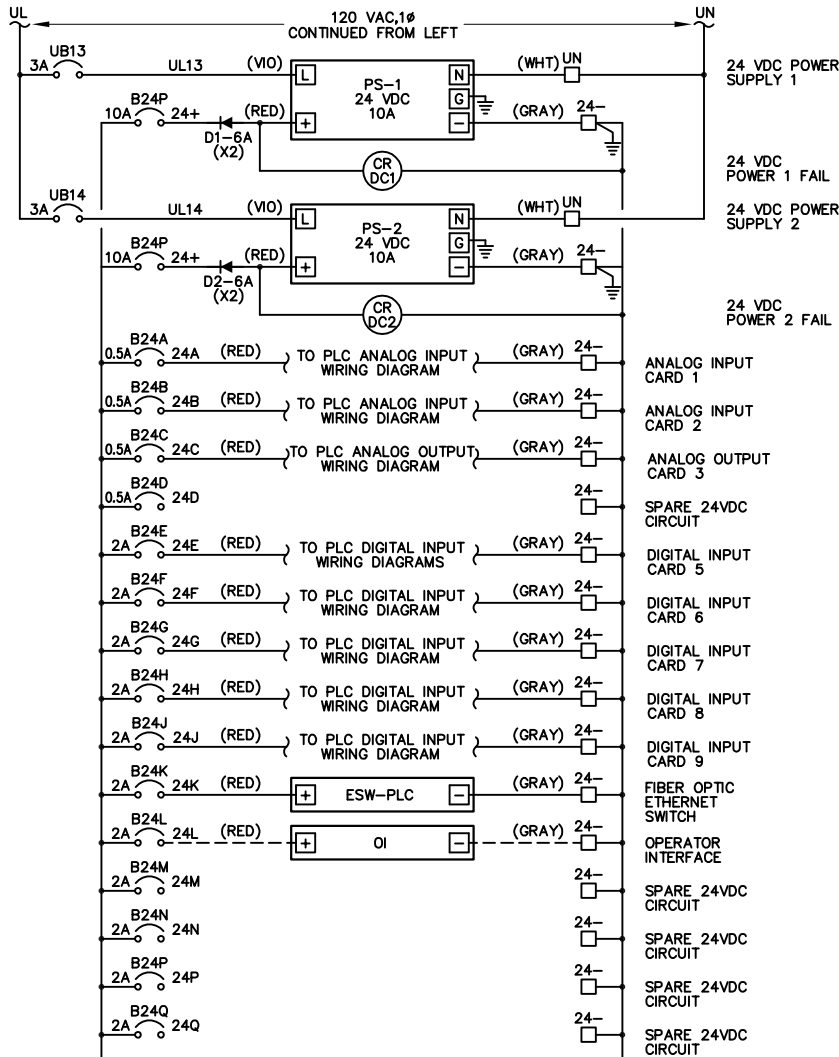


11-14-2019

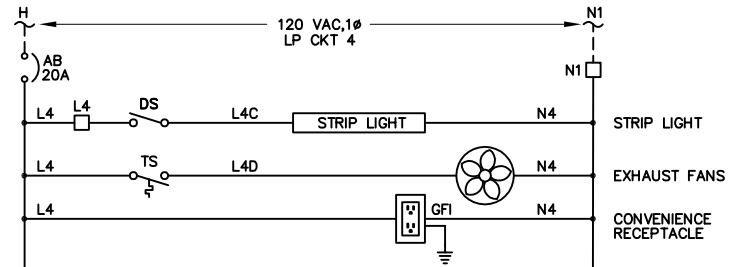
DESIGN T. FRISCH	FRISCH ENGINEERING, INC. 13405 FOLESON BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 130 WD201001.DWG DATE: NOV 08, 2019 TIME: 11:15:12AM	
DRAWN M. YARBROUGH		
CHECKED M. FRISCH		
APPROVED M. FISHER		
	WATERWORKS ENGINEERS 2260 Douglas Blvd. Suite 105 • Roseville, CA 95678 • 916-790-2688	
	CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	
	ELECTRICAL CONTROL PANEL ELEVATION AND BACKPAN LAYOUT	
	DATE NOVEMBER 2019	
	PROJECT NUMBER 17-083	
	DRAWING NUMBER WD20-1-001	
	SHEET NUMBER 138	



POWER DISTRIBUTION DIAGRAM

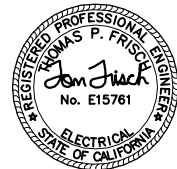


POWER DISTRIBUTION DIAGRAM - CONTINUED



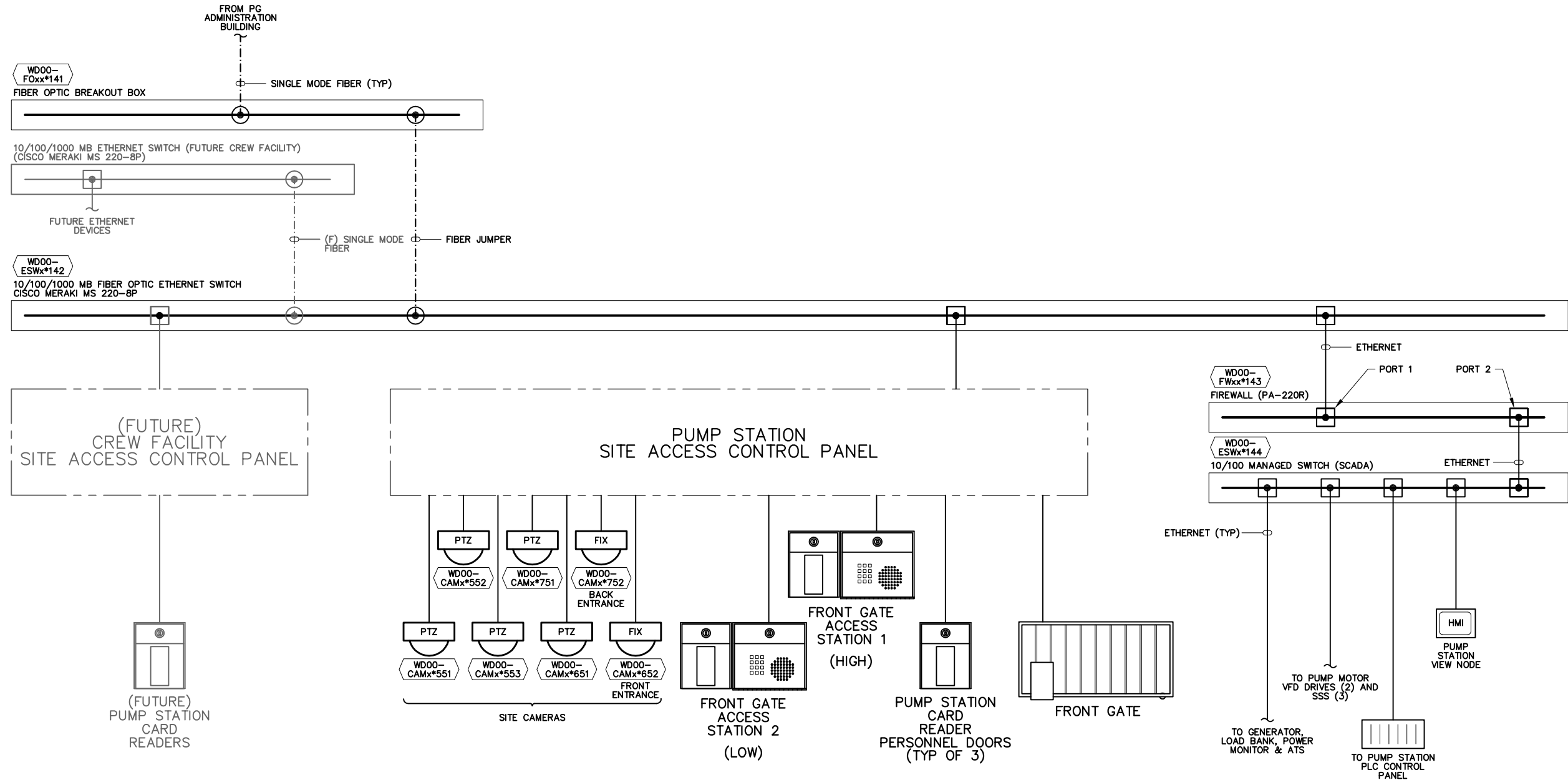
AUXILLIARY POWER DIAGRAM

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NOT FOR
CONSTRUCTION



11-14-2019

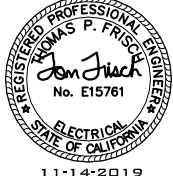
DESIGN T. FRISCH	FRISCH ENGINEERING, INC. 13405 FOLESBY BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 131 WD201002.DWG DATE: NOV 08, 2019 TIME: 11:15:23AM
DRAWN M. YARBROUGH	WATERWORKS ENGINEERS 2260 Douglas Blvd. Suite 105 • Roseville, CA 95678 • 916-790-2688
CHECKED M. FRISCH	
APPROVED M. FISHER	
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	
ELECTRICAL CONTROL PANEL POWER DISTRIBUTION DIAGRAMS	
DATE NOVEMBER 2019	
PROJECT NUMBER 17-083	
DRAWING NUMBER WD20-I-002	
SHEET NUMBER 139	



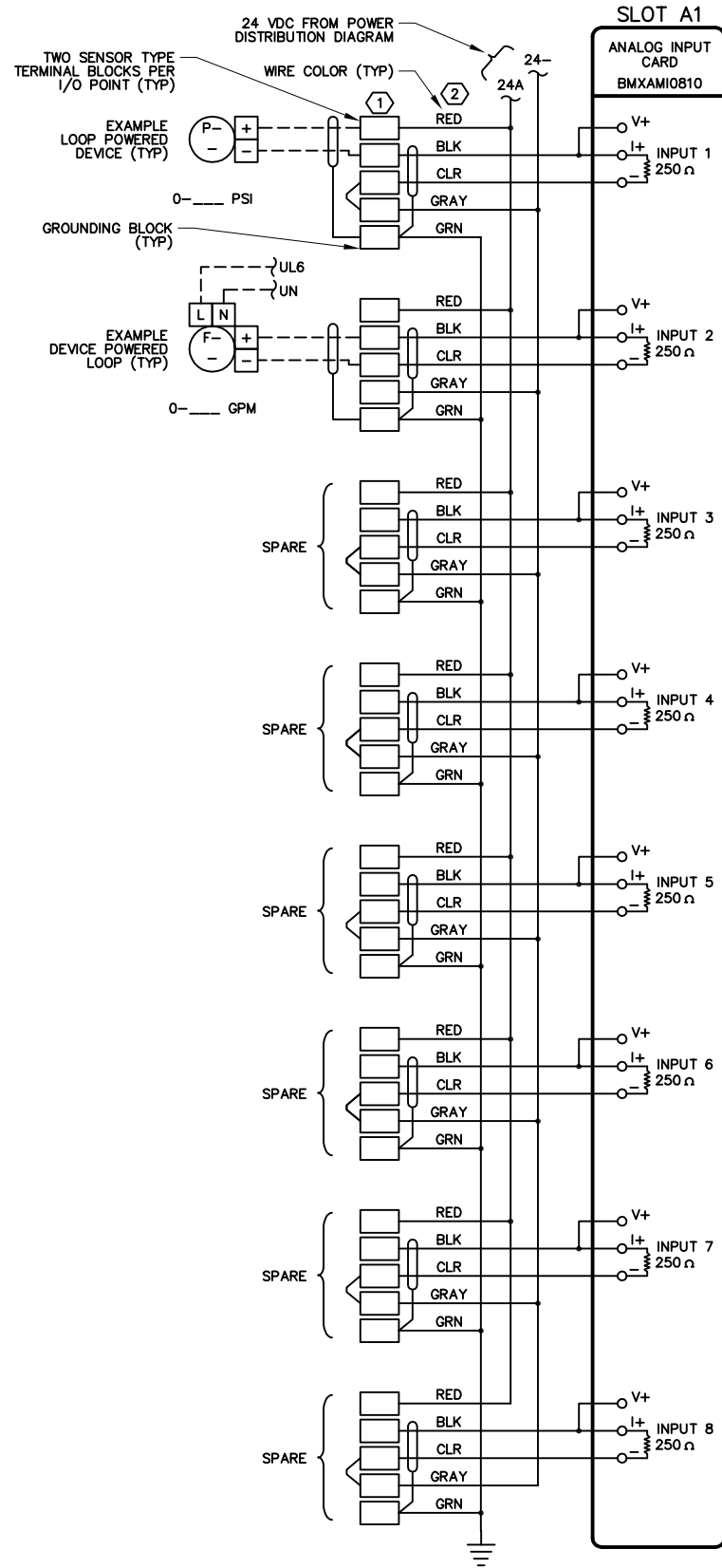
LEGEND	
SYMBOL	DESCRIPTION
	PLC CONTROL PANEL
	OPERATOR INTERFACE LOCAL TOUCHSCREEN PANEL
	FIXED POSITION CAMERA
	PAN/TILT/ZOOM CAMERA
	FIBER OPTIC LC SFP MODULE GIGABIT CONNECTION
	ETHERNET CONNECTION
	BNC CONNECTION
	NETWORK CONNECTION
	ETHERNET UNLESS OTHERWISE NOTED
	FIELD ETHERNET UNLESS OTHERWISE NOTED
	FIBER OPTIC

DESIGN T. FRISCH	DRAWN M. YARBROUGH	CHECKED M. FRISCH	APPROVED M. FISHER
FRISCH ENGINEERING, INC. 13405 FOLEY BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM DATE: NOV 08, 2019 TIME: 11:15:35AM			
WATERWORKS ENGINEERS 2260 Douglas Blvd, Suite 105 • Roseville, CA 95678 • 916-790-2688			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
ELECTRICAL COMMUNICATION BLOCK DIAGRAM			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD20-I-003			
SHEET NUMBER 140			

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COMMUNICATION BLOCK DIAGRAM

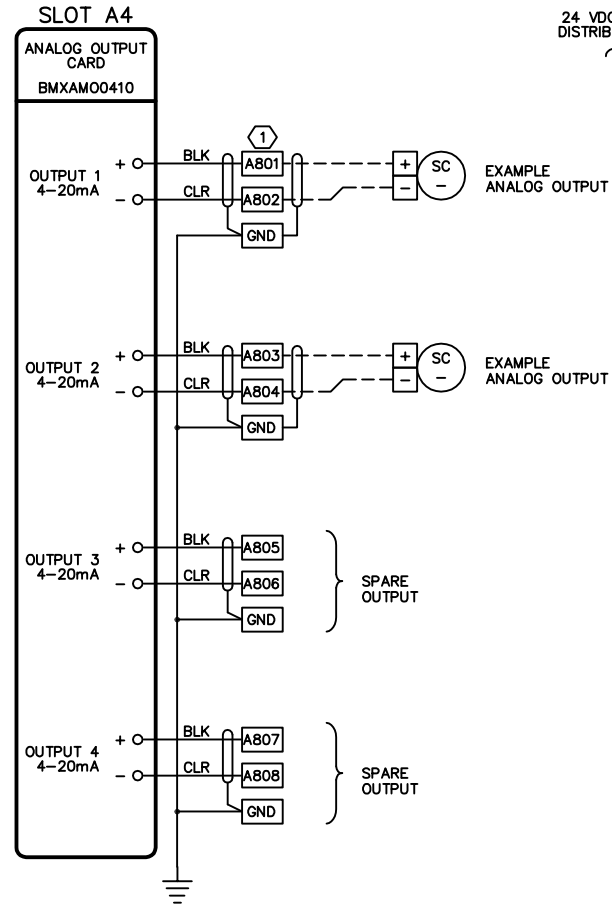


AI CARD

- NOTES: 1. TWO CARDS PER DRAWING MAXIMUM.
2. USE MANUFACTURED TERMINAL BLOCK JUMPERS WHERE POSSIBLE

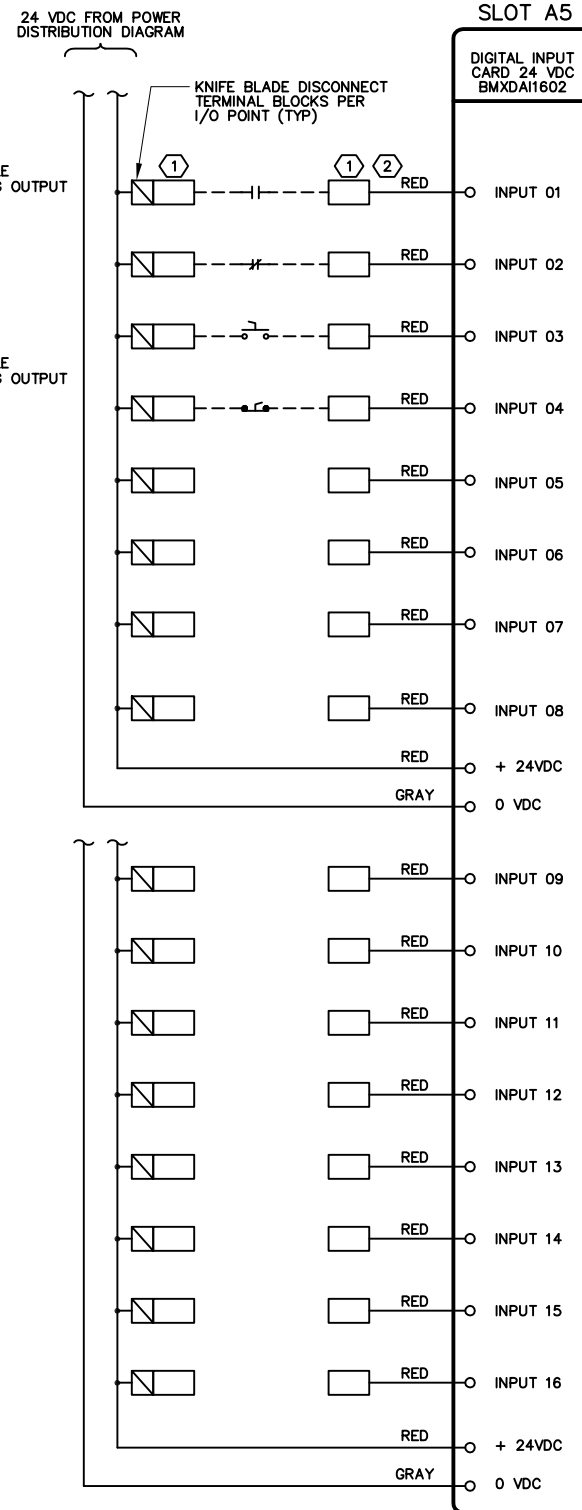
DRAWING REFERENCED NOTES:

- ① TERMINAL BLOCK DESIGNATIONS SHALL BE IN ACCORDANCE WITH COR STANDARDS (TYPICAL).
② WIRE LABELS AND WIRE COLOR SHALL BE IN ACCORDANCE WITH COR STANDARDS (TYPICAL).



AO CARD

- NOTES: 1. TWO CARDS PER DRAWING MAXIMUM.

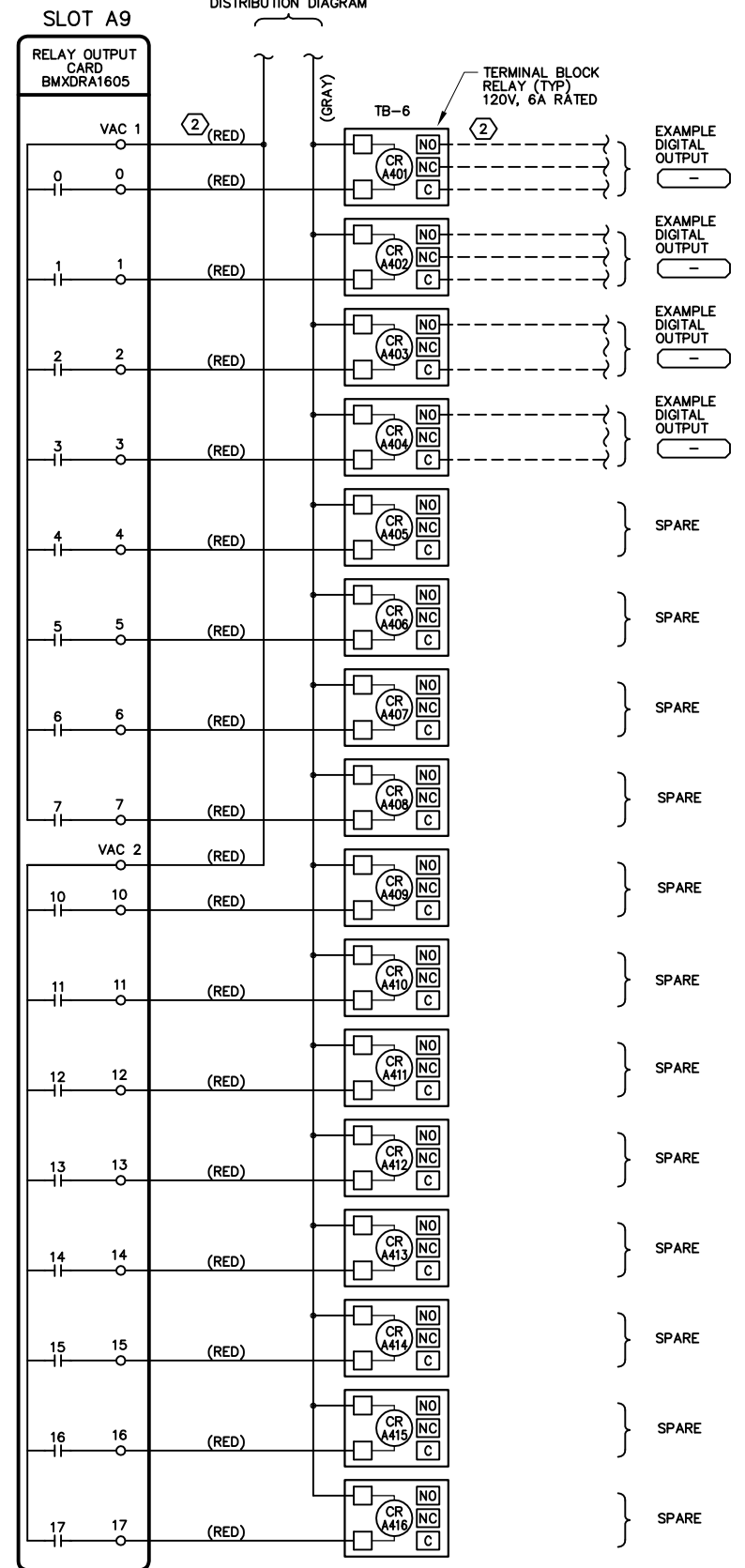


DI CARD

- NOTES: 1. TWO CARDS PER DRAWING MAXIMUM.

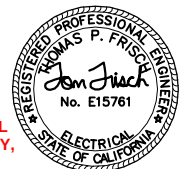
EXAMPLE PLC I/O WIRING DIAGRAMS

- NOTES: 1. WIRE SPARE PLC I/O POINTS TO TERMINAL BLOCKS.
2. EXAMPLE I/O POINTS SHOWN. THIS DRAWING INTENDED TO SHOW I/O WIRING ONLY.
3. I/O TYPE AND NUMBER OF POINTS AND CARDS REQUIRED IS DETERMINED BY P&ID DRAWINGS.
4. MINIMUM 20% SPARE I/O POINTS PER I/O TYPE.
5. PLC I/O CARD WIRE NUMBERS SHALL BE BUILT PER CITY OF ROSEVILLE STANDARDS. ALL WIRING TO BE LABELED ORIGIN / DESTINATION FORMAT.



DO CARD

- NOTES: 1. TWO CARDS PER DRAWING MAXIMUM.



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11-14-2019

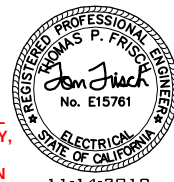
DESIGN	T. FRISCH
DRAWN	M. YARBROUGH
CHECKED	M. FRISCH
APPROVED	M. FISHER
FRISCH ENGINEERING, INC. 13405 FOLESON BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 133 WD201004.DWG DATE: NOV 08, 2019 TIME: 11:51:49AM	
WATERWORKS ENGINEERS 2260 Douglas Blvd. Suite 105 • Roseville, CA 95678 • 916-790-2888	
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	
ELECTRICAL EXAMPLE PLC I/O WIRING DIAGRAMS	
DATE NOVEMBER 2019	
PROJECT NUMBER 17-083	
DRAWING NUMBER WD20-1-004	
SHEET NUMBER 141	

P&ID ABBREVIATIONS					
INSTRUMENTATION SYMBOLS					
FIRST LETTER		SUCCEEDING LETTERS			
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROLLER	
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW	RATIO			
G	GENERAL		GLASS VIEWING DEVICE		
H	HAND				HIGH, OPENED
I	CURRENT		INDICATING, INDICATOR		
J	POWER	SCAN			
K	TIME, TIME SCHEDULED	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW, CLOSED
M	MOISTURE	MOMENTARY			MIDDLE
N	STATUS		STATUS	USER'S CHOICE	USER'S CHOICE
O	OPERATOR		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RESET		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMITTER	TEST
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALE, DAMPER, LOUVER	
W	WEIGHT		WELL		
X	SWITCH	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OF PRESENCE	Y AXIS		RELAY, COMPUTER, CONVERTER	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

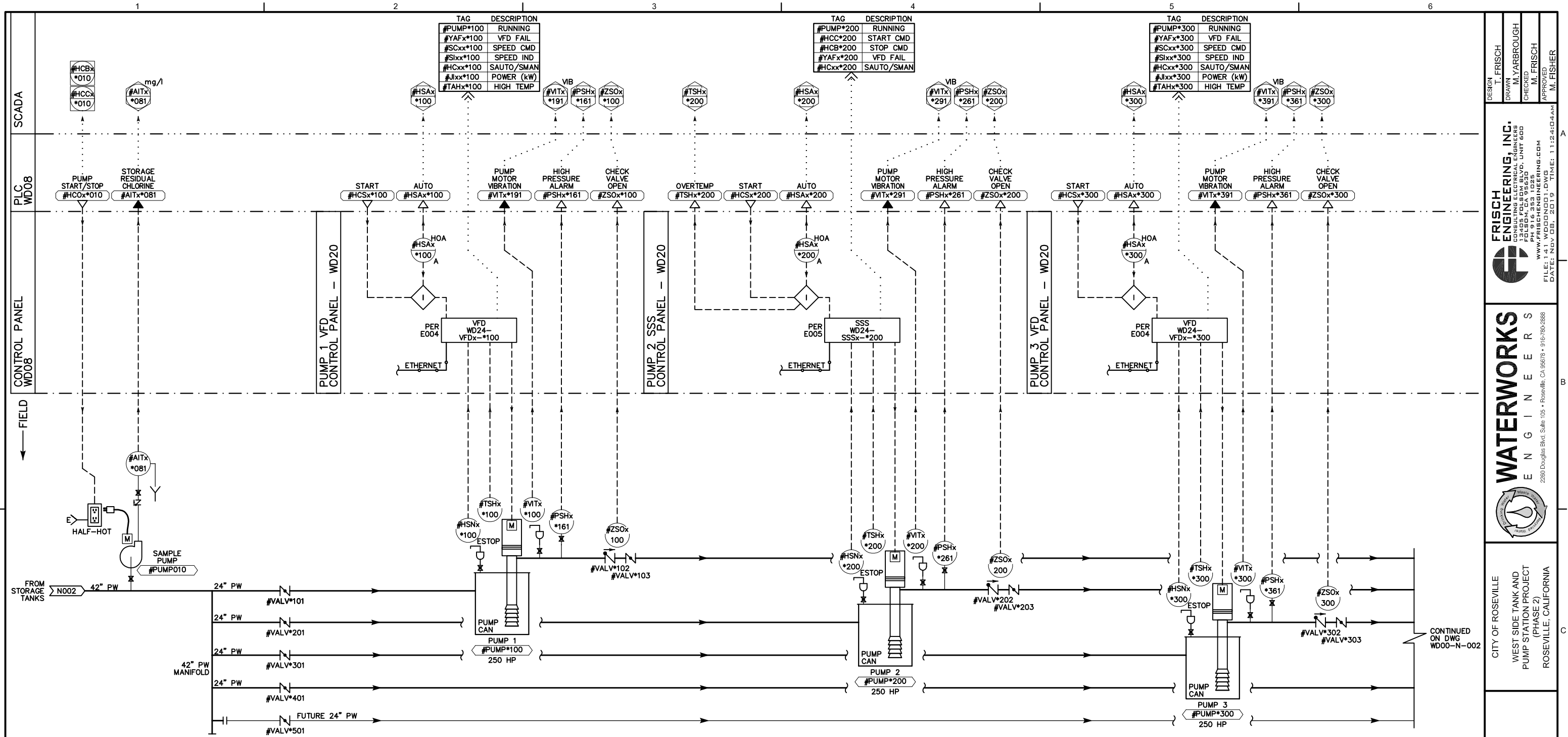
P&ID ABBREVIATIONS			
SWITCH IDENTIFIER			
F/R	FORWARD/REVERSE	OPN	OPEN
HOA	HAND-OFF-AUTO	CLS	CLOSE
LOS	E-STOP / EMERGENCY STOP	SEL	SELECTOR
L/R	LOCAL / REMOTE	S/S	START / STOP
LOA	LOCAL-OFF-AUTO	%	PERCENT ADJUSTMENT
OCA	OPEN-CLOSE-AUTO		
O/C	OPEN / CLOSE		
O/O	ON / OFF		

P&ID SYMBOLS							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
ISA SYMBOLS		VALVES		PUMPS		MISCELLANEOUS MECHANICAL ITEMS	
	FIELD MOUNTED INSTRUMENT		GATE VALVE		CENTRIFUGAL PUMP OR BLOWER		PIPE REDUCER
	INSTRUMENT MOUNTED ON DOOR OF LOCAL PANEL, OPERATOR ACCESSIBLE		CHECK VALVE		SUBMERSIBLE SEWAGE PUMP		RUPTURE DISC
	INSTRUMENT MOUNTED ON DOOR OF FIELD PANEL, OPERATOR ACCESSIBLE		PLUG VALVE		BALL VALVE		PRESSURE OR VACUUM RELIEF VALVE
	INSTRUMENT MOUNTED WITHIN PANEL, OPERATOR INACCESSIBLE		BALL CHECK VALVE		BUTTERFLY VALVE		DIAPHRAGM SEAL
	INSTRUMENT MOUNTED WITHIN FIELD PANEL, OPERATOR INACCESSIBLE		ANGLE VALVE		VERTICAL TURBINE PUMP OR WELL PUMP		ANNULAR SEAL
	OPERATION PERFORMED WITH LOGIC OR HARDWIRED DEVICES		NEEDLE VALVE		SUBMERSIBLE WELL PUMP		DRAIN TO WASTE
	ASSOCIATED MOTOR CONTROL ELEMENTARY IF APPLICABLE		RELIEF VALVE		DIAPHRAGM VALVE		MIXER
	VISUAL DISPLAY OF PLC ANALOG REGISTER SCALE TO UNITS AS SHOWN		3-WAY VALVE		GEAR PUMP		FILTER
	VISUAL DISPLAY OF PLC ANALOG ALARM REGISTER		FLOW CONTROL VALVE		POSITIVE DISPLACEMENT PUMP OR BLOWER		VENT W/CAP OR SCREEN
	VISUAL DISPLAY OF PLC DIGITAL REGISTER		PINCH VALVE		DIAPHRAGM PUMP		FLEXIBLE HOSE OR TUBING
	VISUAL DISPLAY OF PLC DIGITAL ALARM REGISTER		SOLENOID VALVE (2-WAY) (S FOR MOTORIZED VALVE)		PERISTALTIC PUMP		SPRAY NOZZLE SYSTEM
	TAG DESCRIPTION		SOLENOID VALVE (3-WAY) (S FOR MOTORIZED VALVE)		MOTOR		EXPANSION JOINT
	PLC I/O TAG		SOLENOID VALVE (4-WAY) (S FOR MOTORIZED VALVE)		PROGRESSIVE CAVITY PUMP		STATIC MIXER
	PLC DIGITAL INPUT		PNEUMATIC DIAPHRAGM CONTROL VALVE		SENSORS		EJECTOR / EDUCTOR
	PLC DIGITAL OUTPUT		PRESSURE SUSTAINING VALVE		ORIFICE PLATE		HOSE COUPLING
	ANALOG INPUT		PRESSURE REGULATING VALVE		MAGNETIC FLOWMETER		PULSATION DAMPENER
	ANALOG OUTPUT		MULTIFUNCTION VALVE		DENSITY METER		OMNI ANTENNA NON-DIRECTIONAL
	AUDIBLE ALARM (BUZZER OR HORN)		SLUICE GATE (SG) OR SLIDE GATE (SLG)		ULTRASONIC FLOWMETER		YAGI ANTENNA DIRECTIONAL
	LAMP INDICATION COLOR DENOTED BY "X" RED, BLU, GRN, WHT, AMBER		AIR RELIEF VALVE (ARV)		TURBINE OR PROPELLER METER		PRESSURE INDICATOR
	CONTINUATION TAG FROM ONE AREA TO ANOTHER AREA OF DIFFERENT DRAWINGS "X" TAG IDENTIFIER TO POINT ON DRAWING NUMBER XXXX.		FLOAT VALVE		VENTURI TUBE		
	CONTINUED ON DWG I-X		STRAINER		THERMAL DISPERSION FLOWMETER OR SWITCH		
	LINE TYPES		BACKFLOW PREVENTER		PADDLE WHEEL FLOWMETER		
	PRIMARY PROCESS LINE		CALIBRATION VALVE		ULTRASONIC LEVEL TRANSMITTER (FLOW IF OVER FLUME OR WEIR)		
	SECONDARY PROCESS LINE		CALIBRATION COLUMN		CONDUCTANCE TYPE LEVEL ELEMENTS		
	ELECTRICAL SIGNAL LINE (DIGITAL OR ANALOG)		ROTAMETER		RADAR TYPE LEVEL TRANSMITTER		
	SOFTWARE OR DATA LINK		UNION		GUIDED OPTION		
	BOUNDARY OF EQUIPMENT PACKAGE SYSTEM		ACTUATORS		CAPACITANCE TYPE LEVEL TRANSMITTER		
	COMMUNICATION CONNECTION		MOTORIZED				
			SOLENOID				
			PNEUMATIC OPERATOR				
			S- SOLENOID - OPEN/CLOSE				
			A- POSITIONER - MODULATING				

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CONSTRUCTION



DESIGN T. FRISCH	DRAWN M. YARBROUGH	CHECKED M. FRISCH	APPROVED M. FISHER
FRISCH ENGINEERING, INC. 13405 FOLESON BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 140 WD00GN001.DWG DATE: NOV 08, 2019 TIME: 11:23:53AM			
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA			
INSTRUMENTATION SYMBOLS AND ABBREVIATIONS P&ID			
DATE NOVEMBER 2019			
PROJECT NUMBER 17-083			
DRAWING NUMBER WD00-GN-001			
SHEET NUMBER 142			



BOOSTER PUMPS SHEET 1

TAG CONVENTION

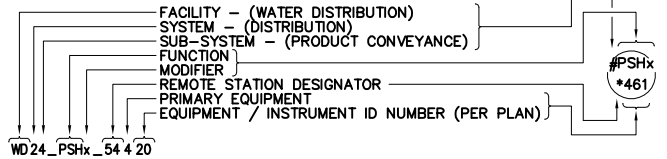
EACH EQUIPMENT AND INSTRUMENT TAG NUMBER SHALL BE CONSTRUCTED PER THE TAG EXAMPLE SHOWN AT RIGHT.

FOR THIS SHEET REPLACE:

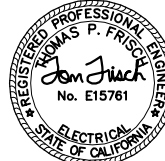
"#" WITH "WD24_" (FACILITY/SYSTEM/SUB-SYSTEM)

"*" WITH "_54" (REMOTE STATION DESIGNATOR)

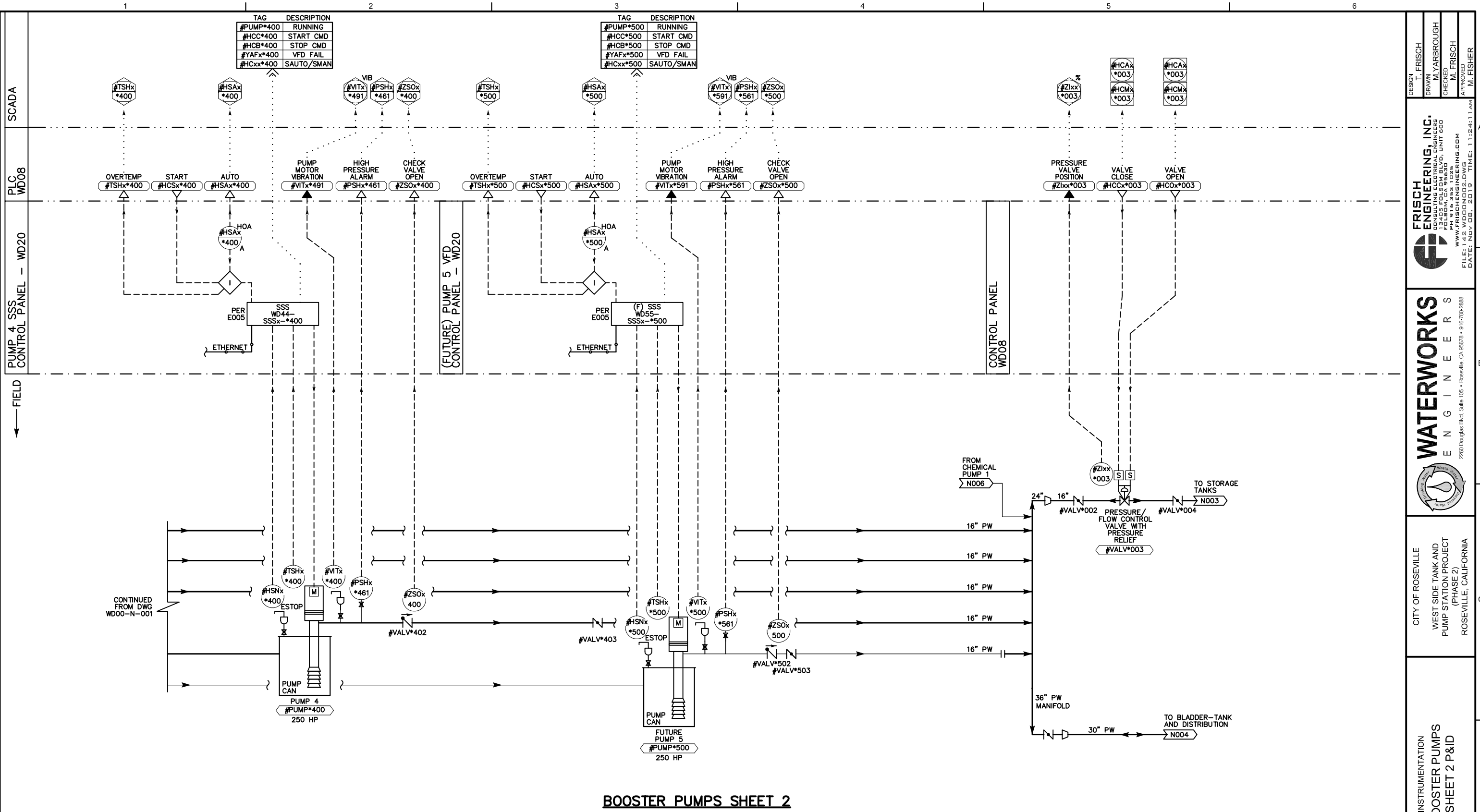
TAG EXAMPLE



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CONSTRUCTION



DESIGN T. FRISCH	FRISCH ENGINEERING, INC. 13405 FOLESBY BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM DATE: NOV 08, 2019 TIME: 11:24:04AM
DRAWN M. YARBROUGH	WATERWORKS ENGINEERS 2260 Douglas Blvd. Suite 105 • Roseville, CA 95678 • 916-790-2688
CHECKED M. FRISCH	
APPROVED M. FISHER	
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA	
INSTRUMENTATION BOOSTER PUMPS SHEET 1 P&ID	
DATE NOVEMBER 2019 PROJECT NUMBER 17-083 DRAWING NUMBER WD00-N-001 SHEET NUMBER 143	



BOOSTER PUMPS SHEET 2

TAG CONVENTION

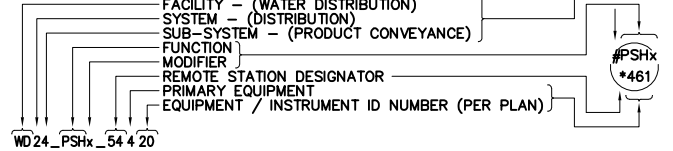
EACH EQUIPMENT AND INSTRUMENT TAG NUMBER SHALL BE CONSTRUCTED PER THE TAG EXAMPLE SHOWN AT RIGHT.

FOR THIS SHEET REPLACE:

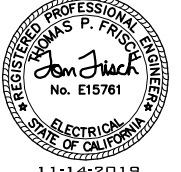
"#" WITH "WD24_" (FACILITY/SYSTEM/SUB-SYSTEM)

"*" WITH "_54" (REMOTE STATION DESIGNATOR)

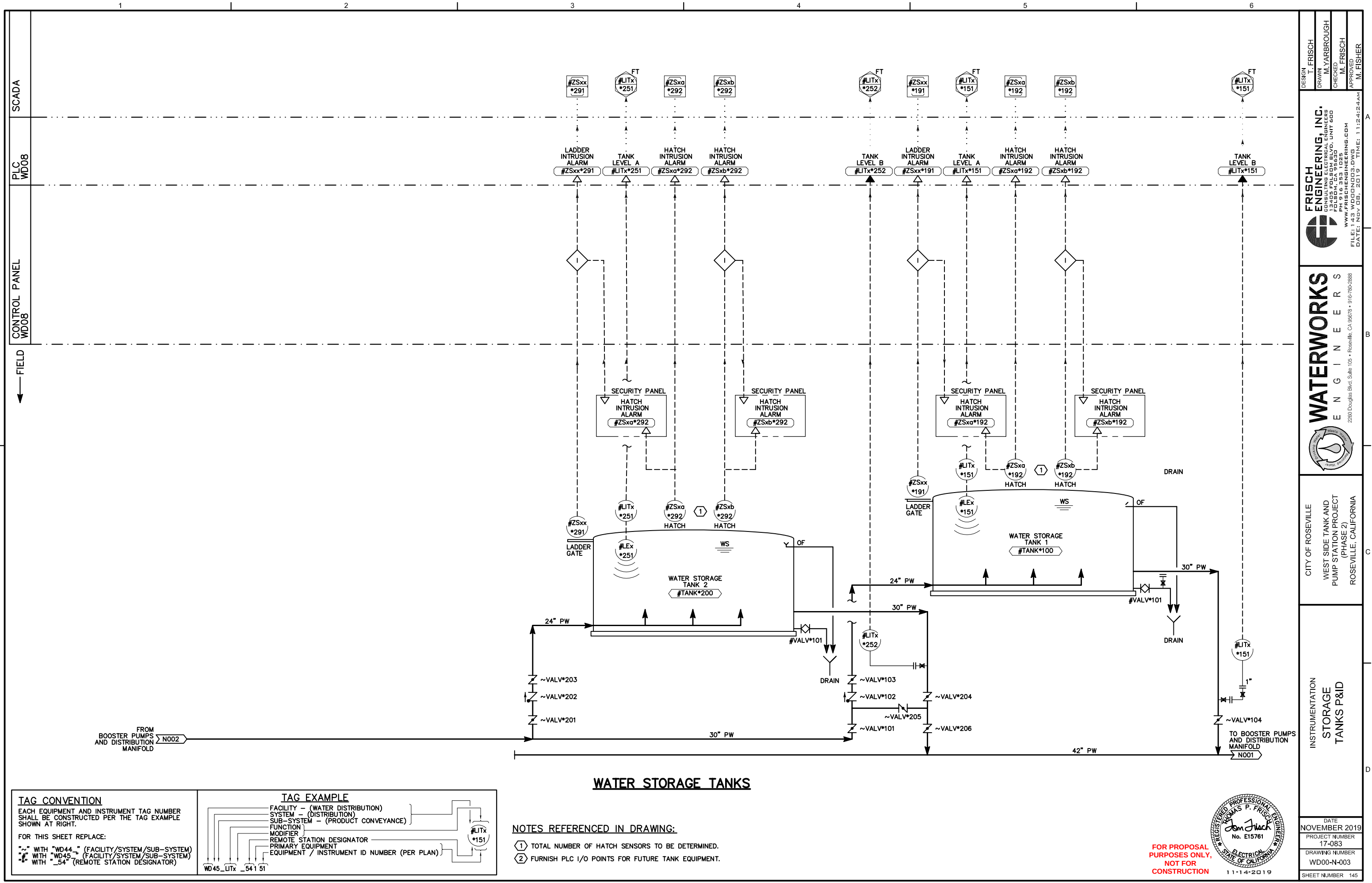
TAG EXAMPLE



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DESIGN T. FRISCH	FRISCH ENGINEERING, INC. 13405 FOLESBY BLVD., UNIT 600 FOLSOM, CA 95630 WWW.FRISCHENGINEERING.COM FILE: 1142 WD00N002.DWG DATE: NOV 08, 2019	DATE NOVEMBER 2019
DRAWN M. YARBROUGH		PROJECT NUMBER 17-083
CHECKED M. FRISCH		DRAWING NUMBER WD00-N-002
APPROVED M. FISHER		SHEET NUMBER 144
WATERWORKS ENGINEERS 2260 Douglas Blvd., Suite 105 • Roseville, CA 95678 • 916-790-2688		
CITY OF ROSEVILLE WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2) ROSEVILLE, CALIFORNIA		
INSTRUMENTATION BOOSTER PUMPS SHEET 2 P&ID		



TAG CONVENTION

EACH EQUIPMENT AND INSTRUMENT TAG NUMBER SHALL BE CONSTRUCTED PER THE TAG EXAMPLE SHOWN AT RIGHT.

FOR THIS SHEET REPLACE:

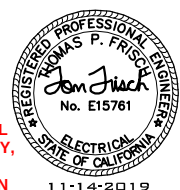
- "_" WITH "WD44_" (FACILITY/SYSTEM/SUB-SYSTEM)
- "_" WITH "WD45_" (FACILITY/SYSTEM/SUB-SYSTEM)
- "_" WITH "_54_" (REMOTE STATION DESIGNATOR)

TAG EXAMPLE

FACILITY - (WATER DISTRIBUTION)
SYSTEM - (DISTRIBUTION)
SUB-SYSTEM - (PRODUCT CONVEYANCE)
FUNCTION
MODIFIER
REMOTE STATION DESIGNATOR
PRIMARY EQUIPMENT
EQUIPMENT / INSTRUMENT ID NUMBER (PER PLAN)

WD45_LITx_54151

- NOTES REFERENCED IN DRAWING:**
- ① TOTAL NUMBER OF HATCH SENSORS TO BE DETERMINED.
 - ② FURNISH PLC I/O POINTS FOR FUTURE TANK EQUIPMENT.



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DESIGN: T. FRISCH
DRAWN: M. YARBROUGH
CHECKED: M. FRISCH
APPROVED: M. FISHER

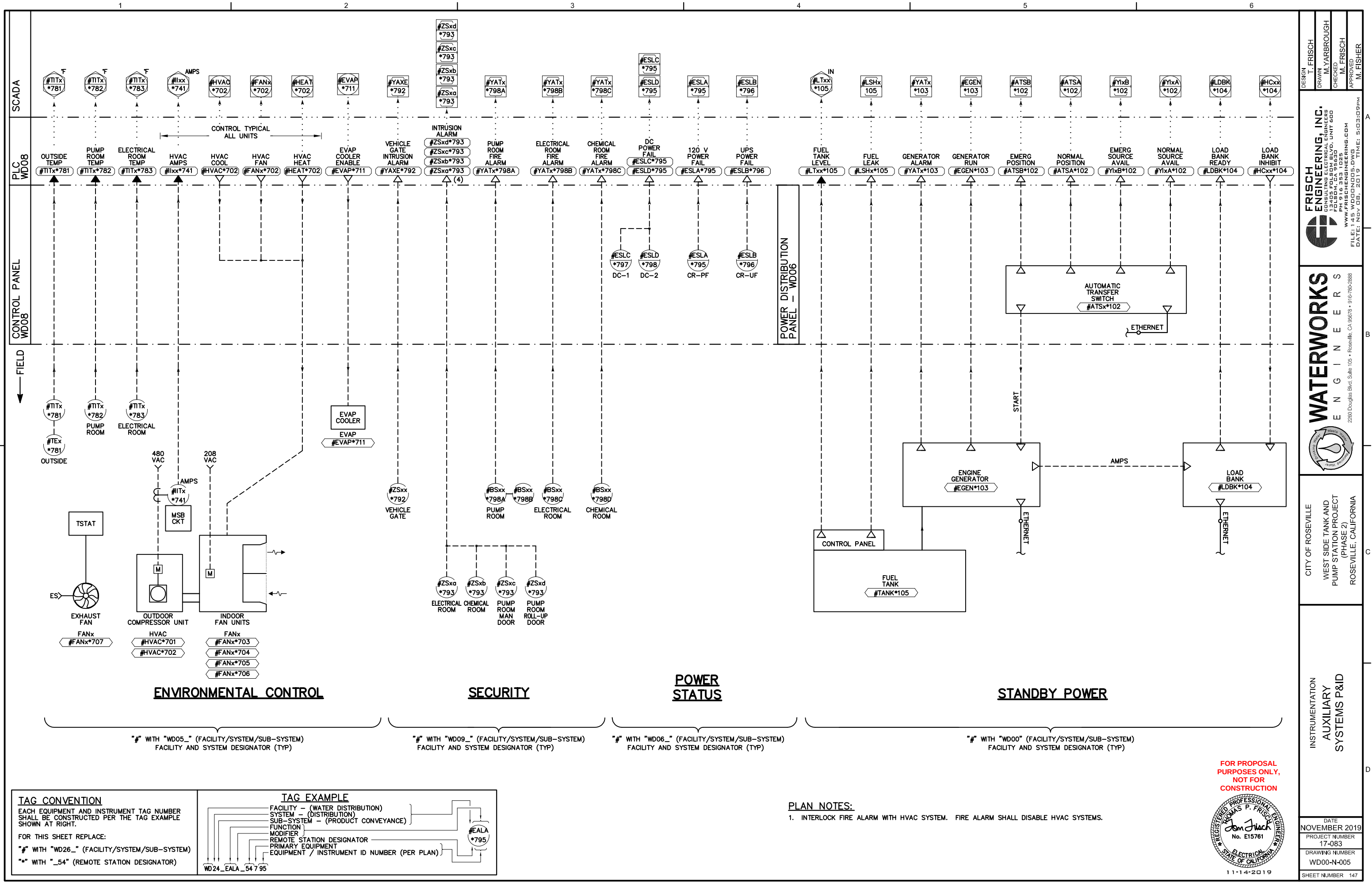
FRISCH ENGINEERING, INC.
13405 FOLESBY BLVD., UNIT 600
FOLSOM, CA 95630
WWW.FRISCHENGINEERING.COM
FILE: 1143 WD00N003.DWG
DATE: NOV 08, 2019
TIME: 11:24:24AM

WATERWORKS ENGINEERS
2260 Douglas Blvd., Suite 105 • Roseville, CA 95678 • 916-790-2888

CITY OF ROSEVILLE
WEST SIDE TANK AND
PUMP STATION PROJECT
(PHASE 2)
ROSEVILLE, CALIFORNIA

INSTRUMENTATION
STORAGE
TANKS P&ID

DATE: NOVEMBER 2019
PROJECT NUMBER: 17-083
DRAWING NUMBER: WD00-N-003
SHEET NUMBER: 145



TAG CONVENTION

EACH EQUIPMENT AND INSTRUMENT TAG NUMBER SHALL BE CONSTRUCTED PER THE TAG EXAMPLE SHOWN AT RIGHT.

FOR THIS SHEET REPLACE:

"#" WITH "WD26_" (FACILITY/SYSTEM/SUB-SYSTEM)

"*" WITH "_54" (REMOTE STATION DESIGNATOR)

TAG EXAMPLE

FACILITY - (WATER DISTRIBUTION)

SYSTEM - (DISTRIBUTION)

SUB-SYSTEM - (PRODUCT CONVEYANCE)

FUNCTION

MODIFIER

REMOTE STATION DESIGNATOR

PRIMARY EQUIPMENT

EQUIPMENT / INSTRUMENT ID NUMBER (PER PLAN)

WD24_EALA_54795

PLAN NOTES:

1. INTERLOCK FIRE ALARM WITH HVAC SYSTEM. FIRE ALARM SHALL DISABLE HVAC SYSTEMS.

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PROFESSIONAL ENGINEER

THOMAS P. FRISCH

No. E15761

11-14-2019

DESIGN: T. FRISCH

DRAWN: M. YARBROUGH

CHECKED: M. FRISCH

APPROVED: M. FISHER

FRISCH ENGINEERING, INC.

13405 FOLESDEN BLVD., UNIT 600

FOLSOM, CA 95630

WWW.FRISCHENGINEERING.COM

FILE: 1145 WD00N005.DWG

DATE: NOV 08, 2019

TIME: 5:03:09PM

WATERWORKS ENGINEERS

2260 Douglas Blvd, Suite 105 • Roseville, CA 95678 • 916-790-2888

CITY OF ROSEVILLE

WEST SIDE TANK AND PUMP STATION PROJECT (PHASE 2)

ROSEVILLE, CALIFORNIA

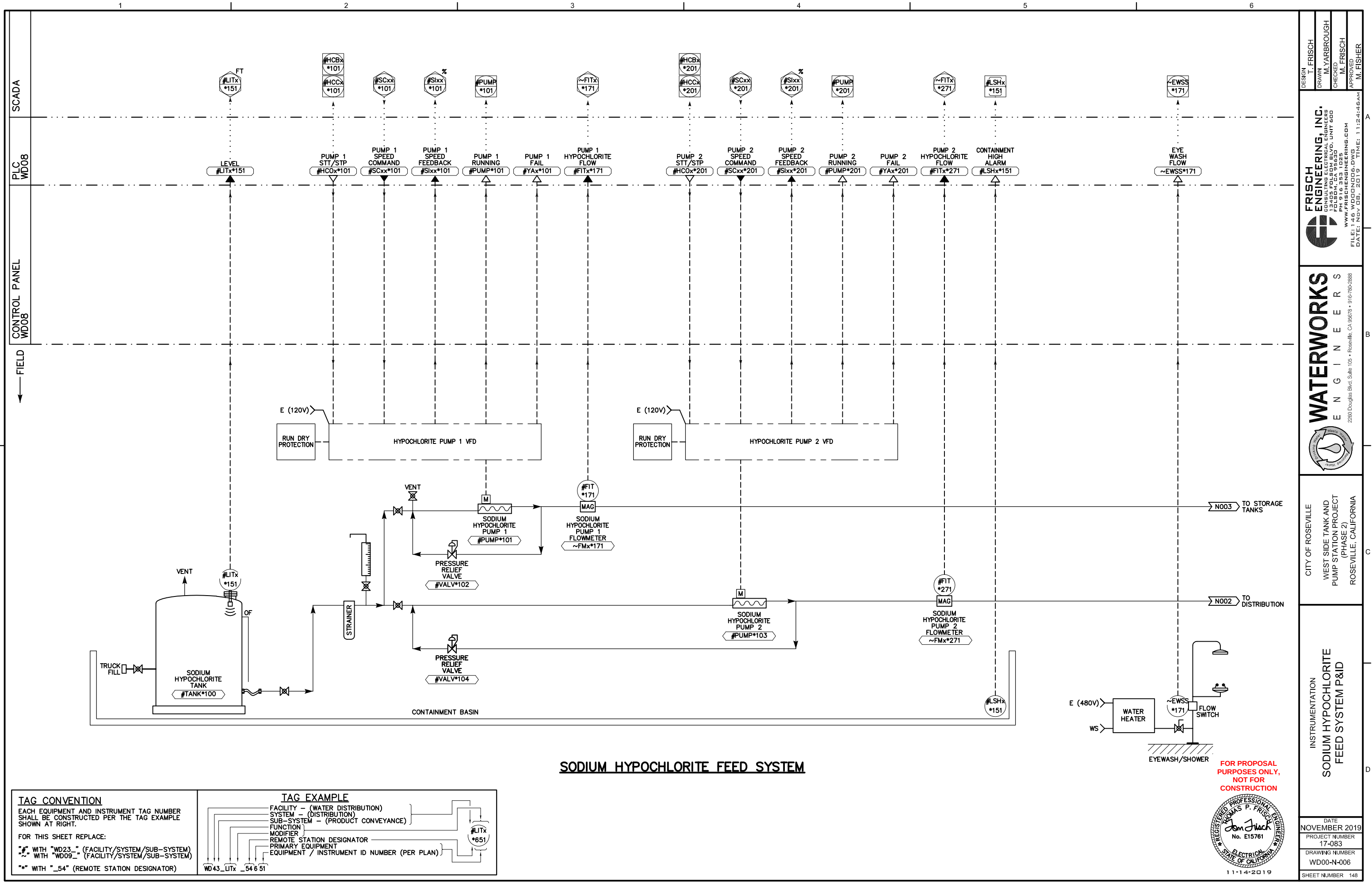
INSTRUMENTATION AUXILIARY SYSTEMS P&ID

DATE: NOVEMBER 2019

PROJECT NUMBER: 17-083

DRAWING NUMBER: WD00-N-005

SHEET NUMBER: 147





COUNCIL COMMUNICATION

CC #: 0864
File #: 0203-06

Title: Audio Visual Services - Contract Purchase Agreement and Service Agreement Amendment
Contact: Tisha Chinn 916-774-5702 tchinn@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.3.

RECOMMENDATION TO COUNCIL

Staff recommends Council adopt a resolution to approve Amendment No. 1 to Service Agreement (S1909066) with Better Presentation Systems, Inc., and authorize the City Manager to execute it. The original contract term is being extended from January 20, 2020 to January 20, 2021. Revisions were also made to the contract to reflect recent changes in State law.

Staff also requests Council adopt a resolution to approve Contract Purchase Agreement 3000292 to incorporate Exhibit B, Contract Provisions for Non-Federal Entity Contracts Under Federal Awards, and authorize the City Manager to execute it.

BACKGROUND

On March 20, 2019, City Council approved a service agreement for audio visual services with Better Presentation Systems. Projects range in size from small conference room upgrades to large facility system installations. The original contract was for 3 one-year terms and two optional renewal years. This amendment is to extend the term of the existing contract retroactively from January 20, 2020 through January 20, 2021. This will be the second of the two optional renewal years. Revisions were also made to the contract to reflect recent changes in State law.

Staff is also requesting approval for Contract Purchase Agreement 3000292 to incorporate Exhibit B, Contract Provisions for Non-Federal Entity Contracts Under Federal .

FISCAL IMPACT

This is a one-year extension to use the balance of an existing \$200,000 on-call agreement. Funding for work under this agreement comes from the requesting department upon identification of adequate funds in their respective budgets.

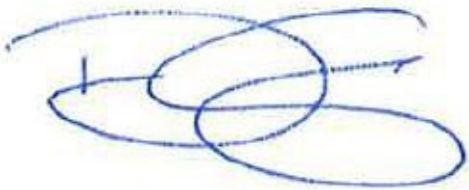
ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) only applies to projects which have the potential to cause a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. (CEQA Guidelines §15061(b)(3)).

Respectfully Submitted,

Tisha Chinn, Administrative Technician

Jason Shykowski, Public Works Director

A handwritten signature in blue ink, consisting of several overlapping loops and a final horizontal stroke.

Dominick Casey, City Manager

ATTACHMENTS:

Description

Resolution No. 20-273

CPA - Better Presentation Systems

Resolution No. 20-274

S1909066 Amendment

RESOLUTION NO. 20-273

APPROVING A CONTRACT PURCHASE AGREEMENT BETWEEN THE CITY OF ROSEVILLE AND BETTER PRESENTATION SYSTEMS, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a contract purchase agreement (3000292) for audio visual services, between the City of Roseville and Better Presentation Systems, Inc., has been reviewed by the City Council;

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said contract purchase agreement is approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 2020, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



Contract Purchase Agreement 3000292

Supplier Details:

Company Better Presentation Systems Inc
Contact Joshua Towne
Address 2008 Opportunity Dr Suite 170

Roseville, CA 95678

Submit your response to:

Company City of Roseville
Contact Joanna Oukrop
Address Purchasing Division
2075 Hilltop Circle
Roseville, CA 95747
Phone (916) 774-5745
Fax (916) 774-5736
E-mail JOukrop@roseville.ca.us

This Contract Purchase Agreement is sent for your review and acceptance. Notify the Buyer via email of any needed changes to the company name, address, and contact information. The Buyer will update the agreement prior to you signing the document.

Return signed copies of the agreement to the Buyer noted on the agreement. Alterations or modifications to the agreement are not allowed. Upon receipt of all necessary documents, the City will sign the agreement and return a fully executed copy to you. Receipt of the signed copy will be your notice to proceed with the work in accordance with the terms and conditions of the agreement. Work must not begin until the contract has been fully executed.

The following guidelines must be followed for the signature block on the agreement:

Sole proprietorship - By owner

Partnership - Any general partner

Corporation - Two options:

(1) A signature from the President and the corporate seal; OR

(2) One signature from the Chairman of the Board, President, or any Vice President AND one signature from the Secretary, any Assistant Secretary, Chief Financial Officer, or any Treasurer or Assistant Treasurer of the corporation

***General Manager, Office Manager and/or Sales Manager are not corporate officer titles.** The agreement will be rejected if not signed in accordance with these guidelines.

Insurance requirements:

The City's insurance requirements are referenced on Attachment A of the agreement. By signing the agreement, you are confirming that your company has the minimum insurance limits required.



Contract Purchase Agreement 3000292

Agreement	3000292
Agreement Date	17-APR-2020
Revision	0
Agreement Amount	200,000.00 USD

Invoice To **City of Roseville**
Accounts Payable
311 Vernon St
ROSEVILLE CA 95678

Phone: (916) 774-5488
Fax: (916) 784-3796
Email: accountspayable@roseville.ca.us

Supplier **Better Presentation Systems Inc**
 2008 Opportunity Dr Suite 170

Roseville, CA 95678
Phone: (916) 782-6444
Fax: ()
Email: joshua@betteravsystems.com

Description of Labor, equipment and/or materials
 START DATE: EXECUTED AGREEMENT
 END DATE: 1/20/21

The contractor shall furnish all labor, equipment, and materials necessary to accomplish the services called for under the City of Roseville Request for Proposal (RFP) #12-009 titled "Audio Visual Services" and contractor's proposal thereto titled "Bid Response for: City of Roseville Audiovisual Services RFP" (herein after "Proposal"). The terms and scope of work of the RFP and contractor's proposal are herein made part of this agreement and fully incorporated by reference. All jobs must be quoted and approved in advanced by an authorized member of the City's Information Technology (IT) Department utilizing contractor's "Attachment C Rate Schedule." Exhibit B rev. 4/2/20 shall also be incorporated by reference.

Contact Pete McLemore in the IT Dept. at (916)774-5431 or pmclmore@roseville.ca.us for questions.

The agreement amount is an approximate value only. The City does not guarantee whatsoever the actual amount to be spent.

Customer #	Supplier #	Payment Terms	Freight Terms	FOB	Shipping Method
	12105	Net 30	Freight on Board at the destination	Destination	Best Method
Start Date	End Date	Confirm To Joanna Oukrop Phone 1-916-774-5745			

Attention: Total Cost not to exceed the agreement amount without prior approval of the Purchasing office.

Contract Terms and Conditions

1. To the fullest extent allowed by law, Contractor shall defend, indemnify, and save and hold harmless City, its officers, agents, employees and volunteers from any claims, suits or actions of every name, kind and description brought forth, or on account of, injuries to or death of any person (including but not limited to workers and the public), or damage to property, resulting from or arising out of Contractor's willful misconduct or negligent act or omission while engaged in the performance of obligations or exercise of rights created by this Agreement, except those matters arising from City's sole negligence or willful misconduct. The parties intend that this provision shall be broadly construed. Contractor's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law. The defense and indemnity obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.
2. Contractor is an independent contractor, and shall not be considered an officer, agent or employee of the City.
3. Without the written consent of the City, this Agreement is not assignable by Contractor either in whole or in part.
4. Time is of the essence of this Agreement.
5. At any time during the term of this Agreement, the City has the right to terminate this Agreement, provided Contractor is given thirty (30) days written notice. City's termination shall be without further liability to City; however, Contractor shall be entitled to all costs reasonably incurred prior to the date of termination. Contractor acknowledges that City may terminate this Agreement should funds not be appropriated by its governing body to continue services under this Agreement.
6. This Agreement may only be amended or modified in writing. It is integrated and contains the complete understanding of the parties.
7. All equipment, supplies and services sold to the City of Roseville shall conform to the general safety orders of the State of California.
8. Unless notified to the contrary, in writing, the City assumes that the Contractor has accepted the work in accordance with the plans and specifications (if any) and agrees to do the work in compliance with this Agreement.
9. All fair employment practices must be adhered to. In addition, if the project referenced on this service agreement is a Public Works project, all prevailing wage laws must be complied with. For prevailing wage contracts over \$25,000, copies of certified payroll must be submitted with invoices. Prevailing wage rates may be obtained from the State Department of Industrial Relations and/or the following website address: <http://www.dir.ca.gov/dlsr/DPreWageDetermination.htm>.
10. Contractor agrees to the below insurance requirements:
 - a. Unless otherwise specified, the Contractor shall maintain the policies of insurance outlined in Attachment A, incorporated herein by this reference, in full force and effect during the term of this Agreement. The City of Roseville retains sole discretion in determining the types and proper levels of insurance coverage.

- b. Form. Contractor shall submit a certificate evidencing such coverage for the period covered by this Agreement in a form satisfactory to Risk Management and the City Attorney, prior to undertaking any work hereunder. Any insurance written on a claims made basis is subject to the approval of Risk Management and the City Attorney.
- c. Additional Insureds. Contractor shall also provide a separate endorsement or section of the policy showing City, its officers, agents, employees, and volunteers as additional insureds for each type of coverage, except for Workers' Compensation. Such insurance shall specifically cover the contractual liability of Contractor. The additional insured coverage under the Contractor's policy shall be primary and noncontributory, as evidenced by a separate endorsement or section of the policy, and shall not seek contribution from City's insurance or self-insurance. In addition, the additional insured coverage shall be at least as broad as the Insurance Services Office (ISO) CG 20 01 Endorsement. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be:
 - (1) the minimum coverage and limits specified in this Agreement; or
 - (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.
- d. Cancellation/Modification. Contractor shall provide ten (10) days written notice to City prior to cancellation or modification of any insurance required by this Agreement.
- e. Umbrella/Excess Insurance. The limits of insurance required in this Agreement may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and noncontributory basis for the benefit of City (if agreed to in a written contract) before City's own insurance shall be called upon to protect it as a named insured.
- f. Subcontractors. Contractor agrees to include in its contracts with all subcontractors the same requirements and provisions of this Agreement, including the indemnity and insurance requirements, to the extent they apply to the scope of the subcontractor's work. Furthermore, Contractor shall require its subcontractors to agree to be bound to Contractor and City in the same manner and to the same extent as Contractor is bound to City under this Agreement. Additionally, Contractor shall obligate its subcontractors to comply with these same provisions with respect to any tertiary subcontractor, regardless of tier. A copy of City's indemnity and insurance provisions will be furnished to the subcontractor or tertiary subcontractor upon request.
- g. Self-Insured Retentions. All self-insured retentions (SIR) must be disclosed to Risk Management for approval and shall not reduce the limits of liability. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or City. City reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.
- h. Waiver of Subrogation. Contractor hereby agrees to waive subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss under a Workers Compensation, Commercial General Liability or Automobile Liability policy. All Workers Compensation, Commercial General Liability and Automobile Liability policies shall be endorsed with a waiver of

subrogation in favor of City, its officers, agents, employees and volunteers for all work performed by Contractor, its employees, agents and subcontractors.

- i. Liability/Remedies. Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve Contractor of liability in excess of such coverage, nor shall it preclude City from taking such other actions as are available to it under any other provisions of this Agreement or law.
11. Contractor shall comply with all federal, state and local laws and ordinances, including but not limited to the City's storm water regulations, as may be applicable to the performance of services under this Agreement. Failure to comply with local ordinances may result in monetary fines and cancellation of this Agreement. Refer to www.roseville.ca.us/stormwater for links to more information on the City's storm water regulations.
12. In the event that the terms of any attachment or exhibit conflict with any terms of this Agreement, the terms of this Agreement shall control.
13. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or ".pdf" signature page were an original hereof.
14. If either party commences any legal action against the other party arising out of this Agreement or the performance thereof, the prevailing party in such action shall be entitled to recover its reasonable litigation expenses, including but not limited to, court costs, expert witness fees, discovery expenses, and attorneys' fees. Any action arising out of this Agreement shall be brought in Placer County, California, regardless of where else venue may lie. This Agreement shall be governed by and construed in accordance with the laws of the State of California.
15. This Agreement shall be binding upon the heirs, successors, executors, administrators and assigns of the respective parties hereto.
16. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.
17. For purposes of this Agreement, the terms "Contractor," "Consultant," and "Supplier" are used interchangeably.
18. If the project referenced on this agreement is a Public Works project, then the following shall apply: No contractor or subcontractor may work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code section 1725.5. During the performance of this agreement, Contractor and its subcontractors shall have a continuing legal obligation to maintain current registration with the Department of Industrial Relations. Contractor is hereby notified that this project is subject to compliance monitoring and enforcement by the Department of Industrial Relations.
19. If the project referenced on this agreement is a Public Works project, then the following shall apply: Contractor must submit all claims as defined in and in accordance with the claim resolution process set forth in Section 9204 of the Public Contract Code. Each such claim must be sent to the City by registered mail or certified mail with return receipt requested and must contain reasonable documentation to support the claim. All claims must be received prior to acceptance of the work.

20. CONTRACTOR agrees to defend and indemnify CITY if, despite the parties intent and practice, any venue, agency, or court with competent jurisdiction determines that CONTRACTOR and/or any of its agents, officers, employees, volunteers, independent contractors, or subcontractors, are characterized as employee(s) of CITY.

CONTRACTOR and CITY agree that: (a) CONTRACTOR is free from the control and direction of CITY in connection with the performance of the work; (b) CONTRACTOR is providing services directly to CITY; (c) CONTRACTOR has and will maintain at all relevant times a business license; (d) CONTRACTOR maintains a business location that is separate from CITY; (e) CONTRACTOR is customarily engaged in an independently established business of the same nature as that involved in the work performed hereunder; (f) CONTRACTOR actually contracts with other businesses to provide the same or similar services and maintains a clientele without restrictions from CITY; (g) CONTRACTOR advertises and holds itself out to the public as available to provide the same or similar services; (h) CONTRACTOR provides its own tools, vehicles, and equipment to perform the services; (i) CONTRACTOR has negotiated its own rates; (j) CONTRACTOR set its own hours and location of work in accomplishing CITY's on-call needs; and (k) CONTRACTOR has the right to control the manner and means of accomplishing the result desired and exercises its own expert independent judgement.

The supplier named hereon by the acceptance of this order agrees to the provisions of this document titled "Contract Purchase Agreement" and all accompanying terms, conditions, and attachments.

Roseville Business License No. 806840

Contractor License No. 828018

DIR Registration No. 1000004209

Check mark the applicable company type below:

☒ X Corporation

☐ Limited Liability Company

☐ Partnership

☐ Sole Proprietor

City Reserves the right to withhold any payments to contractor in the event of noncompliance with insurance requirements or if required by law.

General T&C
REV 5/3/18 JS

**ATTACHMENT A
HUMAN RESOURCES/RISK MANAGEMENT DIVISION
INSURANCE REQUIREMENTS
AGREEMENT OVER FORMAL BID LIMIT OR INVOLVING HIGH RISK ACTIVITIES**

General - Required Coverage/Documentation

- General Liability: \$1 Million per occurrence /\$2 Million aggregate
- Automobile Liability: \$1 Million combined single limit
- Workers' Compensation: Statutory *Must provide a Waiver of subrogation
- Additional Insured Endorsement (AIE) - General Liability policy: CG 20 38 04 13 or an equivalent, blanket endorsement or section of the policy. Endorsement shall cover the City of Roseville, its officers, agents, employees and volunteers as additional insured.
- Policies must be primary and non-contributory
- A 30 day notice of cancellation must be provided
- List certificate holder as: The City of Roseville - Insurance Compliance, PO Box 100085-R1, Duluth, GA 30096

Additional Liability/Insurance Requirements if required by Agreement (and marked below):

Construction:_____

General Liability:
\$2 Million/occurrence
\$4 Million aggregate

Design Professional:_____

General Liability:
\$2 Million/occurrence
\$4 Million aggregate
Professional Liability:
\$2 Million/occurrence

Professional Consultant:_____

Professional Liability:
\$1 Million/occurrence

IT Services:_____

Professional Liability:
\$1 Million/occurrence
No auto required

Hazardous Materials:_____

Pollution Liability:
\$1 Million/occurrence

Special Events/Caterers-Vendors:_____

No auto required
No workers' comp required

Professional Counseling/ Psychological:_____

Professional Liability:
\$1 Million/occurrence
No auto required

Pyrotechnics:_____

General Liability:
\$5 Million/occurrence
\$10 Million aggregate
Auto - \$2 Million/occurrence

Contract Purchase Agreement 3000292

Chemical/Environmental: _____

General Liability:
\$3 Million/occurrence
\$6 Million aggregate
Pollution – \$2 Million/Occurrence
Auto - \$2 Million/Occurrence

Insurance Submission Process

The City of Roseville Human Resources/Risk Management Department uses a service called EBIX to manage our insurance certificate tracking.

How It Works

- The vendor's contact information is entered into EBIX. EBIX will contact the vendor to request proof of insurance.
- The Vendor can forward the request to their Insurance Agent(s) if necessary.
- Vendor/Insurance Agent submits insurance to EBIX by email to roseville@ebix.com or by fax to (770) 325-5727. After faxing or emailing the certificate, please DO NOT send the certificate by mail to EBIX. Please do not mail, email or fax any certificates to the City of Roseville.
- Once submitted, EBIX reviews the insurance documentation. If there are deficiencies, EBIX will send a follow up letter or email requesting additional information.

Questions Regarding Insurance Submission: Contact EBIX at (951) 652-4239

Questions Regarding Insurance Requirements Contact Risk Management at (916) 774-5202

Asbestos-Containing Materials in City-Owned Buildings

California Health and Safety Code Section 25915 requires that all City of Roseville employees, contractors and lessees be notified annually of the presence of asbestos in City-owned buildings constructed prior to 1979. Please post this notice in an area(s) accessible to all employees, contractors and lessees. Contact Facility Maintenance & Operations at (916) 774-5740 for more information about Asbestos Containing Materials (ACMs) in specific City-owned buildings. For more information about asbestos refer to the OSHA website.

The City of Roseville is committed to maintaining a safe and healthy work environment. The City's Facility Maintenance & Operations staff conducts ongoing inspections to identify and safely manage previously installed asbestos-containing products. Renovation of City-owned buildings **MUST** be reviewed in advance by Facility Maintenance & Operations to ensure the City is in compliance with building codes, Americans with Disabilities Act and that no ACMs are disturbed without proper safeguards. Work that requires removal or repair of ACMs is restricted to trained and qualified persons only. **Facility Maintenance & Operations will need to approve the qualified contractors.**

Use the following measures to protect you and others from exposure to airborne asbestos:

- Presume all building materials contain asbestos until determined otherwise by Facility Maintenance & Operations.
- Do not install walls, closets, cabinets, ceilings.
- Do not remove, cut, drill, sand, grind or otherwise disturb any material in the buildings, including carpet and tile.
- Do not paint (this includes any walls, ceilings, floors and electrostatic painting of office furniture).
- Do not remove any items nailed or screwed to the walls (this includes pictures, cabinets, electrical, etc.).
- Do not go above ceilings, behind walls or into building spaces such as attics and crawlspaces unless these areas have been inspected and cleared by Facility Maintenance & Operations.
- Do not pull cable or wiring through above-ceiling spaces with asbestos.
- Do not install screws, pins, nails or hangers into asbestos ceiling or wall plaster.
- Be careful not to damage walls, ceilings or floors when moving furniture or equipment. It is recommended that Facility Maintenance & Operations be contacted prior to moving furniture or equipment.
- Do not brush, sweep or vacuum textured asbestos ceiling plaster or plaster debris.
- Immediately report any damage or deterioration of suspect building materials to Facility Maintenance & Operations or Risk Management.

It is important to note that the presence of asbestos does not mean you have been exposed. Exposure results when friable asbestos particles are inhaled or ingested. Asbestos becomes friable when material containing asbestos is drilled, sanded or disturbed by remodeling or demolition work or when the ACM has deteriorated. Intact, bonded, sealed or undisturbed asbestos does not pose a hazard.

Employees may review the asbestos survey reports, results of bulk sampling or air monitoring conducted in City-owned buildings. All asbestos data will be available by appointment with Facility Maintenance & Operations.

Facilities Built Pre 1979 That May Contain Asbestos	Year Built
Downtown Library - 225 Taylor Street 95678	1974
Carnegie Museum - 557 Lincoln Street 95678	1912
Tower Theatre - 415 Vernon Street 95678	1940
Fire Station #3 - 1300 Kirby Way 95661	1963
Old Corp Yard - 100 Old Corp Yard Road 95678	1940
Water Treatment Plant Operations Bldg.- 9595 Barton Road 95746	1965
Waste Water Treatment Plant Operations Bldg.- 1800 Booth Road 95747	1962
Royer Recreation Bldg. - 190 Park Drive 95678	1950
Fire Museum - 400 Lincoln Street 95678	1930
Diamond Oaks Golf - 349 Diamond Oaks Road 95678	1965
Johnson Pool, 4th & D Street	1950
330 Vernon Street	1940
107 Sutter Avenue	1962

Sign to acknowledge receipt of asbestos notification:

SIGNATURE	
COMPANY NAME	Better Presentation Systems
DATE	4/17/20

Asbestos
Rev 01/16/19

Supplier	
Signature:	
Print Name:	Steve Holvis
Title:	President

Supplier	
Signature:	
Print Name:	
Title:	

City of Roseville, A Municipal Corporation	
Signature:	
Print Name:	Dominick Casey
Title:	City Manager

Exhibit B
Revised 4/2/20

Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

1. For purposes of this Exhibit B, the terms contractor, consultant, supplier, and vendor shall be used interchangeably and specifically refer to the party furnishing good and/or services to the City of Roseville (hereinafter "City") pursuant to the Agreement.
2. **Contractual remedies for breach of the Agreement:** Should any party breach any of the terms of the Agreement, the non-breaching party may commence any legal action against the other party arising out of the breach of the Agreement or the performance thereof. The prevailing party in such action shall be entitled to recover its reasonable litigation expenses, including but not limited to, court costs, expert witness fees, discovery expenses, and attorneys' fees. Any action arising out of the Agreement shall be brought in Placer County, California, regardless of where else venue may lie. This Agreement shall be governed by and construed in accordance with the laws of the State of California.
3. **Termination for cause or convenience:** At any time during the term of this Agreement, the City has the right to terminate this Agreement, provided contractor is given thirty (30) days' written notice. City's termination shall be without further liability to City, however contractor shall be entitled to all costs reasonably incurred prior to the date of termination. contractor acknowledges that City may terminate this Agreement should funds not be appropriated by its governing body to continue services under this Agreement.
4. **Equal Employment Opportunity:** The regulation at 41 C.F.R. Part 60-1.4(b) requires the insertion of the following contract clause.

During the performance of this Agreement, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for

employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The contractor will comply with all provisions of Contractor Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The contractor will furnish all information and reports required by Contractor Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further City contracts or federally assisted construction contracts in accordance with procedures authorized in Contractor Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Contractor Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Contractor Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect

to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local City, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such City which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Contractor Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, City contracts and federally assisted construction contracts pursuant to the Contractor Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Contractor Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

5. **Davis Bacon Act:** If the Agreement is a prime construction contracts in excess of \$2,000, contractor agrees:
 - a. All transactions regarding this contract shall be done in compliance with the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29 C.F.R. pt. 5 as may be applicable. The contractor shall comply with 40 U.S.C. 3141-3144, and 3146-3148 and the requirements of 29 C.F.R. pt. 5 as applicable.
 - b. Contractor is required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor.

- c. Additionally, contractor is required to pay wages not less than once a week.
6. **Copeland Anti-Kickback Act:** If the Agreement is a contract for construction or repair in excess of \$2,000, contractor agrees:
- a. Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
 - b. Subcontracts. The contractor or subcontractors shall insert in any subcontracts the clause above and such other clauses as FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
 - c. Breach. A breach of the contract clauses above may be grounds for termination of the Agreement, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.
7. **Contract Work Hours and Safety Standards Act:** This section applies if the Agreement is in excess of \$100,000 under grant and cooperative agreement programs and involves the employment of mechanics or laborers. It is applicable to construction work. These requirements do not apply to the purchase of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
- (1) *Overtime requirements.* No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
 - (2) *Violation; liability for unpaid wages; liquidated damages.* In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
 - (3) *Withholding for unpaid wages and liquidated damages.* The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work

Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

- (4) *Subcontracts*. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

8. Clean Air Act and Federal Water Pollution Control Act: If the Agreement is in excess of \$150,000:

- a. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq., and the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- b. The contractor agrees to report each violation to the City and understands and agrees that the City will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- c. The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

9. Debarment and Suspension:

- (1) This Agreement is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- (2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (3) This certification is a material representation of fact relied upon by the City. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the City, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The contractor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions.

10. Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended):

If the Agreement is \$100,000 or more, contractor shall file the required certification under the Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended). Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or

organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

11. Procurement of Recovered Materials:

- i. In the performance of this contract, the contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:
 - 1. Competitively within a timeframe providing for compliance with the contract performance schedule;
 - 2. Meeting contract performance requirements; or
 - 3. At a reasonable price.
- ii. Information about this requirement, along with the list of EPA- designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
- iii. The contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

12. Access to Records:

- (1) The contractor agrees to provide City, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- (2) The contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- (3) The contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.
- (4) In compliance with the Disaster Recovery Act of 2018, the City and the contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

13. No Obligation by Federal Government:

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

14. Program Fraud and False or Fraudulent Statements or Related Acts:

The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract.



Bid Response For:
City of Roseville
AUDIOVISUAL SERVICES
RFP



**Better
Presentation
Systems, Inc.**

Joshua Towne
Joshua@BetterAVSystems.com
2008 Opportunity Drive, Suite 170
Roseville, CA 95678
(916) 782-6444 (916) 782-8811

BPS, Inc. will perform the services and adhere to the requirements described
in the original RFP.



**Better
Presentation
Systems, Inc.**

Firm Qualifications

Better Presentation Systems, Inc. Statement of Qualifications;

Better Presentation Systems, Inc. was founded in May of 2002 as an audio and video systems integration company. We specialize in the design, procurement, and installation of commercial A/V systems for corporate, government, and education clients. We have extensive experience in all aspects of A/V integration from small tenant improvement single room projects to multi-room projects to complex operational centers. We pride ourselves in closing projects on time and on budget. Our experience and time in the field guarantees that we can design a system on paper and make it work in the field.

For the past eleven years Better Presentation Systems has been the exclusive A/V integration company to Hewlett Packard's Roseville campus. The A/V projects for HP have ranged from approximately 75 simple conference rooms to large combine/divide public hearing rooms. In 2006 Hewlett Packard re-purchased and rebuilt the Addison Avenue house in Palo Alto and redesigned the house as a conference center for their highest level executives and board members. The Addison Ave house is where Mr. Hewlett and Mr. Packard started the company that was to bear their name. Based on our performance over the years Better Presentation Systems was selected over Bay Area competitors as the A/V vendor to design and install the A/V and audio conferencing system in the Addison Avenue house. This house has been recognized by the Historical Society as the "Birthplace of Silicon Valley". In the summer of 2015 Better Presentation Systems, Inc. integrated eighteen (18) conference rooms for CalWIN at the HP campus. The conference rooms ranged in complexity from simple huddle rooms to large, acoustically challenging teleconference rooms.

Better Presentation Systems has also provided all A/V services for Sacramento Municipal Utilities District (SMUD) since 2005 throughout the district and main campus. Projects have included the redesign of the display system for the entire electrical grid throughout the Sacramento area, and its' counterpart back-up system located at the Rancho Seco Facility. We have designed and installed over 30 A/V systems throughout the campus including their public boardroom and complex Lighting Classroom, and have been providing ongoing support for these projects. In 2009 Better Presentation Systems was considered for SMUD's Power Player Awards as an outstanding business that has performed at an exemplary level on previous contracts. In the summer of 2013, Better Presentation Systems completed various A/V systems for SMUDs Eastern Campus Operations Center (ECOC), the first utilities facility to reach LEED Platinum certification.

In 2005 The City of Sacramento adopted Resolution 2005-588 suspending the competitive bidding process in order to ensure that Better Presentation Systems, Inc. was selected to design and install the A/V system in the Historic City Hall. This was done due to the importance of this building, and based on our performance on previous projects. In 2015 the City of Sacramento is once again looking to Better Presentation Systems, Inc. to sole source another wide scale City Hall City Council Board Chambers A/V modernization project that is slated to start this December.



**Better
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Systems, Inc.**

Better Presentation Systems, Inc. In-House Services Include:

- Project Design and Engineering – Engineering services that will produce a bill of materials, line diagrams, mounting details, heat calculations, weight calculations, acoustic coverage calculations, etc.
- Prevailing Wage Field Labor – Running cable, mounting displays, installing microphones, physical installation of A/V equipment
- Computer Aided Drafting – Production of as-built drawings, shop drawings, additional schematics as they relate to other trades, etc.
- Custom Control Processor Programming – Configuration/programming of control systems, development of Graphical User Interfaces (GUI) for touch screen controllers, development of enterprise LAN monitoring of networked A/V equipment, produce un-compiled program files for client safe keeping
- Field Engineering – Engineering oversight of field technicians, custom fabricated solutions that are needed in the field as they relate to the changing conditions of the job site or additional requirements of functionality, coordination in the field with other trades as they relate to the A/V portion of the project
- Project Management – Supervision of technicians work, manage work flow scheduling, also works with other trades during large projects, attendance of safety meeting, attendance of construction meetings, acts as a consistent liaison between client and BPS
- A/V Maintenance Service – Trouble shooting of existing A/V equipment (does not cover component level repair), projector lamp replacement, projector filter cleaning, impedance testing for speakers, etc.
- Shop Labor/ Rack Fabrication – Configure rack mounted equipment prior to being delivered onsite, dressing cables, terminating cables, initial testing, patch panel fabrication
- Documentation and Administration – Assemble submittal documentation, produce physical printed shop/design/as-built drawings, produce user guides for training staff, bonding paper work and administration, production of prevailing wage and other labor reports
- A/V Equalization and Commissioning – Testing of the A/V system post installation preprogramming, testing speaker noise levels, testing speaker polarity, testing HDMI and HDCP signal path and EDID configurations, Digital Sound Processing (DSP) configuration, audio conferencing SIP configuration (along with client telecom staff), IP address assignment (along with client telecom staff), etc.



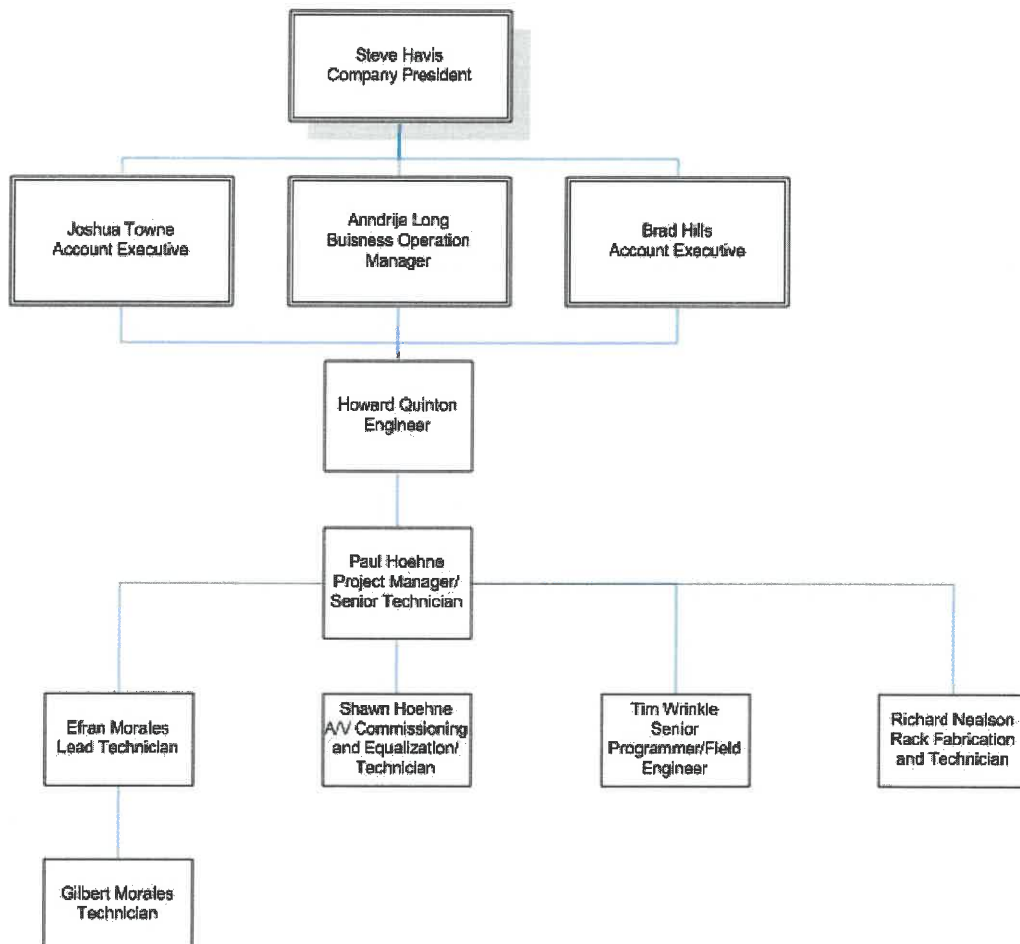
Better Presentation Systems, Inc.

Better Presentation Systems, Inc. Sub-Consultant Services Include:

- Custom Control Processor Programming- Same description as aforementioned, but Better Presentation Systems may sub-contract to Phulogic for programming services in times that our in-house programmer is occupied with a project.
- Acoustic Engineering and Consulting – Better Presentation Systems may sub-contract to J.C. Brennan & Associates for acoustical engineering when dealing with large, complex acoustic environments. J.C. Brennan offer the following services; ANSI type 1 sound level measurement, computer modeling of noise impacts, GIS mapping, and have plans to add EASE modeling. J.C Brennan has a standing history with the City of Roseville as they have done testing at the Roseville Energy Park.

Better Presentation Systems, Inc. Organization Chart:

Since 2010 company size has ranged from 8-12 staff members.





**Better
Presentation
Systems, Inc.**

Experience And References

Sacramento Municipal Utilities District

Jim Dayringer

Phone: (916)390-3135

BPS has held a standing A/V service agreement with SMUD since 2005. In that span BPS has deployed countless conference rooms, board rooms, auditoriums, and other A/V systems. BPS has developed many business practices that help manage and track tasks at SMUD, as there are always multiple tasks open and in continual progress at any given time. SMUD has renewed its contract with BPS at every available opportunity and BPS plans to maintain this relationship through strong communication and project management.

San Joaquin County

Steve Herzfeldt

Phone: (209) 468-3943

From 2011 through 2013 San Joaquin County maintained a service contract for a \$1.5 million dollar Board Chambers A/V system. Budget constraints have prevented San Joaquin County from renewing the annual contract, but they exclusively use BPS for their A/V service on an as needed basis. Additionally, San Joaquin has employed BPS to engineer and design a new microphone and voting system to be deployed in the near future.

City of Roseville

Randy Beckman

Phone: (916) 774-5402

For the last three years the City of Roseville has issued service agreements (S1404136, S1501136, and S1604125) to BPS for small A/V projects and general A/V service. In that time BPS has integrated A/V systems in the HR interview room, Roseville Electric conference room, and Mahany Park among other services. BPS has developed a few A/V system templates that meet level of functionality and simplicity that the City of Roseville staff have been delighted with since implementation. This standard will allow staff to have a consistent A/V operation experience regardless of familiarity of the system.



**Better
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DMV

Larry Sopp

Phone: (916)825-6990

In 2013 DMV awarded BPS a two year A/V service contract. DMV had 250,000 square feet of office space that had nine conference rooms with A/V systems covered by the service contract and various other A/V systems that BPS worked on an as needed basis outside of the service contract. At the end of the two year contract BPS helped put DMV back in control of their A/V systems. BPS generated working wire diagrams, rewrote control system code, and reterminated cabling to alleviate the aches of their aging A/V systems. BPS was invited to bid on the contract renewal, but due to a change in the contract to almost exclusively use weekend hours to perform work, BPS chose not to rebid.



**Better
Presentation
Systems, Inc.**

Qualifications of Team

- 1) **Name:** **Steve Havis**
Position: **President**
Experience Summary:
- 20 Years A/V Sales
 - 13 years Owning and Managing Better Presentation Systems, Inc.
- Educational Background**
- B.A. Business from CSU Chico
- 2) **Name:** **Anndrija Long**
Position: **Business Operations Manager**
Experience Summary:
- 11 years in A/V field
 - 10 years with BPS
- Educational Background:**
- ICIA, Certified Technology Specialist
 - Certified Payroll Specialist
 - Proficient in QuickBooks, MS Word & Excel, JD Edwards
- Typical Duties Include:**
- Equipment Procurement
 - Billing and Accounts Payable
 - Assemble Submittal Documentation
 - Produce Physical Printed Shop/Design/As-Built Drawings
 - Produce User Guides
 - Bonding Paper Work and Administration
 - Production of Prevailing Wage Labor Reports



**Better
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- 3) **Name:** **Joshua Towne**
Position: *Account Executive*
Experience Summary:
- 12 years in A/V Field
 - 4 years with BPS
- Educational Background:**
- THX Certified Advisor
 - Extron School of Emerging Technologies
 - Polycom Video and Teleconference Certified
- Typical Job Duties:**
- Project Estimation
 - Sales Engineering
 - Performs Needs Assessment with Client
 - Works with Project Engineer to Ensure A/V System meets Client's Intended Use
-
- 4) **Name:** **Brad Hills**
Position: *Account Executive*
Experience Summary:
- 11 years in A/V Field
 - 22 years in Live Audio
 - 11 years with BPS
- Educational Background:**
- B.A. Communication from USC
 - Extron School of Emerging Technologies
 - Crestron DMC-D
- Typical Job Duties:**
- Project Estimation
 - Sales Engineering
 - Performs Needs Assessment with Client
 - Works with Project Engineer to Ensure A/V System meets Client's Intended Use



**Better
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Systems, Inc.**

- 5) **Name:** **Howard Quinton**
Position: **Project Engineer**
Experience Summary:
- 30 years Engineering, Installation, & Maintenance of A/V and Broadcast Systems
 - 1 year with BPS
- Educational Background:**
- A.S. Degree Electronics
 - InfoComm Training Design Level 1-3
 - Creston Digital Media Certified Designer
 - Graduate of Extron's School of Emerging Technologies
- Typical Job Duties:**
- Produce the Following Documentation; Bill of Materials, Line Diagrams, Mounting Details, Heat Calculations, Weight Calculations, Acoustic Coverage Diagrams, As-Built Drawings, Shop Drawings, Additional Schematics as They Relate to Other Trades
-
- 6) **Name:** **Paul Hoehne**
Position: **Project Manager/Senior Technician**
Experience Summary:
- 12 years in A/V Lead Technician
 - 5 years Project Management
- Educational Background:**
- Extron Technician Training
- Typical Job Duties:**
- Supervision of Technician Work
 - Manage Labor Schedule
 - Work with Other Trades during Projects
 - Attendance of Safety Meetings
 - Attendance of Construction Meetings
 - Acts as a consistent liaison between client and BPS



**Better
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7) *Name:*

Tim Wrinkle

Position:

Senior Programmer/Field Engineer

Experience Summary:

- *20 years Embedded Systems Programming and Troubleshooting*
- *Extron, AMX & Crestron Systems Programming*
- *Integration and Troubleshooting of Control Systems*
- *9 years with BPS*

Educational Background:

- *A.S. Degree Electronics*
- *AMX Programming Certification*
- *Crestron Programming Certification*
- *Polycom Vortex Technical Training*
- *School of Audio Visual Technologies for System Designers Certification, Extron*

Typical Job Duties:

- *Configuration/Programming of Control Systems*
- *Development of Graphical User Interfaces (GUI) for Touch Screen Controllers*
- *Development of Enterprise LAN Monitoring of Networked A/V Equipment*
- *Produce Un-Compiled Program Files for Client Filing*
- *Engineering Oversight of Field Technicians*
- *Custom Fabricated Solutions That are Needed in the Field as They Relate to the Changing Conditions of the Job Site or Additional Requirements of Functionality*
- *Coordination in the Field with Other Trades as They Relate to the A/V Portion of the Project*



**Better
Presentation
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8) *Name:*

Rich Nealson

Position:

Lead Installer

Experience Summary:

- 20 years A/V industry experience in rack fabrication and system integration installation
- 10 years with BPS

Educational Background:

- Certification in Machine Tool Technology
- Mechanical Drafting
- Video/Audio Technology Classes
- Computer Application Classes

Typical Job Duties:

- Configure Rack Mounted Equipment Prior to Being Delivered Onsite
- Dressing Cables
- Terminating Patch Cables
- Initial System Testing
- Patch Panel Fabrication
- Trouble Shooting of Existing A/V Equipment
- Projector Lamp Replacement
- Projector Filter Cleaning
- Impedance Testing for Speakers



**Better
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- 9) **Name:** **Shawn Hoehne**
Position: *A/V Equalization & Commissioning Technician*
Experience Summary:
 - 8 years in A/V as Technician
 - 1 year as A/V Equalization and Commissioning**Educational Background:**
 - B.S. at UC Davis
 - DMC-4K Certified Designer**Typical Job Duties:**
 - Testing of the A/V System Post Installation Preprogramming
 - Testing Speaker Noise Levels
 - Testing Speaker Polarity
 - Testing HDMI and HDCP Signal Path and EDID Configurations,
 - Digital Sound Processing (DSP) Configuration
 - Audio Conferencing SIP Configuration (Along with Client Telecom Staff),
 - IP Address Assignment (Along with Client Telecom Staff)
 - Trouble Shooting of Existing A/V Equipment
 - Projector Lamp Replacement
 - Projector Filter Cleaning
 - Impedance Testing for Speakers



**Better
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10)Name:

Efrain Morales

Position:

Lead Technician

Experience Summary:

- 9 years in A/V as Lead Technician
- 9 years with BPS

Educational Background:

- Barco OI/OVL Video Wall Certified
- Extron Technician Training

Typical Job Duties:

- Run/Terminate Cabling
- Mounting Displays
- Installing Microphones
- Physical Installation of A/V Equipment
- Trouble Shooting of Existing A/V Equipment
- Projector Lamp Replacement
- Projector Filter Cleaning
- Impedance Testing for Speakers

11)Name:

Gilbert Morales

Position:

Technician

Experience Summary:

- 4 years in A/V Field
- 4 years with BPS

Typical Job Duties:

- Run/Terminate Cabling
- Mounting Displays
- Installing Microphones
- Physical Installation of A/V Equipment
- Trouble Shooting of Existing A/V Equipment
- Projector Lamp Replacement
- Projector Filter Cleaning
- Impedance Testing for Speakers



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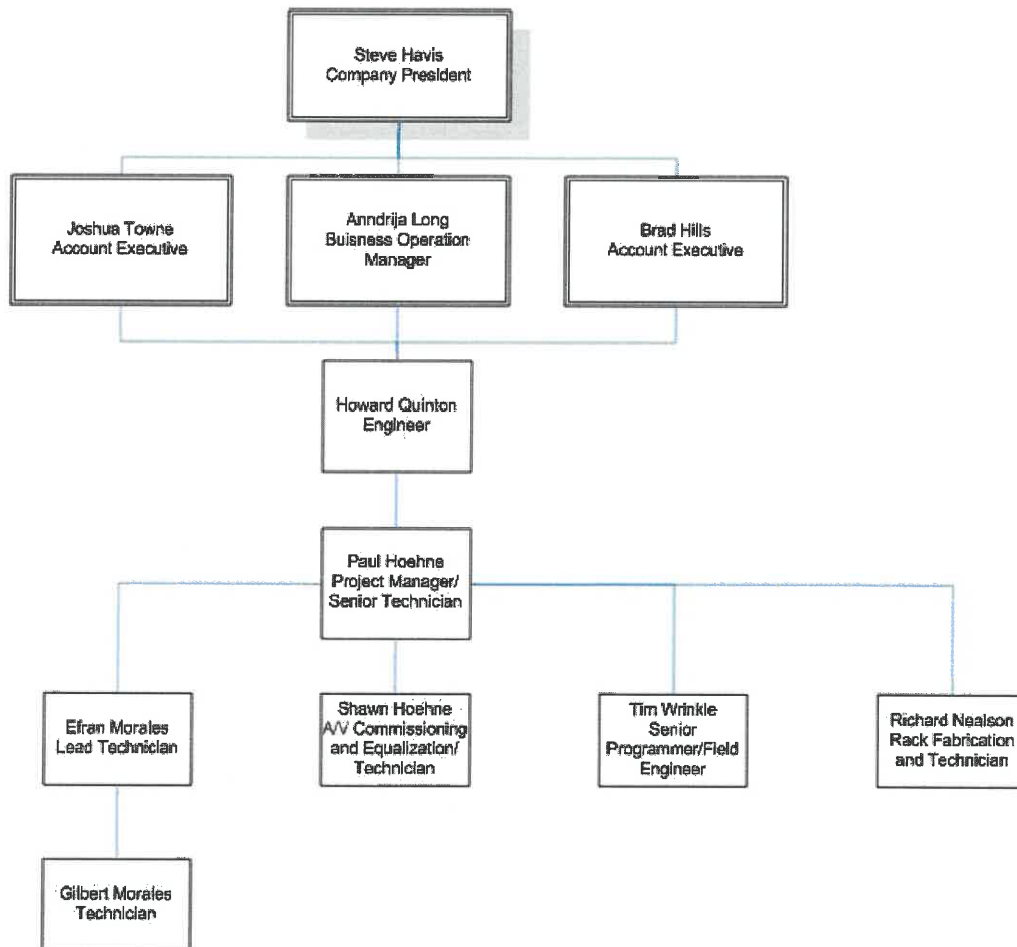
Qualifications of Sub-Consultant Team

- 1) **Name:** **Phuji Huynh**
Position: *Principal Programmer, Phulogic Programming*
Experience Summary:
- 7 years Running Phulogic
 - Extron & Crestron Systems Programming
 - Integration and Troubleshooting of Control Systems
 - 12 years in the A/V System Controls Field
- Educational Background:**
- B.S. Degree Electronics
 - AMX Programming Certification
 - Crestron Programming Certification
- Typical Job Duties:**
- Configuration/Programming of Control Systems
 - Development of Graphical User Interfaces (GUI) for Touch Screen Controllers
 - Development of Enterprise LAN Monitoring of Networked A/V Equipment
 - Produce Un-Compiled Program Files for Client Filing
- 2) **Name:** **Luke Saxelby**
Position: *Senior Consultant, J.C. Brennan & Associates*
Experience Summary:
- 9 years as Senior Consultant at J.C. Brennan & Associates
 - 12 years in the Acoustic Consultant Field
- Educational Background:**
- B.S. Degree Mechanical Engineering
- Typical Job Duties:**
- ANSI type 1 Sound Level Measurement
 - Computer Modeling of Noise Impacts
 - GIS Mapping



**Better
Presentation
Systems, Inc.**

Better Presentation Systems, Inc. Organization Chart:



BPS office is located at 2008 Opportunity Drive #170 in Roseville, California. All BPS staff members live within a 30 minute drive of the office. This gives BPS an advantage when supporting local businesses and government agencies.



**Better
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Proposal Understanding

BPS has firsthand knowledge of the projects that the City of Roseville desires to have installed and supported, and the services required to achieve these projects. BPS believes that the City of Roseville desires a contractor that will provide an accurate needs analysis, design a robust, easy to use, and budget conscious system, then work towards active project management to complete the project on time and on budget, and last maintain the A/V system. Strong communication is essential with each of the previously stated needs and is the strong suit of BPS.

As with many government agencies, there are a few challenges that any contractor will encounter. A problem that is seen far too often are large A/V systems that are unused by staff. The causes of system abandonment can be tracked down to a few overlooked flaws. One flaw is being too complex/poor user interface. The other common flaw is not designing an A/V system with enough connectivity to add the newest piece of technologies. BPS has been working with The City of Roseville staff to create a resolution to these issues. BPS has created a few A/V system templates that will sufficiently cover the needs of most all philosophies of use, have consistent user controls so staff can be train once and use multiple systems, and finally have some extra connectivity for connection of future, state of the art equipment. Using room templates also has the added benefit of having similar equipment from room to room and thus, a few spare pieces of equipment can ensure uptime for the systems on the same template. Furthermore, using equipment with room for expansion is a small cost when compared to large alterations to retrofit a system with new, larger components with sufficient connectivity.

Conversely, BPS also understands that the template formula will not be conducive to large scale, complex projects such as the EOC modernization at the RUEC. BPS is also at home and comfortable with the challenges that these projects produce. The keys to success at the large projects are three fold: impeccable upfront engineering, exceptional project management, and perfectly executed control system design and implementation. Engineering will set the foundation for the A/V system and allow avoidance of any roadblocks or short comings. Another result of such engineering is the ability to prefabricate the system at BPS to ensure the mocked up system can be tested prior to arriving onsite. Next, project management will set the project timelines and expectations, and execute consistent communication, which is at the heart of BPS project manager's duty. Lastly, control system design is where the rubber hits the road and is the product that City staff will lay their hands on. It cannot be understated how important the implementation of the control interface can be to a project; it truly is a make or break aspect to the system. BPS holds its control system programming paramount and spends countless hours scrutinizing how the system GUI will be best laid out and how to simplify even the most complex control scenarios.



**Better
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Systems, Inc.**

Proposal Implementation

BPS has decades of A/V system integration that have led to the following implementation model;

- Client will contact the account executive and initiate a site walk of a potential A/V project.
- The account executive will determine if it is necessary to include the project manager or engineer to the site walk.
- At the site walk the account executive will perform a needs assessment. The assessment will cover: construction of the A/V system environment, identify existing components, identify any deficiencies or functionalities that the current system lacks, identify the intended use of the A/V system, investigate what type of content will be shown or heard on the system, inquire as to what type of staff or public will use the system, determine the need, if any, for ADA compliant devices, and other pertinent data collection.
- Post needs assessment; the account executive will work with the engineer to provide presale engineering support. The engineer will identify the system components, formulate component locations and mounting details, figure wire pathways, and identify any other needed areas of attention.
- Next the account executive will engage the project manager to formulate; project timeline, estimation of needed labor hours, and allocation of staff.
- The account executive will then engage the senior programmer to establish how the GUI will work and look to accomplish the intended functionality the client has requested.
- The account executive will then compile the information into a scope of work and present it to the client. The client will then review the scope and submit any needs, changes, errors, changes in functionality, or confirm acceptance of the scope of work.
- The account executive will receive a purchase order or deposit and engage the engineer in producing system drawings, documentation, etc. Bonding documentation will be produced if needed, submittals arranged, and other documentation and administrative work commenced.
- After completion of the system documents the account executive will turn the project over to the business operation manager for equipment procurement.



Better Presentation Systems, Inc.

- After procurement the project will be turned over to the project manager. The project manager will ensure the client is informed of equipment delivery dates and also coordinate with the client any wire pulling or prep work that needs to take place prior to the first days of the project.
- If possible the wiring pulling and infrastructure work will take place in tandem with receiving the equipment and fabrication of the rack equipment.
- After rack fabrication, the system will be mocked up, and initial programming will take place. This is a very important step that saves countless hours spent in the field. Mocking the system at BPS's office will allow staff to easily identify issues and problems prior to impacting other trades or worse, client delays.
- After ensuring the system is free of any bugs or errors, the technicians will integrate the components into the client's environment.
- Next the A/V commissioning and equalization technician will again verify that the system is working and passes audio, video, HDCP, EDID, and other critical communications. The commissioning and equalization will also set IP addresses, configure SIP for teleconferencing, and in general work alongside client IT staff to adapt the A/V system to the client's IT environment. At this time the final red line revisions will be made to the field drawings and will then be made into as-builts by the engineer.
- The programmer will then finalize his portion of the project. Testing code as he works with any 3rd party systems, i.e. lighting, HVAC, blind, privacy glass, etc.
- Next the A/V commissioning and equalization technician will put the system through a final stage of testing which will produce a report that will be given to the client and will serve as a part of the final acceptance documentation.
- Last will be training and close out documentation. The account manager and project manager will deliver the training, owner's manuals, and sign off documents to the client for acceptance.



**Better
Presentation
Systems, Inc.**

**Attachment C
RATE SCHEDULE**

Labor	Hourly Rate	Overtime Hourly Rate
Project Management	\$92.00	\$130.00
Project Design and Engineering	\$ <u>115.00</u>	\$ <u>150.00</u>
Programming	\$ <u>120.00</u>	\$ <u>160.00</u>
A/V Equalization and Commissioning	\$ <u>98.00</u>	\$ <u>140.00</u>
Prevailing Wage Field Labor	\$ <u>95.00</u>	\$ <u>135.00</u>
Shop Labor	\$ <u>60.00</u>	\$ <u>90.00</u>
Miscellaneous	\$ <u>95.00</u>	\$ <u>135.00</u>

Minimum Service Fee \$ 200.00

Subcontractor Markup (if used) 15 %

Materials provided by the Contractor shall be billed on a "cost plus" basis. Indicate your percentage markup to the actual cost of materials. Note: Percentage markup shall include any travel time needed for pickup and delivery of materials.

Material Percentage Markup: 16 %



**Better
Presentation
Systems, Inc.**

Required Statements and Documents

Better Presentation Systems, Inc. assures that the designated team, including sub-consultants and sub-contractor will be used for this project. Departure or reassignment of, or substitution for, any member of the designated team, sub-consultant or sub-contractor shall not be made without the prior written approval of the City of Roseville.

Better Presentations Systems, Inc. hereby declares there is no conflict of interest between any City of Roseville employee and the BPS as described in section 9.4 (marked 10.4 in the RFP).

Better Presentation Systems, Inc. will fulfill the insurance and indemnification requirements set for by the City of Roseville as referenced in section 9.7 (marked 10.7 in the RFP) and outlined in Attachment B.

The information contained in this proposal is understood to be released for public disclosure. The contents of this bid package are not proprietary.

Attachment C

RATE SCHEDULE

Labor	Hourly Rate	Overtime Hourly Rate
Project Management	\$92.00	\$130.00
Project Design and Engineering	\$ <u>115.00</u>	\$ <u>150.00</u>
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A/V Equalization and Commissioning	\$ <u>98.00</u>	\$ <u>140.00</u>
Prevailing Wage Field Labor	\$ <u>95.00</u>	\$ <u>135.00</u>
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Materials provided by the Contractor shall be billed on a "cost plus" basis. Indicate your percentage markup to the actual cost of materials. Note: Percentage markup shall include any travel time needed for pickup and delivery of materials.

Material Percentage Markup: 16 %



**Better
Presentation
Systems, Inc.**

Exceptions

Better Presentation Systems, Inc. takes the prevailing wage labor determinations when calculating labor rate increases. The prevailing wage labor determination is set by the DIR (Department of Industrial Relations).



**Better
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Competency of Proposer

Better Presentation Systems, Inc. has no pending liens, bankruptcies, stop payment notices, judgments, foreclosures, lawsuits, or any other similar actions filed or resolved in the past seven years. Better Presentations Systems, Inc. has never been terminated for breach of contract.

May 13, 2020

Better Presentation Systems, Inc
Attn: Joshua Towne
2008 Opportunity Drive, Suite 170
Roseville, CA 95678

RE: CONTRACT PURCHASE AGREEMENT– Audio Visual Services

Enclosed is the fully executed agreement referenced above.

If you have any questions, please contact Planning and Policy Technician Pete McLemore at 916-774-5431.

SONIA OROZCO, MMC
CITY CLERK

By:



Katrina Six
Deputy City Clerk

cc: Pete McLemore- Planning and Policy Technician
Joanna Oukrop- Purchasing

RESOLUTION NO. 20-274

APPROVING AMENDMENT NO. 1 TO SERVICE AGREEMENT BETWEEN THE CITY OF ROSEVILLE AND BETTER PRESENTATIONS SYSTEMS, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, Amendment No. 1 to Service Agreement (S1909066) for audio visual services, between the City of Roseville and Better Presentations Systems, Inc., has been reviewed by the Council;

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said service agreement amendment is approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 2020, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



PURCHASING
CITY OF ROSEVILLE

2005 HILLTOP CIRCLE, ROSEVILLE, CA 95747
(916) 774-5720 • TDD (916) 774-5220 • FAX (916) 774-5736

**SERVICE AGREEMENT
AMENDMENT**

SERVICE AGREEMENT No: **S1909066**
AMENDMENT No.: **1**

SERVICE LOCATION: **AS DIRECTED**

Contractor No.: **12105**

SUBMIT ALL INVOICES TO:
CITY OF ROSEVILLE
Finance Department
311 Vernon Street
Roseville, CA 95678

Contractor License No.: _____

Business License No.: _____

Telephone No.: **(916)782-6444** Fax: _____

Department: **VARIOUS**

Contractor: **BETTER PRESENTATION SYSTEMS, INC.**
ATTN: JOSHUA TOWNE
2008 OPPORTUNITY DR., STE. 170
ROSEVILLE, CA 95678
joshua@betteravsystems.com

Acct. Code: **VARIOUS**

Buyer: **JOANNA OUKROP**
Phone: **(916)774-5745**



Service Agreement Number **S1909066** ("Agreement"), which was executed on **3/30/19** is hereby modified as follows:

Select all provisions that apply:

☒ The term of the Agreement is extended for an additional year, and the expiration date of the Agreement is changed from **1/20/20** to **1/20/21**.

☒ The Agreement terms and conditions are modified to include the following clause:

CONSULTANT agrees to defend and indemnify CITY if, despite the parties intent and practice, any venue, agency, or court with competent jurisdiction determines that CONSULTANT and/or any of its agents, officers, employees, volunteers, independent contractors, or subcontractors, are characterized as employee(s) of CITY.

CONSULTANT and CITY agree that: (a) CONSULTANT is free from the control and direction of CITY in connection with the performance of the work; (b) CONSULTANT is providing services directly to CITY; (c) CONSULTANT has and will maintain at all relevant times a business license; (d) CONSULTANT maintains a business location that is separate from CITY; (e) CONSULTANT is customarily engaged in an independently established business of the same nature as that involved in the work performed hereunder; (f) CONSULTANT actually contracts with other businesses to provide the same or similar services and maintains a clientele without restrictions from CITY; (g) CONSULTANT advertises and holds itself out to the public as available to provide the same or similar services; (h) CONSULTANT provides its own tools, vehicles, and equipment to perform the services; (i) CONSULTANT has negotiated its own rates; (j) CONSULTANT set its own hours and location of work in accomplishing CITY's on-call needs; and (k) CONSULTANT has the right to control the manner and means of accomplishing the result desired and exercises its own expert independent judgement.

All other provisions of the Agreement shall remain unchanged and in full force and effect.

CONTRACTOR:

By: SE / J

Title: President

By: _____

Title: _____

CITY OF ROSEVILLE,
A MUNICIPAL CORPORATION:

By: _____

Dominick Casey
City Manager

Distribution: 1- Purchasing, 1 - Contractor, 1 - Originating Dept



COUNCIL COMMUNICATION

CC #: 0865
File #: 0203-04

Title: Heating, Ventilation and Air Conditioning Maintenance Services - Service Agreement Amendment
Contact: Tisha Chinn 916-774-5702 tchinn@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.4.

RECOMMENDATION TO COUNCIL

Staff is requesting Council adopt a resolution to approve Amendment No. 1 to Service Agreement S2008043 to incorporate the COVID-19 language, and authorize the City Manager to execute it.

BACKGROUND

In May of 2018, staff solicited Request for Proposals (RFP) for Heating, Ventilation and Air Conditioning (HVAC) maintenance, repair and replacement services and one of the awarded bidders was ACCO Engineered Systems Inc. Staff is requesting approval of Amendment No. 1 of service agreement S2008043 to add COVID-19 language to the agreement for the purchase of upgraded air filters in all City facilities in March 2020. The COVID-19 language is included in the contract as Exhibit B contract provisions and will allow the City to request disaster assistance reimbursement for the filters.

FISCAL IMPACT

The maximum contract amount for this agreement is \$350,000.00. The work is funded through the approved FY2019-20 Building Maintenance, Environmental Utilities, Electric, and Park Maintenance budgets.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378. An amendment to a service agreement for heating, ventilation and air conditioning meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Tisha Chinn, Administrative Technician

Jason Shykowski, Public Works Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Resolution No. 20-276

Amendment - ACCO Engineered Systems

RESOLUTION NO. 20-276

APPROVING AMENDMENT NO. 1 TO SERVICE AGREEMENT BETWEEN THE CITY OF ROSEVILLE AND ACCO ENGINEERED SYSTEMS, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, Amendment No. 1 to Service Agreement (S2008043) for heating, ventilation and air conditioning services, between the City of Roseville and ACCO Engineered Systems, Inc., has been reviewed by the Council;

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said service agreement amendment is approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 2020, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



PURCHASING
CITY OF ROSEVILLE

**SERVICE AGREEMENT
AMENDMENT**

2005 HILLTOP CIRCLE, ROSEVILLE, CA 95747
(916) 774-5720 • TDD (916) 774-5220 • FAX (916) 774-5736

SERVICE AGREEMENT No: S2008043
AMENDMENT No: 1

SERVICE LOCATION: AS DIRECTED

Contractor No.: V41757

SUBMIT ALL INVOICES TO:
CITY OF ROSEVILLE
Finance Department
311 Vernon Street
Roseville, CA 95678

Contractor License No.: 120696
Business License No.: 807163

Telephone No.: 916-520-2100 Fax:

Department: PW-BUILDING MAINTENANCE

Email address: tjans@accoes.com
Contractor: ACCO ENGINEERED SYSTEMS, INC.
ATTN: TRACEY JANS
9290 BEATTY DRIVE
SACRAMENTO, CA 95826

Acct. Code: VARIOUS

Buyer: TIFFANY VALDEZ
Phone: 916-774-5708

Service Agreement Number S2008043 ("Agreement"), which was executed on, 5/7/19, is hereby modified as follows:

Select all provisions that apply:

- ☒ The purpose of this modification is to insert Exhibit B Contract Provisions for Non-Federal Entity Contracts under Federal Awards revised 4/2/20 is herein made part of this purchase and fully incorporated by reference.

The contract price does not include delays and increased costs associated with COVID-19 impacts and the related government orders, including additional labor, materials, or equipment, resulting from previous and ongoing COVID-19 events. Such impacts may include but are not limited to, any existing or future government actions or orders, or disruptions to supply chains for materials and equipment, and such events are a consequence of the ongoing and evolving Covid-19 pandemic and its impending effects. All such delays impacting ACCO's performance under this contract shall be deemed excusable. In light of the foregoing, both parties agree to negotiate and execute mutually acceptable change orders reflecting an equitable resolution of these impacts.

All other provisions of the Agreement shall remain unchanged and in full force and effect.

CONTRACTOR:

By: Ronald Falasca
Title: RONALD FALASCA, Sr. Vice President
By: Helen Leonard
Title: Assistant Secretary

CITY OF ROSEVILLE,
A MUNICIPAL CORPORATION:

By: Dominick Casey
City Manager

Distribution: 1- Purchasing, 1 - Contractor, 1 - Originating Dept

Exhibit B
Revised 4/2/20

Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

1. For purposes of this Exhibit B, the terms contractor, consultant, supplier, and vendor shall be used interchangeably and specifically refer to the party furnishing good and/or services to the City of Roseville (hereinafter "City") pursuant to the Agreement.
2. **Contractual remedies for breach of the Agreement:** Should any party breach any of the terms of the Agreement, the non-breaching party may commence any legal action against the other party arising out of the breach of the Agreement or the performance thereof. The prevailing party in such action shall be entitled to recover its reasonable litigation expenses, including but not limited to, court costs, expert witness fees, discovery expenses, and attorneys' fees. Any action arising out of the Agreement shall be brought in Placer County, California, regardless of where else venue may lie. This Agreement shall be governed by and construed in accordance with the laws of the State of California.
3. **Termination for cause or convenience:** At any time during the term of this Agreement, the City has the right to terminate this Agreement, provided contractor is given thirty (30) days' written notice. City's termination shall be without further liability to City, however contractor shall be entitled to all costs reasonably incurred prior to the date of termination. contractor acknowledges that City may terminate this Agreement should funds not be appropriated by its governing body to continue services under this Agreement.
4. **Equal Employment Opportunity:** The regulation at 41 C.F.R. Part 60-1.4(b) requires the insertion of the following contract clause.

During the performance of this Agreement, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for

employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The contractor will comply with all provisions of Contractor Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The contractor will furnish all information and reports required by Contractor Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further City contracts or federally assisted construction contracts in accordance with procedures authorized in Contractor Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Contractor Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Contractor Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect

to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local City, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such City which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Contractor Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, City contracts and federally assisted construction contracts pursuant to the Contractor Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Contractor Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

5. **Davis Bacon Act:** If the Agreement is a prime construction contracts in excess of \$2,000, contractor agrees:
 - a. All transactions regarding this contract shall be done in compliance with the Davis-Bacon Act (40 U.S.C. 3141- 3144, and 3146-3148) and the requirements of 29 C.F.R. pt. 5 as may be applicable. The contractor shall comply with 40 U.S.C. 3141-3144, and 3146-3148 and the requirements of 29 C.F.R. pt. 5 as applicable.
 - b. Contractor is required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor.

- c. Additionally, contractor is required to pay wages not less than once a week.
6. **Copeland Anti-Kickback Act:** If the Agreement is a contract for construction or repair in excess of \$2,000, contractor agrees:
- a. Contractor. The contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this contract.
 - b. Subcontracts. The contractor or subcontractors shall insert in any subcontracts the clause above and such other clauses as FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.
 - c. Breach. A breach of the contract clauses above may be grounds for termination of the Agreement, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. § 5.12.
7. **Contract Work Hours and Safety Standards Act:** This section applies if the Agreement is in excess of \$100,000 under grant and cooperative agreement programs and involves the employment of mechanics or laborers. It is applicable to construction work. These requirements do not apply to the purchase of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.
- (1) *Overtime requirements.* No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
 - (2) *Violation; liability for unpaid wages; liquidated damages.* In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.
 - (3) *Withholding for unpaid wages and liquidated damages.* The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work

Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

- (4) *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

8. Clean Air Act and Federal Water Pollution Control Act: If the Agreement is in excess of \$150,000:

- a. The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq., and the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- b. The contractor agrees to report each violation to the City and understands and agrees that the City will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.
- c. The contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

9. Debarment and Suspension:

- (1) This Agreement is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- (2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (3) This certification is a material representation of fact relied upon by the City. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the City, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The contractor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions.

10. Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended):

If the Agreement is \$100,000 or more, contractor shall file the required certification under the Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352 (as amended). Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or

organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

11. Procurement of Recovered Materials:

- i. In the performance of this contract, the contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:
 - 1. Competitively within a timeframe providing for compliance with the contract performance schedule;
 - 2. Meeting contract performance requirements; or
 - 3. At a reasonable price.
- ii. Information about this requirement, along with the list of EPA- designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.
- iii. The contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

12. Access to Records:

- (1) The contractor agrees to provide City, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- (2) The contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- (3) The contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.
- (4) In compliance with the Disaster Recovery Act of 2018, the City and the contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

13. No Obligation by Federal Government:

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

14. Program Fraud and False or Fraudulent Statements or Related Acts:

The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract.



COUNCIL COMMUNICATION

CC #: 0862
File #: 0203-06

Title: Technology Equipment - Purchase Order Renewal
Contact: Sage Armstrong 916-774-5679 sarmstrong@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.5.

RECOMMENDATION TO COUNCIL

Staff recommends City Council authorize the renewal of an open purchase order with Dell Marketing, L.P. for Roseville Electric's purchases of general technology equipment and supporting software on an as-needed basis. This open purchase order with Dell Marketing, L.P. uses the following competitively-bid cooperative contract which has recently been extended through July 31, 2021: Dell Marketing, LP, utilizing Western States Contracting Alliance - National Association of State Procurement Officials (WSCA-NASPO) ValuePoint Cooperative master agreement number MNWNC-108 with the State of California Participating Addendum number 7-15-70-34-003.

BACKGROUND

Roseville Electric supports and maintains industrial control systems which provide critical information on the output, status, and conditions of distribution and generation operational environments. These control systems utilize proprietary and general technology equipment including network routers and switches, desktop computers, servers, and accessories. In order to take advantage of competitive pricing for general technology equipment and related software, RE is utilizing open purchase orders, piggybacking on the following existing contract: Dell Marketing, LP, utilizing Western States Contracting Alliance - National Association of State Procurement Officials (WSCA-NASPO) ValuePoint Cooperative master agreement number MNWNC-108 with the State of California Participating Addendum number 7-15-70-34-003. This contract is extended through July 31, 2021, so staff is seeking approval for renewing the purchase order by continuing to utilize the extended contract.

In addition, the Dell Marketing, LP purchase order was initially authorized by Council on a combined basis with vendor CDW-G on November 16, 2018. Roseville Electric is seeking to renew this purchase order on an individual basis due to two different renewal dates between Dell Marketing, LP and CDW-G.

FISCAL IMPACT

The total cost of the hardware and software purchases will not exceed \$120,000. Funding is included in the Electric Operations Fund FY2020-21 budget.

ENVIRONMENTAL REVIEW

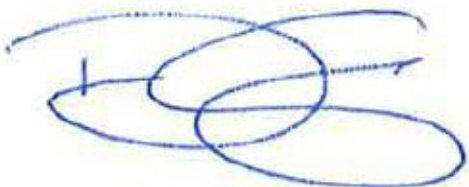
The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378.

A purchase order renewal meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Sage Armstrong, Electric Technology System Administrator

Michelle Bertolino, Electric Utility Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Naspo ValuePoint Master-Agreement MNWNC-108

Calif. Participating Addendum 1448052476

AMENDMENT NO. 2 TO CONTRACT MNWNC-108

THIS AMENDMENT is by and between the State of Minnesota, acting through its commissioner of Administration ("State"), and Dell Marketing L.P., One Dell Way, Mailstop RR1-33 Legal, Round Rock, TX 78682 ("Contract Vendor").

WHEREAS, the State has a Contract with the Contract Vendor identified as Contract No. MNWNC-108, April 1, 2015, through March 31, 2020 ("Contract"), to provide Computer Equipment: Desktops, Laptops, Tablets, Servers, and Storage, including Related Peripherals and Services; and

WHEREAS, Minn. Stat. § 16C.03, subd. 5, affords the commissioner of Administration, or delegate pursuant to Minn. Stat. § 16C.03, subd. 16, the authority to amend contracts; and

WHEREAS, the terms of the Contract allow the State to amend the Contract as specified herein, upon the mutual agreement of the Office of State Procurement and the Contract Vendor in a fully executed amendment to the Contract.

NOW, THEREFORE, it is agreed by the parties to amend the Contract as follows:

1. That Contract No. MNWNC-108 is extended through July 31, 2021, at the same terms, conditions, and prices.

This Amendment is effective beginning April 1, 2020, or upon the date that the final required signatures are obtained, whichever occurs later, and shall remain in effect through contract expiration, or until the Contract is canceled, whichever occurs first.

Except as herein amended, the provisions of the Contract between the parties hereto are expressly reaffirmed and remain in full force and effect.

IN WITNESS WHEREOF, the parties have caused this Amendment to be duly executed intending to be bound thereby.

1. DELL MARKETING L.P. The Contractor certifies that the appropriate person(s) have executed this Amendment on behalf of the Contractor as required by applicable articles, bylaws, resolutions, or ordinances. By: <u>[Signature]</u> Signature: <u>Bodie Robbins</u> Printed Name: <u>Sr. Contract Manager</u> Title: <u>12/19/19</u> Date: _____ By: _____ Signature: _____ Printed Name: _____ Title: _____ Date: _____	2. OFFICE OF STATE PROCUREMENT In accordance with Minn. Stat. § 16C.03, subd. 3. By: <u>[Signature]</u> Title: <u>Acquisition Management Specialist</u> Date: <u>1.27.2020</u> 3. COMMISSIONER OF ADMINISTRATION Or delegated representative. By: <u>[Signature]</u> Date: <u>1/27/2020</u>
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AMENDMENT NO. 1 TO CONTRACT NO. MNWNC-108

THIS AMENDMENT is by and between the State of Minnesota, acting through its commissioner of Administration ("State"), and Dell Marketing L.P., One Dell Way, Mailstop RR1-33 Legal, Round Rock, TX 78682 ("Contract Vendor").

WHEREAS, the State has a Contract with the Contract Vendor identified as Contract No. MNWNC-108, April 1, 2015, through March 31, 2017 ("Contract"), to provide Computer Equipment: (Desktops, Servers, and Storage including Related Peripherals and Services); and

WHEREAS, Minn. Stat. § 16C.03, subd. 5, affords the commissioner of Administration, or delegate pursuant to Minn. Stat. § 16C.03, subd. 16, the authority to amend contracts; and

WHEREAS, the terms of the Contract allow the State to amend the Contract as specified herein, upon the mutual agreement of the Materials Management Division and the Contract Vendor in a fully executed amendment to the Contract.

NOW, THEREFORE, it is agreed by the parties to amend the Contract as follows:

1. That Contract No. MNWNC-108 is extended through March 31, 2020, at the same terms and conditions.
2. The Contract Vendor shall provide Computer Equipment: (Desktops, Servers, and Storage including Related Peripherals and Services) at the prices set forth on the attached Exhibit B, Pricing Schedule.

This Amendment is effective beginning April 1, 2017, or upon the date that the final required signatures are obtained, whichever occurs later, and shall remain in effect through contract expiration, or until the Contract is canceled, whichever occurs first.

Except as herein amended, the provisions of the Contract between the parties hereto are expressly reaffirmed and remain in full force and effect.

IN WITNESS WHEREOF, the parties have caused this Amendment to be duly executed intending to be bound thereby.

1. DELL MARKETING, L.P. The Contractor certifies that the appropriate person(s) have executed this Amendment on behalf of the Contractor as required by applicable articles, bylaws, resolutions, or ordinances. By: <u><i>D. Wigington</i></u> Signature <u>Diane Wigington</u> Printed Name Title: <u>Contracts Program Manager</u> Date: <u>02/14/2017</u> By: _____ Signature Printed Name _____ Title: _____ Date: _____	2. OFFICE OF STATE PROCUREMENT In accordance with Minn. Stat. § 16C.03, subd. 3. By: <u><i>Andy Doran</i></u> Title: <u>Acquisition Management Specialist</u> Date: <u>2/15/17</u> 3. COMMISSIONER OF ADMINISTRATION Or delegated representative. By: <u><i>Lucas J. Jarameth</i></u> Date: <u>2/16/2017</u>
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MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD

1. BASELINE PRICING DELL RETAIL PRICE LIST		
LINK: http://ftpbox.us.dell.com/slg/weekly/dellpricereport.pdf		
2. BAND DISCOUNTS – (CATEGORY EXCEPTIONS APPLICABLE IN ALL BANDS)		
	DELL CATEGORY	MINIMUM DISCOUNT
BAND 1 DESKTOP	A	15%
BAND 2 LAPTOP	A	15%
BAND 3 TABLET	H	4%
BAND 4 SERVER	A	13.5%
BAND 5 STORAGE	A	13.5%
IMPORTANT: The minimum discount is provided, refer to Contract Vendor's Website for any additional discounts and request a quote for bulk/volume discounts. All prices shall be FOB Destination, prepaid and allowed (with freight included in the price). If there is a special case where inside delivery fee must be charged, the Contract Vendor will notify the customer in advance.		
CATEGORY EXCEPTIONS:		
Toner	F	1.5%
Value Latitude, OptiPlex, Workstation, Selected Products	H	4%
Selected Promo Offers; Inspiron; Selected Latitude; SC PowerEdge; Selected Dell EMC; Dell Branded Peripherals/Imaging: PowerConnect, Axim, Projector, Printer	S	2.5%
Spare Parts, selected Dimension Brand	U, W, Z	5%
3. THIRD PARTY PRODUCTS - (APPLICABLE IN ALL BANDS)	M	5.5%
CATEGORY EXCEPTIONS:		
Selected Third Party Products (software and peripherals)	X	5%
Selected Third Party Printers	F	1.5%
4. SERVICES		
Services are at the option of Participating States. Participating Addendums by each State may address service agreement terms and related travel. States may negotiate additional services. The majority of Dell-branded hardware includes a one-year warranty. Customer may purchase warranty upgrades for 2, 3, 4 or 5 years for certain Dell-branded hardware as offered by Dell. For Dell standard warranty information, see http://www.dell.com/learn/us/en/uscorp1/solutions/limited-hardware-warranties		
Selected Service on Poweredge Departmental Servers; Directline Service; 4-Hr On-Site Critical Care Plus; Business Care Plus On-Site Service (all years)	O	13.3%
On-site – Next Business Day; On-site (extended yrs); Critical Care On-site Service (all yrs); other svcs	R, Z, Z1&ZS	.5%
5. LEASING		
Participating Addendum may identify if and how leasing agreement terms will be conducted.		
6. ADDITIONAL DISCOUNTS – Request a quote for discounts on bulk/volume purchases.		
a. Per Transaction Multiple Unit: Contact your Sales Representative for additional discounts for volume purchases.		
Minimum Dollar Volume Associated with Single Transaction	Maximum Dollar Volume Associated with Single Transaction	Cat A only, Single Transaction, Maximum of 10 ship to Locations
\$50,000.00	\$99,999.99	Greater than or Equal to 1%
\$100,000.00	\$199,999.99	Greater than or Equal to 2%
\$200,000.00	\$499,999.99	Greater than or Equal to 4%
\$500,000.00	\$999,999.99	Greater than or Equal to 6%
\$1,000,000.00	No Maximum	Greater than or Equal to 8%
b. Cumulative: Cumulative Discounts are managed at the Master Agreement Level based on total volume.		
Cumulative Dell Spend "Gates"	Category A Discount (Adjustment to the Matrix)	
Up to \$2B	13.5%	
\$2B to \$4B	14%	
\$4B to \$6B	14.5%	
\$6B to \$8B	15%	
\$8B to \$10B	15.5%	
Over \$10B	16%	
c. Other Discounts provided: For purchases made online via Dell.com, Dell offers an additional 0.5% per category, except for Category O. For online purchases of Category O Services, Dell will offer a 13.5% discount.		



STATE OF MINNESOTA
Materials Management Division
112 Administration Building
50 Sherburne Avenue
St. Paul, MN 55155
Voice: 651.296.2600
Fax: 651.297.3996



MINNESOTA WCSA-NASPO MASTER AGREEMENT AWARD

WITH

DELL MARKETING, L.P.

FOR

COMPUTER EQUIPMENT: (Desktops, Laptops, Tablets, Servers and Storage including Related Peripherals & Services)

To: Dell Marketing L. P.
One Dell Way
Mailstop 8707
Round Rock, TX 78682
Contract Vendor Administrator: Diane Wigington
Email: Diane.Wigington@dell.com
Phone: (512) 728-4805

CONTRACT NO:

MNWNC-108

CONTRACT PERIOD:

April 1, 2015, or upon final executed signatures, whichever is later

THROUGH

March 31, 2017

EXTENSION OPTION:

UP TO 36 MONTHS

You are hereby notified that your response to our solicitation, which opened January 31, 2014, is accepted. The following documents, in order of precedence, are incorporated herein by reference and constitute the entire Contract between you and the State: 1. A Participating Entity's Participating Addendum ("PA") A Participating Entity's Participating Addendum shall not diminish, change, or impact the rights of the Lead State with regard to the Lead State's contractual relationship with the Contract Vendor under the Terms of Minnesota WCSA-NASPO Master Agreement.; 2. Minnesota WCSA-NASPO Master Agreement (includes negotiated Terms and Conditions); 3. The Solicitation; and 4. the Contract Vendor's response to the Solicitation. These documents shall be read to be consistent and complementary. Any conflict among these documents shall be resolved by giving priority to these documents in the order listed above.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed intending to be bound thereby.

1. DELL MARKETING L. P.

The Contractor certifies that the appropriate person(s) have executed this Agreement on behalf of the Contractor as required by applicable articles, bylaws, resolutions, or ordinances.

By: Stephanie G. Miller

Signature
Stephanie G. Miller

Title: Contract Manager / Senior Manager

Date: 16 February 2015

By: _____

Signature

Printed Name

Title: _____

Date: _____

2. MINNESOTA MATERIALS MANAGEMENT DIVISION

In accordance with Minn. Stat. § 16C.03, subd. 3.

By: Joe Kahr

Title: Master Agreement Administrator

Date: 2/18/15

3. MINNESOTA COMMISSIONER OF ADMINISTRATION

Or delegated representative.

By: Original signed

Date: _____

MAR 03 2015

By Lucas J. Jannett



COMPUTER EQUIPMENT 2014-2019



MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD

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COMPUTER EQUIPMENT 2014-2019



MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD SUMMARY

1. **BACKGROUND.** The State of Minnesota, Department of Administration, Materials Management Division publicly posted a Request for Proposal on behalf of the State of Minnesota and WSCA-NASPO Cooperative Procurement Program ("WSCA-NASPO") resulting in a Master Agreement Award. After evaluation by a multi-state sourcing team the solicitation resulted in this Minnesota WSCA-NASPO Master Agreements with qualified manufacturers for:

Computer Equipment (Desktops, Laptops, Tablets, Servers, and Storage including related Peripherals & Services.

The original solicitation contains the requirements and definitions establishing the following Product Bands allowed on the Master Agreement. The configuration limits and restrictions for this Master Agreement are provided below. Participating Entities may revise these in their Participating Addendum. **Bands awarded are identified below:**

Band 1: Desktop	Band 3: Tablet	Band 5: Storage
Band 2: Laptop	Band 4: Server	

The original solicitation included Band 6: Ruggedized. This band has been removed and ruggedized equipment will be allowed in Bands 1-5. The original solicitation and responses may be found on the WSCA-NASPO Website.

2. **EFFECTIVE DATE:** The Master Agreement contract term will begin on April 1, 2015, or upon final executed signatures, whichever is later, through March 31, 2017 with the option to extend up to 36 months, upon agreement by both parties. Contract Sales may not begin until the Website, Product and Service Schedule and third party products have been approved by the Master Agreement Administrator.
3. **PARTICIPATION.** All authorized governmental entities in any State are welcome to use the resulting Master Agreements through WSCA-NASPO with the approval of the State Chief Procurement Official. Contract Vendors are able to sign Participating Addendums (PA) at the option of Participating States. Participating States reserve the right to add State specific terms and conditions and modify the scope of the contract in their Participating Addendum as allowed by the Master Agreement.
4. **CONFIGURATION DOLLAR LIMITS.** The following configuration limits apply to the Master Agreement. Participating States may define their configuration limits in their participating addendum. The Participating State's Chief Procurement Official may increase or decrease the configuration limits, as defined in their Participating Addendum. The Participating State will determine with the Contract Vendor how to approve these modifications to the State's Product and Service Schedule.

The dollar limits identified below are based on a **SINGLE** computer configuration. This is **NOT** a restriction on the purchase of multiple configurations (e.g. an entity could purchase 10 laptops @ \$10,000 for a total purchase price of \$100,000).

ITEM	CONFIGURATION*
Server	\$500,000
Storage	\$500,000
Desktops	\$ 10,000
Laptops	\$ 10,000
Tablets	\$ 5,000
Peripherals	\$ 5,000
Services	Addressed by each State in participating addendum

* Configuration is defined as the combination of hardware and software components that make up the total functioning system. Software purchases are considered a part of the configuration limit of the equipment.

5. **RESTRICTIONS.** The following restrictions apply to the Master Agreement. A Participating State may set further restrictions of products in their Participating Addendum. The Participating State will determine with the Contract Vendor how to approve these modifications to the State's Product and Service Schedule.

a. Software

1. Software is restricted to operating systems and commercial off-the-shelf (COTS) software and is subject to equipment configuration limits.
2. Software is an option which must be related to the procurement of equipment.
3. Software must be pre-loaded or provided as an electronic link with the initial purchase of equipment.
4. Software such as middleware which is not always installed on the equipment, but is related to storage and server equipment (Band 4&5) purchased, is allowed and may be procured after the initial purchase of equipment.

b. Services

1. Services must be related to the procurement of equipment.
2. Service limits will be addressed by each State.
3. Wireless phone and internet service is not allowed.
4. Cloud Services including acquisitions structured as managed on-site services are not allowed.
5. Managed Print Services are not allowed.

c. Third Party Products.

1. Contract Vendors can only offer Third Party Products in the bands they have been awarded.
2. Contract Vendor cannot offer products manufactured by another Contract Vendor holding a Minnesota WSCA-NASPO Master Agreement unless approved by the Lead State.

d. Additional Product/Services

1. Hardware and software required to solely support wide area network (WAN) operation and management are not allowed.
2. Lease/Rentals of equipment may be allowed and will be addressed by each State.
3. Cellular Phone Equipment is not allowed.
4. EPEAT Bronze requirement may be waived, on a State case by case basis, if approved by the State's Chief Procurement Officer.

6. **PARTNER UTILIZATION:** Each state represented by WSCA-NASPO that chooses to participate in this Master Agreement independently has the option of utilizing partners. Only partners approved by the Participating State may be deployed. The participating State will define the process to add and remove partners in their participating addendum.



COMPUTER EQUIPMENT 2014-2019



MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD

EXHIBIT A - TERMS & CONDITIONS

MASTER AGREEMENT TERMS AND CONDITIONS

A. GENERAL TERMS, CONDITIONS & INSTRUCTIONS

1. **ACCEPTANCE OF TERMS AND CONDITIONS.** The contents of the RFP and the response of the successful responder will become Master Agreement contractual obligations, along with the final Master Agreement, if acquisition action ensues. A statement of acceptance of the proposed Contract Terms and Conditions, unless taken exception to, as specified in the RFP must be included in the response. Any suggestions for alternate language shall be presented. The Lead State is under no obligation to accept wording changes submitted by the responder. The Lead State is solely responsible for rendering decisions in matters of interpretation on all terms and conditions. Any response which fails to comply with this requirement may be disqualified as nonresponsive.

All general proposal terms, specifications and WSCA-NASPO Terms & Conditions form a part of this RFP and will apply to any Master Agreements entered into as a result thereof.

2. **CONFLICT OF TERMS/ORDER OF PRECEDENCE:**

- a. A Participating Entity's Participating Addendum ("PA");
- b. Minnesota WSCA-NASPO Master Agreement (includes negotiated Terms & Conditions)
- c. The Solicitation including all Addendums; and
- d. Contract Vendor's response to the Solicitation

These documents shall be read to be consistent and complementary. Any conflict among these documents shall be resolved by giving priority to these documents in the order listed above. Contract Vendor terms and conditions that apply to this Master Agreement are only those that are expressly accepted by the Lead State and must be in writing and attached to the Master Agreement as an Exhibit or Attachment. No other terms and conditions shall apply, including terms and conditions listed in the Contract Vendor's response to the Solicitation, or terms listed or referenced on the Contract Vendor's website, in the Contract Vendor quotation/sales order or in similar documents subsequently provided by the Contract Vendor. The solicitation language prevails unless a mutually agreed exception has been negotiated.

3. **ADDENDA TO THE RFP.** Any addendum issued will become a part of the RFP. The Lead State may modify or clarify the RFP by issuing one or more addenda to all parties who have received the RFP. Each responder must follow the directions on the addendum. Addenda will be numbered consecutively in the order they are issued.
4. **AWARD.** The award of this solicitation will be based upon the total accumulated points as established in the RFP, for separate items, by grouping items, or by total lot, and where at its sole discretion the Lead State believes it will receive the best value. The Lead State reserves the right to award this solicitation to a single responder, or to multiple responders, whichever is in the best interest of the Lead State. It is the State's intent to award to multiple responders. The Lead State reserves the right to accept all or part of an offer, to reject all offers, to cancel the solicitation, or to re-issue the solicitation, whichever is in the best interest of the Lead State.

The Sourcing Team will make a recommendation on the award of this RFP. The commissioner of Administration or designee may accept or reject the recommendation of the Sourcing Team. The final award decision will be made by the Commissioner of Administration and the WSCA-NASPO Management Board.

5. **CLARIFICATION.** If a responder discovers any significant ambiguity, error, conflict, discrepancy, omission, or other deficiency in the RFP, the responder shall immediately notify the Acquisition Management Specialist in writing, as

specified in the introduction, of such error and request modification or clarification of the document. This notification is due no later than seven calendar days prior to the proposal due date and time.

Responders are cautioned that any activity or communication with a State employee or officer, or a member of the Evaluation Team, regarding this Solicitation's contents or process, is strictly prohibited and may, as a result, have its response rejected. Any communication regarding this Solicitation, its content or process, must be directed to the Acquisition Management Specialist listed in the Solicitation documents.

6. **COMPLETION OF RESPONSES.** A response may be rejected if it is conditional or incomplete. Responses that contain conflicting, false, or misleading statements or that provide references that contradict or do not support an attribute or condition stated by the responder, may be rejected.
7. **MASTER AGREEMENT ADMINISTRATOR.** The Master Agreement Administrator designated by WSCA-NASPO and the State of Minnesota, Department of Administration is: Susan Kahle. Direct all correspondence and inquiries, legal questions, general issues, or technical issues regarding this RFP to:

Susan Kahle
Acquisition Management Specialist
Department of Administration
Materials Management Division
50 Sherburne Avenue
112 Administration Building
St. Paul, MN 55155

Fax: 651.297.3996
E-mail: susan.kahle@state.mn.us

8. **DISPOSITION OF DATA SUBMITTED BY CONTRACT VENDOR.** All materials submitted in response to this RFP will become property of the Lead State and will become public record after the evaluation process is completed. The evaluation process is complete when negotiations with the selected vendors are final.

By executing this Contract, the Contract Vendor certifies and agrees that all information provided in the Contract and in response to the solicitation will be made public in accordance with the solicitation and that no information has been designated Trade Secret pursuant to the Minnesota Government Data Practices Act.

If the Contract Vendor submits information after execution of this Contract that it believes to be trade secret materials, as defined by the Minnesota Government Data Practices Act, Minn. Stat. § 13.37, the Contract Vendor must:

- clearly mark all trade secret materials at the time the information is submitted;
- include a statement with regard to the information justifying the trade secret designation for each item; and,
- defend any action seeking release of the materials it believes to be trade secret, and indemnify and hold harmless the Lead State, its agents and employees, from any judgments awarded against the Lead State in favor of the party requesting the materials, and any and all costs connected with that defense. This indemnification survives the Lead State's award of a Master Agreement. In submitting a response to the RFP, the responder agrees that this indemnification survives as long as the trade secret materials are in possession of the Lead State. The Lead State will not consider the prices submitted by the responder to be trade secret materials.

9. **DISPUTE RESOLUTION PROCEDURES.** Any issue a responder has with the RFP document, which includes, but is not limited to, the terms, conditions, and specifications, must be submitted in writing to and received by the Master Agreement Administrator prior to the opening due date and time. Any issue a responder has with the Master Agreement award must be submitted in writing to the Master Agreement Administrator within five working days from the time the notice of the intent to award is issued. This notice may be made by any of the following methods: notification by letter, fax or email, or posted on the Materials Management website, www.mmd.admin.state.mn.us. The Lead State will respond to any protest received that follows the above procedure. For those protests that meet the above submission requirements, the appeal process is, in sequence: The responsible Master Agreement Administrator, the Materials Management Division (MMD) Assistant Director, and the MMD Director.

10. **ELECTRONIC FILES TO DOWNLOAD, COMPLETE, AND RETURN.** Responders must download a Word/Excel document.

11. **ENTIRE AGREEMENT.** A written Master Agreement (including the contents of this RFP and selected portions of Contract Vendor's response incorporated therein by reference) and any written addenda thereto constitute the entire agreement of the parties to the Master Agreement.

12. IRREVOCABLE OFFER. In accordance with this Request for Proposal, and subject to all conditions thereof, the undersigned agrees that its response to this RFP, or any part thereof, is an irrevocable offer for 180 days following the submission deadline date unless stated otherwise in the RFP. It is understood and agreed that the response, or any part thereof, when accepted by the appropriate department and State officials in writing, may become part of a legal and binding Master Agreement between the undersigned vendor and the State of Minnesota.

13. MATERIAL DEVIATION. A responder shall be presumed to be in agreement with these terms and conditions unless it takes specific exception to one or more of the conditions. Submission by the responder of its proposed language shall not be viewed as an exception unless the responder specifically states in the response that its proposed changes are intended to supersede the terms and conditions.

RESPONDERS ARE CAUTIONED THAT BY TAKING ANY EXCEPTION THEY MAY BE MATERIALLY DEVIATING FROM THE REQUEST FOR PROPOSAL. IF A RESPONDER MATERIALLY DEVIATES FROM THE GENERAL TERMS, CONDITIONS AND INSTRUCTIONS OR THE WSCA-NASPO TERMS AND CONDITIONS AND/OR SPECIFICATIONS, ITS RESPONSE MAY BE REJECTED.

A material deviation is an exception to the Request for Proposal general or WSCA-NASPO terms and conditions and/or specifications that:

- a. gives the responder taking the exception a competitive advantage over other vendors; or,
- b. gives the Lead State something significantly different from that which the Lead State requested.

14. NONRESPONSIVE RESPONSES. Responses that do not comply with the provisions in the RFP may be considered nonresponsive and may be rejected.

15. NOTICES. If one party is required to give notice to the other under the Master Agreement, such notice shall be in writing and shall be effective upon receipt. Delivery may be by certified United States mail or by hand, in which case a signed receipt shall be obtained. A facsimile transmission shall constitute sufficient notice, provided the receipt of the transmission is confirmed by the receiving party. Either party must notify the other of a change in address for notification purposes. All notices to the Lead State shall be addressed as follows:

STATE OF MINNESOTA:

MN WSCA-NASPO COMPUTER EQUIPMENT CONTRACT ADMINISTRATOR
112 Administration Bldg.
50 Sherburne Avenue
St. Paul, MN 55155
651-296-2600

MASTER AGREEMENT TERMS AND CONDITIONS

B. WSCA-NASPO TERMS AND CONDITIONS

1. **ADMINISTRATIVE FEES.** The Contract Vendor shall pay a WSCA-NASPO Administrative Fee of one-tenth of one percent (0.1% or 0.001) in accordance with the Terms and Conditions of the Master Agreement no later than 60 days following the end of each calendar quarter. The WSCA-NASPO Administrative Fee shall be submitted quarterly and is based on sales of products and services (less any charges for taxes or shipping). The WSCA-NASPO Administrative Fee is not negotiable. This fee is to be included as part of the pricing submitted with proposal.

Additionally, some states may require an additional fee be paid directly to the state on purchases made by Purchasing Entities within that state. For all such requests, the fee level, payment method and schedule for such reports and payments will be incorporated into the Participating Addendum that is made a part of the Master Agreement. The Contract Vendor may adjust the Master Agreement pricing accordingly for purchases made by Purchasing Entities within the jurisdiction of the state. All such agreements may not affect the WSCA-NASPO Administrative Fee or the prices paid by the Purchasing Entities outside the jurisdiction of the state requesting the additional fee.

2. **AGREEMENT ORDER OF PRECEDENCE.** The Master Agreement shall consist of the following documents:
 - a. A Participating Entity's Participating Addendum ("PA");
 - b. Minnesota WSCA-NASPO Master Agreement (includes negotiated Terms and Conditions)
 - c. The Solicitation including all addendums; and
 - d. Contract Vendor's response to the Solicitation

These documents shall be read to be consistent and complementary. Any conflict among these documents shall be resolved by giving priority to these documents in the order listed above. Contract Vendor terms and conditions that apply to this Master Agreement are only those that are expressly accepted by the Lead State and must be in writing and attached to this Master Agreement as an Exhibit or Attachment. No other terms and conditions shall apply, including terms and conditions listed in the Contract Vendor's response to the Solicitation, or terms listed or referenced on the Contract Vendor's website, in the Contract Vendor quotation/sales order or in similar documents subsequently provided by the Contract Vendor. The solicitation language prevails unless a mutually agreed exception has been negotiated.

3. **AMENDMENTS.** The terms of this Master Agreement shall not be waived, altered, modified, supplemented or amended in any manner whatsoever without prior written approval of the WSCA-NASPO Master Agreement Administrator.
4. **ASSIGNMENT OF ANTITRUST RIGHTS.** Contract Vendor irrevocably assigns to a Participating Entity any claim for relief or cause of action which the Contract Vendor now has or which may accrue to the Contract Vendor in the future by reason of any violation of state or federal antitrust laws (15 U.S.C. § 1-15 or a Participating Entity's state antitrust provisions), as now in effect and as may be amended from time to time, in connection with any goods or services provided to the Contract Vendor for the purpose of carrying out the Contract Vendor's obligations under this Master Agreement or Participating Addendum, including, at a Participating Entity's option, the right to control any such litigation on such claim for relief or cause of action.
5. **ASSIGNMENT/SUBCONTRACT.** Contract Vendor shall not assign, sell, transfer, subcontract or sublet rights, or delegate responsibilities under this Master Agreement, in whole or in part, without the prior written approval of the WSCA-NASPO Master Agreement Administrator.
6. **CANCELLATION.** Unless otherwise stated in the terms and conditions, any Master Agreement may be canceled by either party upon 60 days' notice, in writing, prior to the effective date of the cancellation. Further, any Participating Entity may cancel its participation upon 30 days written notice, unless otherwise limited or stated in the special terms and conditions of this solicitation or in the applicable Participating Addendum. Cancellation may be in whole or in part. Any cancellation under this provision shall not affect the rights and obligations attending orders outstanding at the time of cancellation, including any right of a Participating Entity to indemnification by the Contract Vendor, rights of payment for goods/services delivered and accepted, and rights attending any warranty or default in performance in association with any order. Cancellation of the Master Agreement due to Contract Vendor default may be immediate if defaults cannot be reasonably cured as allowed per Default and Remedies term.
7. **CONFIDENTIALITY, NON-DISCLOSURE AND INJUNCTIVE RELIEF. NEGOTIATED.**
 - 7.1 **Confidentiality.** The parties acknowledge that they and their employees or agents may, in the course of providing the Product and Services under this Master Agreement, be exposed to or acquire information that is confidential. Any and all information of any form that is marked as confidential or would by its nature be deemed

confidential obtained in the performance of this Master Agreement, including, but not necessarily limited to (a) any Participating Entity records, (b) personnel records, (c) information concerning individuals, (d) software, (e) product plans, (f) marketing and sales information, (g) customer lists, and (h) "know-how," or trade secrets, is confidential information ("Confidential Information"). Any reports or other documents or items (including software) that result from the use of the Confidential Information shall be treated in the same manner as the Confidential Information. Confidential Information does not include information that (a) is or becomes (other than by disclosure by disclosing party) publicly known; (b) is rightfully furnished by the disclosing party to others without restrictions similar to those imposed by this Master Agreement; (c) is rightfully in recipient party's possession without the obligation of nondisclosure prior to the time of its disclosure under this Master Agreement; (d) is obtained from a source other than disclosing party without the obligation of confidentiality, (e) is disclosed with the written consent of disclosing party or; (f) is independently developed by employees, agents or subcontractor of the parties who can be shown to have had no access to the Confidential Information

7.2 Non-Disclosure. The parties shall hold Confidential Information in confidence, using at least the industry standard of confidentiality, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purposes whatsoever other than the performance of this Master Agreement, and to advise each of its employees and agents of their obligations to keep Confidential Information confidential. The parties shall use commercially reasonable efforts in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limiting the generality of the foregoing, parties shall advise each other immediately if they learn or have reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Master Agreement and shall at their expense cooperate in seeking injunctive or other equitable relief against any such person. Except as directed in writing, the parties will not at any time during or after the term of this Master Agreement disclose, directly or indirectly, any Confidential Information to any person, except in accordance with this Master Agreement, and that upon termination of this Master Agreement the parties shall turn over all documents, papers, and other matter in the recipient party's possession that embody Confidential Information. Notwithstanding the foregoing, the recipient party may keep one copy of such Confidential Information necessary for quality assurance, audits and evidence of the performance of this Master Agreement.

7.3 Injunctive Relief. The parties acknowledge that breach of this Section, including disclosure of any Confidential Information, may cause irreparable injury that is inadequately compensable in damages. Accordingly, the injured party may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies that may be available. The parties acknowledge and agree that the covenants contained herein are necessary for the protection of the legitimate business interests and are reasonable in scope and content.

7.4 Participating Entity is agreeing to the above language to the extent is not in conflict with Participating Entities public disclosure laws.

8. **DEBARMENT.** The Contract Vendor certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction (Master Agreement) by any governmental department or agency. If the Contract Vendor cannot certify this statement, attach a written explanation for review by WSCA-NASPO.

In any order against this Master Agreement for a requirement established by a Purchasing Entity that discloses the use of federal funding, to the extent another form of certification is not required by a Participating Addendum or the order of the Purchasing Entity, the Contractor's quote represents a recertification consistent with the terms of paragraph 8, Section 2D, Minnesota Terms and Conditions

9. **DEFAULTS & REMEDIES.**

- a. The occurrence of any of the following events shall be an event of default under this Master Agreement:
- i. Nonperformance of contractual requirements; or
 - ii. A material breach of any term or condition of this Master Agreement; or
 - iii. Any representation or warranty by Contract Vendor in response to the solicitation or in this Master Agreement proves to be untrue or materially misleading; or
 - iv. Institution of proceedings under any bankruptcy, insolvency, reorganization or similar law, by or against Contract Vendor, or the appointment of a receiver or similar officer for Contract Vendor or any of its property, which is not vacated or fully stayed within thirty (30) calendar days after the institution or occurrence thereof; or
 - v. Any default specified in another section of this Master Agreement.
- b. Upon the occurrence of an event of default, Lead State shall issue a written notice of default, identifying the nature of the default, and providing a period of 30 calendar days in which Contract Vendor shall have an opportunity to cure the default. The Lead State shall not be required to provide advance written notice or a cure period and may immediately terminate this Master Agreement in whole or in part if the Lead State, in its sole

discretion, determines that it is reasonably necessary to preserve public safety or prevent immediate public crisis. Time allowed for cure shall not diminish or eliminate Contract Vendor's liability for damages, including liquidated damages to the extent provided for under this Master Agreement.

- c. If Contract Vendor is afforded an opportunity to cure and fails to cure the default within the period specified in the written notice of default, Contract Vendor shall be in breach of its obligations under this Master Agreement and Lead State shall have the right to exercise any or all of the following remedies:
 - i. Exercise any remedy provided by law; and
 - ii. Terminate this Master Agreement and any related Master Agreements or portions thereof; and
 - iii. Impose liquidated damages as provided in this Master Agreement; and
 - iv. Suspend Contract Vendor from receiving future bid solicitations; and
 - v. Suspend Contract Vendor's performance; and
 - vi. Withhold payment until the default is remedied.
- d. In the event of a default under a Participating Addendum, a Participating Entity shall provide a written notice of default as described in this section and have all of the rights and remedies under this paragraph regarding its participation in the Master Agreement, in addition to those set forth in its Participating Addendum. Unless otherwise specified in a Purchase Order, a Purchasing Entity shall provide written notice of default as described in this section and have all of the rights and remedies under this paragraph and any applicable Participating Addendum with respect to an Order placed by the Purchasing Entity. Nothing in these Master Agreement Terms and Conditions shall be construed to limit the rights and remedies available to a Purchasing Entity under the applicable commercial code.

10. DELIVERY. Unless otherwise indicated in the Master Agreement, the prices are the delivered price to any Purchasing Entity. All deliveries shall be F.O.B. destination with all transportation and handling charges paid by the Contract Vendor. Additional delivery charges will not be allowed for back orders.

11. FORCE MAJEURE. Neither party to this Master Agreement shall be held responsible for delay or default caused by fire, riot, acts of God and/or war which is beyond that party's reasonable control. The WSCA-NASPO Master Agreement Administrator may terminate this Master Agreement after determining such delay or default will reasonably prevent successful performance of the Master Agreement.

12. GOVERNING LAW. This procurement and the resulting agreement shall be governed by and construed in accordance with the laws of the Lead State sponsoring and administering the procurement. The construction and effect of any Participating Addendum or order against the Master Agreements shall be governed by and construed in accordance with the laws of the Participating Entity's State. Venue for any claim, dispute or action concerning an order placed against the Master Agreements or the effect of a Participating Addendum shall be in the Purchasing Entity's State.

13. INDEMNIFICATION. DELETED SEE SECTION 2C17.

14. INDEMNIFICATION – INTELLECTUAL PROPERTY. DELETED SEE SECTION 2C17.

15. INDEPENDENT CONTRACT VENDOR. The Contract Vendor shall be an independent Contract Vendor, and as such shall have no authorization, express or implied to bind WSCA-NASPO or the respective states to any agreements, settlements, liability or understanding whatsoever, and agrees not to perform any acts as agent for WSCA-NASPO or the states, except as expressly set forth herein.

16. INDIVIDUAL CUSTOMER. Except to the extent modified by a Participating Addendum, each Participating Entity shall follow the terms and conditions of the Master Agreement and applicable Participating Addendum and will have the same rights and responsibilities for their purchases as the Lead State has in the Master Agreement, including but not limited to, any indemnity or to recover any costs allowed in the Master Agreement and applicable Participating Addendum for their purchases. Each Purchasing Entity will be responsible for its own charges, fees, and liabilities. The Contract Vendor will apply the charges and invoice each Purchasing Entity individually.

17. INSURANCE. Except to the extent modified by a Participating Addendum, Contract Vendor shall, during the term of this Master Agreement, maintain in full force and effect, the insurance described in this section. Contract Vendor shall acquire such insurance from an insurance carrier or carriers licensed to conduct business in the Participating Entity's state and having a rating of A-, Class VII or better, in the most recently published edition of Best's Reports. Failure to buy and maintain the required insurance may result in this Master Agreement's termination or at a Participating Entity's option, result in termination of its Participating Addendum.

Coverage shall be written on an occurrence basis. The minimum acceptable limits shall be as indicated below, with no deductible for each of the following categories:

- a. Commercial General Liability covering the risks of bodily injury (including death), property damage and personal injury, including coverage for contractual liability, with a limit of not less than \$1 million per occurrence/\$2 million general aggregate;
- b. Contract Vendor must comply with any applicable State Workers Compensation or Employers Liability Insurance requirements.

Contract Vendor shall pay premiums on all insurance policies. Such policies shall also reference this Master Agreement and shall have a condition that they not be revoked by the insurer until thirty (30) calendar days after notice of intended revocation thereof shall have been given to Participating Entity by the Contract Vendor.

Prior to commencement of the work, Contract Vendor shall provide to the Participating Entity a written endorsement to the Contract Vendor's general liability insurance policy that (i) names the Participating Entity as an additional insured, (ii) provides that no material alteration, cancellation, non-renewal, or expiration of the coverage contained in such policy shall have effect unless the named Participating Entity has been given at least thirty (30) days prior written notice, and (iii) provides that the Contract Vendor's liability insurance policy shall be primary, with any liability insurance of the Participating Entity as secondary and noncontributory.

Contract Vendor shall furnish to Participating Entity copies of certificates of all required insurance within thirty (30) calendar days of the Participating Addendum's effective date and prior to performing any work. Copies of renewal certificates of all required insurance shall be furnished within thirty (30) days after renewal date. These certificates of insurance must expressly indicate compliance with each and every insurance requirement specified in this section. Failure to provide evidence of coverage may, at the Lead State Master Agreement Administrator's sole option, result in this Master Agreement's termination.

Coverage and limits shall not limit Contract Vendor's liability and obligations under this Master Agreement.

18. **LAWS AND REGULATIONS.** Any and all supplies, services and equipment offered and furnished shall comply fully with all applicable Federal and State laws and regulations.

19. **LICENSE OF PRE-EXISTING INTELLECTUAL PROPERTY.** ~~DELETED – SEE SECTION 2B30 FOR REVISED TERM ADDRESSING TITLE OF PRODUCT.~~

20. **NO WAIVER OF SOVEREIGN IMMUNITY.** The Lead State, Participating Entity or Purchasing Entity to the extent it applies does not waive its sovereign immunity by entering into this Contract and fully retains all immunities and defenses provided by law with regard to any action based on this Contract.

If a claim must be brought in a federal forum, then it must be brought and adjudicated solely and exclusively within the United States District Court of the Participating Entity's State.

21. **ORDER NUMBERS.** Contract order and purchase order numbers shall be clearly shown on all acknowledgments, shipping labels (if possible), packing slips, invoices, and on all correspondence.

22. **PARTICIPANTS.** WSCA-NASPO Cooperative Purchasing Organization LLC is not a party to the Master Agreement. It is a nonprofit cooperative purchasing organization assisting states in administering the WSCA/NASPO cooperative purchasing program for state government departments, institutions, agencies and political subdivisions (e.g., colleges, school districts, counties, cities, etc.) for all 50 states and the District of Columbia. Obligations under this Master Agreement are limited to those Participating States who have signed a Participating Addendum where contemplated by the solicitation. Financial obligations of Participating States are limited to the orders placed by the departments or other state agencies and institutions having available funds. Participating States incur no financial obligations on behalf of political subdivisions. Unless otherwise specified in the solicitation, the resulting award will be permissive.

23. **PARTICIPATION OF ENTITIES.** Use of specific WSCA-NASPO cooperative Master Agreements by state agencies, political subdivisions and other entities (including cooperatives) authorized by individual state's statutes to use state contracts are subject to the approval of the respective State Chief Procurement Official. Issues of interpretation and eligibility for participation are solely within the authority of the respective State Chief Procurement Official.

24. **PAYMENT.** Payment for completion of an order under this Master Agreement is normally made within 30 days following the date the entire order is delivered or the date a correct invoice is received, whichever is later. After 45 days the Contract Vendor may assess overdue account charges up to a maximum rate of one percent per month

on the outstanding balance. Payments will be remitted by mail. Payments may be made via a State or political subdivision "Purchasing Card" with no additional charge.

- 25. PUBLIC INFORMATION.** The Master Agreement and all related documents are subject to disclosure pursuant to the Participating Entity's public information laws.
- 26. RECORDS ADMINISTRATION AND AUDIT.** The disclosure of records in Participating States relating to Participating addenda and orders placed against the Master Agreement shall be governed by the laws of the Participating State and entity who placed the order.

The Contractor shall maintain books, records, documents, and other evidence pertaining to this Master Agreement and orders placed by Purchasing Entities under it to the extent and in such detail as shall adequately reflect performance and administration of payments and fees. Contractor shall permit the Lead State, a Participating Entity, a Purchasing Entity, the federal government (including its grant awarding entities and the U.S. Comptroller General), and any other duly authorized agent of a governmental agency, to audit, inspect, examine, copy and/or transcribe Contractor's books, documents, papers and records directly pertinent to this Master Agreement or orders placed by a Purchasing Entity under it for the purpose of making audits, examinations, excerpts, and transcriptions. This right shall survive for a period of five (5) years following termination of this Agreement or final payment for any order placed by a Purchasing Entity against this Agreement, whichever is later, to assure compliance with the terms hereof or to evaluate performance hereunder.

Without limiting any other remedy available to any governmental entity, the Contractor shall reimburse the applicable Lead State, Participating Entity, or Purchasing Entity for an overpayments inconsistent with the terms of the Master Agreement or orders or underpayment of fees found as a result of the examination of the Contractor's records.

The rights and obligations herein right exist in addition to any quality assurance obligation in the Master Agreement requiring the Contractor to self-audit contract obligations and that permits the Lead State Master Agreement Administrator to review compliance with those obligations.

Records will be retained longer if required by Participating Entity's law.

- 27. REPORTS - SUMMARY AND DETAILED USAGE.** In addition to other reports that may be required by this solicitation, the Contract Vendor shall provide the following WSCA-NASPO reports.
- a. **Summary Sales Data.** The Contractor shall submit quarterly sales reports directly to WSCA-NASPO using the WSCA-NASPO Quarterly Sales/Administrative Fee Reporting Tool found at <http://www.naspo.org/WNCPO/Calculator.aspx>. Any/all sales made under the contract shall be reported as cumulative totals by state. Even if Contractor experiences zero sales during a calendar quarter, a report is still required. Reports shall be due no later than the last day of the month following the end of the calendar quarter (as specified in the reporting tool).
 - b. **Detailed Sales Data.** Contract Vendor shall also report detailed sales data by: state; entity/customer type, e.g., local government, higher education, K12, non-profit; Purchasing Entity name; Purchasing Entity bill-to and ship-to locations; Purchasing Entity and Contract Vendor Purchase Order identifier/number(s); Purchase Order Type (e.g., sales order, credit, return, upgrade, determined by industry practices); Purchase Order date; Ship Date; and line item description, including product number if used. The report shall be submitted in any form required by the solicitation. Reports are due on a quarterly basis and must be received by the Lead State no later than the last day of the month following the end of the reporting period. Reports shall be delivered to the Lead State and to the WSCA-NASPO Cooperative Development Team electronically through email; CD-Rom, jump drive or other electronic matter as determined by the Lead State.
- Detailed sales data reports shall include sales information for all sales under Participating Addenda executed under this Master Agreement. The format for the detailed sales data report is in Section 6, Attachment H.
- c. Reportable sales for the summary sales data report and detailed sales data report includes sales to employees for personal use where authorized by the Participating Addendum. Specific data in relation to sales to employees for personal use to be defined in the final contract award to ensure only public information is reported.
 - d. Timely submission of these reports is a material requirement of the Master Agreement. The recipient of the reports shall have exclusive ownership of the media containing the reports. The Lead State and WSCA-NASPO

shall have a perpetual, irrevocable, non-exclusive, royalty free, transferable right to display, modify, copy, and otherwise use reports, data and information provided under this section.

28. ACCEPTANCE AND ACCEPTANCE TESTING.

A. Acceptance. Purchasing Entity (the entity authorized under the terms of any Participating Addendum to place orders under this Master Agreement) shall determine whether all Products and Services delivered meet the Contractor's published specifications (a.k.a. "Specifications"). No payment shall be made for any Products or Services until the Purchasing Entity has accepted the Products or Services. The Purchasing Entity will make every effort to notify the Contractor within thirty (30) calendar days following delivery of non-acceptance of a Product or completion of Service. In the event that the Contractor has not been notified within 30 calendar days from delivery of Product or completion of Service, the Product and Services will be deemed accepted on the 31st day after delivery of Product or completion of Services. This clause shall not be applicable, if acceptance testing and corresponding terms have been mutually agreed to by both parties in writing.

B. Acceptance Testing. The Purchasing Entity (the entity authorized under the terms of any Participating Addendum to place orders under this Master Agreement) and the Contract Vendor shall determine if Acceptance Testing is applicable and/or required for the purchase. The terms in regards to acceptance testing will be negotiated, in writing, as mutually agreed. If Acceptance Testing is NOT applicable, the terms regarding Acceptance in the Contract shall prevail.

29. SYSTEM FAILURE OR DAMAGE. In the event of system failure or damage caused by the Contract Vendor or its Product, the Contract Vendor agrees to use its commercially reasonable efforts to restore or assist in restoring the system to operational capacity. The Contract Vendor shall be responsible under this provision to the extent a 'system' is defined at the time of the Order; otherwise the rights of the Purchasing Entity shall be governed by the Warranty.

30. TITLE OF PRODUCT. NEGOTIATED.

OWNERSHIP

- a. **Ownership of Documents/Copyright.** Any reports, studies, photographs, negatives, databases, computer programs, or other documents, whether in tangible or electronic forms, prepared by the Contract Vendor in the performance of its obligations under the Master Agreement and paid for by the Purchasing Entity shall be the exclusive property of the Purchasing Entity and all such material shall be remitted to the Purchasing Entity by the Contract Vendor upon completion, termination or cancellation of the Master Agreement. The Contract Vendor shall not use, willingly allow or cause to allow such material to be used for any purpose other than performance of the Contract Vendor's obligations under this Master Agreement without the prior written consent of the Purchasing Entity.
- b. **Rights, Title and Interest.** All rights, title, and interest in all of the intellectual property rights, including copyrights, patents, trade secrets, trade marks, and service marks in the said documents that the Contract Vendor conceives or originates, either individually or jointly with others, which arises out of the performance of the Master Agreement, will be the property of the Purchasing Entity and are, by the Master Agreement, assigned to the Purchasing Entity along with ownership of any and all copyrights in the copyrightable material. The Contract Vendor also agrees, upon the request of the Purchasing Entity, to execute all papers and perform all other acts necessary to assist the Purchasing Entity to obtain and register copyrights on such materials. Where applicable, works of authorship created by the Contract Vendor for the Purchasing Entity in performance of the Master Agreement shall be considered "works for hire" as defined in the U.S. Copyright Act.
- c. **Notwithstanding the above,** the Purchasing Entity will not own any of the Contract Vendor's pre-existing intellectual property that was created prior to the Master Agreement and which the Purchasing Entity did not pay the Contract Vendor to create. Subject to payment in full for the products, equipment or services, the Contract Vendor grants the Purchasing Entity a perpetual, irrevocable, non-exclusive, royalty free license for Contract Vendor's pre-existing intellectual property that is contained in the products, materials, equipment or services that are purchased through this Master Agreement. Contract Vendor will retain all right, title and interest in and to all Intellectual Property Rights in or related to the services, or tangible components thereof, including but not limited to (a) all know-how, intellectual property, methodologies, processes, technologies, algorithms, software or development tools used in performing the services, and (b) such ideas, concepts, know-how, processes and reusable reports, designs, charts, plans, specifications, documentation, forms, templates or output which are developed, created or otherwise used by or on behalf of Contract Vendor in the course of performing the services

or creating the deliverables, other than portions that specifically incorporate proprietary or Confidential Information or data of Ordering Entity (collectively, the "Residual IP"), even if embedded in the deliverable.

- 31. WAIVER OF BREACH.** Failure of Lead State Master Agreement Administrator, Participating Entity, or Purchasing Entity to declare a default or enforce any rights and remedies shall not operate as a waiver under this Master Agreement or Participating Addendum. Any waiver by the Lead State or Participating Entity must be in writing. Waiver by the Lead State Master Agreement Administrator, Participating Entity, or Purchasing Entity of any default, right or remedy under this Master Agreement or Participating Addendum, or breach of any terms or requirements shall not be construed or operate as a waiver of any subsequent default or breach of such term or requirement, or of any other term or requirement under this Master Agreement, a Participating Addendum, or order.
- 32. WARRANTY.** The warranty provided must be the manufacturers written warranty tied to the product at the time of purchase and must include the following: (a) the Product performs according to the specifications (b) the Product is suitable for the ordinary purposes for which such Product is used, (c) the Product is designed and manufactured in a commercially reasonable manner, and (d) the Product is free of defects.

For third party products sold by the Contract Vendor, the Contract Vendor will assign the manufacturer or publisher's warranty and maintenance. The Contract Vendor will provide warranty and maintenance call numbers and assist the customer in engaging the manufacturer on warranty and maintenance issues.

Upon breach of the warranty, the Contract Vendor will repair or replace (at no charge to the Purchasing Entity) the Product whose nonconformance is discovered and made known to the Contract Vendor. If the repaired and/or replaced Product proves to be inadequate, or fails of its essential purpose, the Contract Vendor will refund the full amount of any payments that have been made. The rights and remedies of the parties under this warranty are in addition to any other rights and remedies of the parties provided by law or so ordered by the court.

33. LIMITATION OF LIABILITY. NEGOTIATED.

- A. CONTRACT VENDOR WILL NOT BE LIABLE FOR ANY INCIDENTAL, INDIRECT, PUNITIVE, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE PRODUCTS, SOFTWARE OR SERVICES PROVIDED HEREUNDER. EXCEPT FOR YOUR BREACH OF PAYMENT OBLIGATIONS OR CONFIDENTIALITY REQUIREMENTS, NEITHER PARTY SHALL HAVE LIABILITY FOR THE FOLLOWING: (1) LOSS OF REVENUE, INCOME, PROFIT OR SAVINGS; (2) LOST OR CORRUPTED DATA OR SOFTWARE, LOSS OF USE OF A SYSTEM OR NETWORK OR THE RECOVERY OF SUCH; (3) LOSS OF BUSINESS OPPORTUNITY; (4) BUSINESS INTERRUPTION OR DOWNTIME; OR (5) DELIVERABLES, DELL PRODUCTS OR THIRD-PARTY PRODUCTS NOT BEING AVAILABLE FOR USE.
- B. CONTRACT VENDOR'S TOTAL LIABILITY FOR ANY AND ALL CLAIMS ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT AND ALL PARTICIPATING ADDENDA SOURCED FROM THIS MASTER AGREEMENT (INCLUDING ANY PRODUCTS, SOFTWARE, OR SERVICES PROVIDED HEREUNDER) SHALL NOT EXCEED THE AGGREGATE AMOUNT OF TEN MILLION DOLLARS (\$10,000,000).
- C. THESE LIMITATIONS, EXCLUSIONS AND DISCLAIMERS SHALL APPLY TO ALL CLAIMS FOR DAMAGES, WHETHER BASED IN CONTRACT, WARRANTY, STRICT LIABILITY, NEGLIGENCE, TORT OR OTHERWISE. THE PARTIES AGREE THAT THESE LIMITATION OF LIABILITY ARE AGREED ALLOCATIONS OF RISK CONSTITUTING IN PART THE CONSIDERATION FOR CONTRACT VENDOR'S SALE OF PRODUCTS, SOFTWARE OR SERVICES TO ORDERING ENTITY, AND SUCH LIMITATIONS WILL APPLY NOTWITHSTANDING THE FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY AND EVEN IF A PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LIABILITIES.

- 34. SERVICE AGREEMENTS. NEGOTIATED.** Contract Vendor may provide Services, Software or Deliverables to you in accordance with one or more "Service Agreements." "Service Agreements" are service contracts, including "Service Descriptions" available at www.dell.com/servicecontracts/us, "Statements of Work," and any other such mutually agreed upon documents. Each Service Agreement will be interpreted as a single agreement, independent of any other Service Agreement, so that all of the provisions are given as full effect as possible.

Any and all licensing, maintenance, or order specific agreements referenced within the terms and conditions of this Master agreement are agreed to only to the extent that the terms do not conflict with the terms of the Participating Addendum or the Master Agreement, and to the extent the terms are not in conflict with the Participating Entities' applicable laws. In the event of conflict the terms and conditions, the Participating Addendum, and then the Master Agreement shall take precedence, as detailed in the Order of Precedence defined herein. Notwithstanding the

foregoing, licensing, maintenance agreements, or order specific agreements may be further negotiated by the Contract Vendor and the potential Purchasing Entity, provided the contractual documents are duly executed in writing.

- 35. SOFTWARE LICENSE. NEGOTIATED.** Software (defined as any software, library, utility, tool, or other computer or program code, in object (binary) or source-code form as well as the related documentation provided by Contract Vendor to Purchasing Entity) is subject to the separate license agreements accompanying the Software, along with any product guides, operating manuals, or other documentation included with the software media packaging or presented to Purchasing Entity during the installation or use of the Software. Purchasing Entity agrees that it will be bound by such license agreement.

Any and all licensing, maintenance, or order specific agreements referenced within the terms and conditions of this Master agreement are agreed to only to the extent that the terms do not conflict with the terms of the Participating Addendum or the Master Agreement, and to the extent the terms are not in conflict with the Participating Entities' applicable laws. In the event of conflict the terms and conditions, the Participating Addendum, and then the Master Agreement shall take precedence, as detailed in the Order of Precedence defined herein. Notwithstanding the foregoing, licensing, maintenance agreements, or order specific agreements may be further negotiated by the Contract Vendor and the potential Purchasing Entity, provided the contractual documents are duly executed in writing.

- 36. EXPORT COMPLIANCE. NEGOTIATED.** Contract Vendor, Lead State and Purchasing Entities acknowledge that products (including software) sold or licensed under this Master Agreement are subject to the export control laws and regulations of the United States and other countries from which they were supplied and in which they are used and Purchasing Entity agrees to abide by those laws and regulations. Purchasing Entity warrants that any software provided by it and used as a part of the services supplied by Contract Vendor under this Master Agreement contains no encryption or to the extent that it contains encryption such software is approved for export under the relevant laws or regulations.

- 37. RETURNS AND EXCHANGES. NEGOTIATED.** Contract Vendor's return policy can be found at www.dell.com/returnspolicy and applies to any returns and exchanges. Before returning or exchanging a Product, Purchasing Entity must contact Contract Vendor directly to obtain an authorization number to include with the return. Purchasing Entity must return Products to Contract Vendor in their original or equivalent packaging, and Purchasing Entity is responsible for risk of loss, as well as shipping and handling fees. Additional fees, including up to a 15% restocking fee, may apply. Restocking fees must be approved by the customer. If Purchasing Entity fails to follow the return or exchange instructions provided by Contract Vendor, Contract Vendor will not be responsible for any loss, damage, or modification of a Product, or processing of a Product for disposal or resale. Credit for partial returns may be less than invoice or individual component prices due to bundled or promotional pricing associated with the original purchase. This restocking fee shall not apply in the case of Contract Vendor error.

MASTER AGREEMENT TERMS AND CONDITIONS

C. MINNESOTA TERMS AND CONDITIONS

1. **ACCEPTANCE OF PROPOSAL CONTENT.** The contents of this RFP and selected portions of response of the successful Proposer will become contractual obligations, along with the final Master Agreement, if acquisition action ensues. The Lead State is solely responsible for rendering the decision in matters of interpretation of all terms and conditions.
2. **ACCESSIBILITY STANDARDS.** The State of Minnesota has developed IT Accessibility Standards effective September 1, 2010, which entails, in part, the Web Content Accessibility Guidelines (WCAG) 2.0 (Level AA) and Section 508 Subparts A-D which can be viewed at http://www.mmd.admin.state.mn.us/pdf/accessibility_standard.pdf

Responders must complete the WCAG VPAT form included in the FORMS section of the RFP. The completed VPAT form will be scored based on its compliance with the Accessibility Standards. The requested WCAG VPAT applies to the responder's website to be offered under the Contract. For products offered, VPATS are only to be provided upon request by the participating entity.

Upon request by the participating entity, the responder must make best efforts to provide Voluntary Product Accessibility Templates (VPATS) for all products offered in its response. Click here for link to VPATS for both Section 508 VPAT and WCAG 2.0 VPAT <http://mn.gov/oet/policies-and-standards/accessibility/#>.

3. **ADMINISTRATIVE PERSONNEL CHANGES.** The Contract Vendor must notify the Contract Administrator of changes in the Contract Vendor's key administrative personnel, in advance and in writing. Any employee of the Contract Vendor who, in the opinion of the State of Minnesota, is unacceptable, shall be removed from the project upon written notice to the Contract Vendor. In the event that an employee is removed pursuant to a written request from the Acquisition Management Specialist, the Contract Vendor shall have 10 working days in which to fill the vacancy with an acceptable employee.
4. **AMENDMENT(S).** Master Agreement amendments shall be negotiated by the Lead State with the Contract Vendor whenever necessary to address changes in the terms and conditions, costs, timetable, or increased or decreased scope of work. An approved Master Agreement amendment means one approved by the authorized signatories of the Contract Vendor and the Lead State as required by law.
5. **AMERICANS WITH DISABILITIES ACT (ADA).** DELETED.
6. **AWARD OF RELATED CONTRACTS.** In the event the Lead State undertakes or awards supplemental Contracts for work related to the Master Agreement or any portion thereof, the Contract Vendor shall cooperate fully with all other Contract Vendors and the State in all such cases. All Master Agreements between subcontractors and the Contract Vendor shall include a provision requiring compliance with this section.
7. **AWARD OF SUCCESSOR CONTRACTS.** In the event the State undertakes or awards a successor for work related to the Contract or any portion thereof, the current Contract Vendor shall cooperate fully during the transition with all other Contract Vendors and the State in all such cases. All Master Agreements between subcontractors and the Contract Vendor shall include a provision requiring compliance with this section.
8. **CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**
 - a. Certification regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions.
Instructions for certification:
 1. By signing and submitting this proposal, the prospective lower tier participant [responder] is providing the certification set out below.
 2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
 3. The prospective lower tier participant shall provide immediate written notice to the person to whom this proposal [response] is submitted if at any time the prospective lower tier participant learns that its certification

was erroneous when submitted or had become erroneous by reason of changed circumstances.

4. The terms covered transaction, debarred, suspended, ineligible lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this clause, have the meaning set out in the Definitions and Coverages section of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this response that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction [subcontract equal to or exceeding \$25,000] with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled, "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion – Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from covered transactions, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the list of parties excluded from federal procurement and nonprocurement programs.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

b. **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions.**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

9. **CHANGE REQUESTS.** The Lead State reserves the right to request, during the term of the Master Agreement, changes to the products offered. Products introduced during the term of the Master Agreement shall go through a formal review process. A formal process of changing the Master Agreement shall be developed during the negotiation of the Master Agreement. The Contract Vendor shall evaluate and recommend products for which agencies have an expressed need. The Lead State shall require the Contract Vendor to provide a summary of its research of those products being recommended for inclusion in the Master Agreement as well as defining how adding the product will enhance the Master Agreement. The Lead State may request that products, other than those recommended, are added to the Master Agreement.

In the event that the Lead State desires to add new products and services that are not included in the original Master Agreement, the Lead State requires that independent manufacturers and resellers cooperate with the already established Contract Vendor in order to meet the Lead State's requirements. Evidence of the need to add products or services should be demonstrated to the Lead State. The Master Agreement shall be modified via supplement or

amendment. The Lead State will negotiate the inclusion of the products and services with the Contract Vendor. No products or services will be added to the Master Agreement without the Lead State's prior approval.

10. **CONFLICT MINERALS.** Contract Vendor must provide information to the public on its website regarding the use of conflict minerals, as required by Section 13(p) of the Securities Exchange Act of 1934, as amended, and the rules promulgated thereunder. See: <http://www.sec.gov/rules/final/2012/34-67716.pdf>.
11. **COPYRIGHTED MATERIAL WAIVER.** The Lead State reserves the right to use, reproduce and publish proposals in any manner necessary for State agencies and local units of government to access the responses and/or to respond to request for information pursuant to Minnesota Government Data Practices Act, , including but not limited to emailing, photocopying, State Intranet/Internet postings, broadcast faxing, and direct mailing. In the event that the response contains copyrighted or trademarked materials, it is the responder's responsibility to obtain permission for the Lead State to reproduce and publish the information, regardless of whether the responder is the manufacturer or reseller of the products listed in the materials. By signing its response, the responder certifies that it has obtained all necessary approvals for the reproduction and/or distribution of the contents of its response and agrees to indemnify, protect, save and hold the Lead State, its representatives and employees harmless from any and all claims arising from the violation of this section and agrees to pay all legal fees incurred by the Lead State in the defense of any such action.
12. **EFFECTIVE DATE.** Pursuant to Minnesota law, the Master Agreement arising from this RFP shall be effective upon the date of final execution by the Lead State, unless a later date is specified in the Master Agreement.
13. **FOREIGN OUTSOURCING OF WORK.** Upon request, the Contract Vendor is required to provide information regarding the location of where services, data storage and/or location of data processing under the Master Agreement will be performed.
14. **GOVERNMENT DATA PRACTICES.** The Contract Vendor and the Lead State must comply with the Minnesota Government Data Practices Act, Minn. Stat. Ch. 13, (and where applicable, if the Lead State contracting party is part of the judicial branch, with the Rules of Public Access to Records of the Judicial Branch promulgated by the Minnesota Supreme Court as the same may be amended from time to time) as it applies to all data provided by the Lead State to the Contract Vendor and all data provided to the Lead State by the Contract Vendor. In addition, the Minnesota Government Data Practices Act applies to all data created, collected, received, stored, used, maintained, or disseminated by the Contract Vendor in accordance with the Master Agreement that is private, nonpublic, protected nonpublic, or confidential as defined by the Minnesota Government Data Practices Act, Ch. 13 (and where applicable, that is not accessible to the public under the Rules of Public Access to Records of the Judicial Branch).

In the event the Contract Vendor receives a request to release the data referred to in this article, the Contract Vendor must immediately notify the Lead State. The Lead State will give the Contract Vendor instructions concerning the release of the data to the requesting party before the data is released. The civil remedies of Minn. Stat. § 13.08, apply to the release of the data by either the Contract Vendor or the Lead State.

The Contract Vendor agrees to indemnify, save, and hold the State of Minnesota, its agent and employees, harmless from all claims arising out of, resulting from, or in any manner attributable to any violation of any provision of the Minnesota Government Data Practices Act (and where applicable, the Rules of Public Access to Records of the Judicial Branch), including legal fees and disbursements paid or incurred to enforce this provision of the Master Agreement. In the event that the Contract Vendor subcontracts any or all of the work to be performed under the Master Agreement, the Contract Vendor shall retain responsibility under the terms of this article for such work.

15. **HAZARDOUS SUBSTANCES.** To the extent that the goods to be supplied by the Contract Vendor contain or may create hazardous substances, harmful physical agents or infectious agents as set forth in applicable State and federal laws and regulations, the Contract Vendor must provide Material Safety Data Sheets regarding those substances. A copy must be included with each delivery.
16. **HUMAN RIGHTS/AFFIRMATIVE ACTION.** The Lead State requires affirmative action compliance by its Contract Vendors in accordance with Minn. Stat. § 363A.36 and Minn. R. 5000.3400 to 5000.3600.
 - a. Covered contracts and Contract Vendors. One-time acquisitions, or a contract for a predetermined amount of goods and/or services, where the amount of your response is in excess of \$100,000 requires completion of the Affirmative Action Certification page. If the solicitation is for a contract for an indeterminate amount of goods and/or services, and the State estimated total value of the contract exceeds \$100,000 whether it will be a multiple award contract or not, you must complete the Affirmative Action Certification page. If the contract dollar amount or the State estimated total contract amount exceeds \$100,000 and the Contract Vendor employed more than

40 full-time employees on a single working day during the previous 12 months in Minnesota or in the state where it has its principal place of business, the Contract Vendor must comply with the requirements of Minn. Stat. § 363A.36, subd. 1 and Minn. R. 5000.3400 to 5000.3600. A Contract Vendor covered by Minn. Stat. § 363A.36, subd. 1 and Minn. R. 5000.3400 to 5000.3600 that had more than 40 full-time employees within Minnesota on a single working day during the previous 12 months must have a certificate of compliance issued by the commissioner of the Department of Human Rights (certificate of compliance). A Contract Vendor covered by Minn. Stat. § 363A.36, subd. 1 that did not have more than 40 full-time employees on a single working day during the previous 12 months within Minnesota but that did have more than 40 full-time employees in the state where it has its principal place of business and that does not have a certificate of compliance must certify that it is in compliance with federal affirmative action requirements.

- b. Minn. Stat. § 363A.36, subd. 1 requires the Contract Vendor to have an affirmative action plan for the employment of minority persons, women, and qualified disabled individuals approved by the commissioner of the Department of Human Rights (commissioner) as indicated by a certificate of compliance. Minn. Stat. § 363A.36 addresses suspension or revocation of a certificate of compliance and contract consequences in that event. A contract awarded without a certificate of compliance may be voided.
- c. Minn. R. 5000.3400-5000.3600 implement Minn. Stat. § 363A.36. These rules include, but are not limited to, criteria for contents, approval, and implementation of affirmative action plans; procedures for issuing certificates of compliance and criteria for determining a Contract Vendor's compliance status; procedures for addressing deficiencies, sanctions, and notice and hearing; annual compliance reports; procedures for compliance review; and contract consequences for noncompliance. The specific criteria for approval or rejection of an affirmative action plan are contained in various provisions of Minn. R. 5000.3400-5000.3600 including, but not limited to, parts 5000.3420-5000.3500 and parts 5000.3552-5000.3559.
- d. Disabled Workers. Minn. R. 5000.3550 provides the Contract Vendor must comply with the following affirmative action requirements for disabled workers.

AFFIRMATIVE ACTION FOR DISABLED WORKERS

- (a) The Contract Vendor must not discriminate against any employee or applicant for employment because of physical or mental disability in regard to any position for which the employee or applicant for employment is qualified. The Contract Vendor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled persons without discrimination based upon their physical or mental disability in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.
 - (b) The Contract Vendor agrees to comply with the rules and relevant orders of the Minnesota Department of Human Rights issued pursuant to the Minnesota Human Rights Act.
 - (c) In the event of the Contract Vendor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with Minn. Stat. § 363A.36 and the rules and relevant orders of the Minnesota Department of Human Rights issued pursuant to the Minnesota Human Rights Act.
 - (d) The Contract Vendor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the commissioner of the Minnesota Department of Human Rights. Such notices must state the Contract Vendor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled employees and applicants for employment, and the rights of applicants and employees.
 - (e) The Contract Vendor must notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contract Vendor is bound by the terms of Minn. Stat. § 363A.36 of the Minnesota Human Rights Act and is committed to take affirmative action to employ and advance in employment physically and mentally disabled persons.
- e. Consequences. The consequences of a Contract Vendor's failure to implement its affirmative action plan or make a good faith effort to do so include, but are not limited to, suspension or revocation of a certificate of compliance by the commissioner, refusal by the commissioner to approve subsequent plans, and termination of all or part of the Contract by the commissioner or the State.

- f. Certification. The Contract Vendor hereby certifies that it is in compliance with the requirements of Minn. Stat. § 363A.36, subd. 1 and Minn. R. 5000.3400-5000.3600 and is aware of the consequences for noncompliance. It is agreed between the parties that Minn. Stat. 363.36 and Minn. R. 5000.3400 to 5000.3600 are incorporated into any contract between these parties based upon this specification or any modification of it. A copy of Minn. Stat. § 363A.36 and Minn. R. 5000.3400 to 5000.3600 are available upon request from the contracting agency.

- 17. INDEMNIFICATION. NEGOTIATED.** The Contract Vendor shall indemnify, protect, save and hold harmless the Lead State and the Participating Entity, its representatives and employees, from any and all third party claims or causes of action for personal bodily injury, including death, and damage to tangible personal property, including all legal fees incurred by the Lead State and the Participating Entity arising from the negligence in the performance of the Master Agreement by the Contract Vendor or its agents, employees, or subcontractors. This clause shall not be construed to bar any legal remedies the Contract Vendor may have with the Lead State's and Participating Entity's failure to fulfill its obligations pursuant to the Master Agreement.

If the Participating Entity's laws require approval of a third party to defend Participating Entity, Participating Entity will seek such approval and if approval is not received, Contract Vendor is not required to defend that Participating Entity.

- 18. INTELLECTUAL PROPERTY INDEMNIFICATION. NEGOTIATED** In the event of any such claim by any third party against the Participating Entity that Products, Software, Services or Deliverables (excluding Third-Party Products and open source software) prepared or produced by Dell and delivered pursuant to this Agreement infringe or misappropriate that third party's U.S. patent, copyright, trade secret, or other intellectual property rights ("**Indemnified Claims**"), the Participating Entity shall promptly notify the Contract Vendor. The Contract Vendor, at its own expense, shall indemnify; defend to the extent permitted by the Participating Entity's laws, and hold harmless the Participating Entity against any loss, cost, expense, or liability (including legal fees) arising out of such a claim, whether or not such claim is successful against the Participating Entity.

If Contract Vendor receives prompt notice such a claim that in the Contract Vendor's opinion is likely to result in an adverse ruling, the Contract Vendor shall at its option (1) obtain a right for the Participating Entity to continue using such Products, Deliverables or Software or allow Contract Vendor to continue performing the Services; (2) modify such Products, Software, Services or Deliverables to make them non-infringing; (3) replace such Products, Software, Services or Deliverables with a non-infringing equivalent; or (4) refund any pre-paid fees for the allegedly infringing Services that have not been performed or provide a reasonable depreciated or pro rata refund for the allegedly infringing Product, Deliverables or Software.

Notwithstanding the foregoing, Contract Vendor shall have no obligation under this Section for any claim resulting or arising from (1) modifications of the Products, Software, Services Deliverables that were not performed by or on behalf of Contract Vendor; (2) the combination, operation, or use of the Products, Software, Services or Deliverables in connection with a third-party product, software or service (the combination of which causes the claimed infringement); or (3) Contract Vendor's compliance with Participating Entity's written specifications or directions, including the incorporation of any software or other materials or processes provided by or requested by Participating Entity. Contract Vendor's duty to indemnify and defend under this Section is contingent upon: (x) Contract Vendor receiving prompt written notice of the third-party claim or action for which Contract Vendor must indemnify Participating Entity, (y) Contract Vendor having the right to solely control the defense and resolution of such claim or action, and (z) Participating Entity's cooperation with Contract Vendor in defending and resolving such claim or action. This Section states Participating Entity's exclusive remedies for any third-party intellectual property claim or action, and nothing in this Agreement or elsewhere will obligate Contract Vendor to provide any greater indemnity to Participating Entity.

- 19. JURISDICTION AND VENUE.** This RFP and any ensuing Master Agreement, its amendments and supplements thereto, shall be governed by the laws of the State of Minnesota, USA. Venue for all legal proceedings arising out of the Master Agreement, or breach thereof, shall be in the State or federal court with competent jurisdiction in Ramsey County, Minnesota. By submitting a response to this Request for Proposal, a Responder voluntarily agrees to be subject to the jurisdiction of Minnesota for all proceedings arising out of this RFP, any ensuing Master Agreement, or any breach thereof.

- 20. LAWS AND REGULATIONS.** Any and all services, articles or equipment offered and furnished must comply fully with all local, State and federal laws and regulations, including Minn. Stat. § 181.59 prohibiting discrimination and business registration requirements of the Office of the Minnesota Secretary of State.

- 21. NONVISUAL ACCESS STANDARDS.** Pursuant to Minn. Stat. § 16C.145, the Contract Vendor shall comply with the following nonvisual technology access standards :

- a. That the effective interactive control and use of the technology, including the operating system applications programs, prompts, and format of the data presented, are readily achievable by nonvisual means;
- b. That the nonvisual access technology must be compatible with information technology used by other individuals with whom the blind or visually impaired individual must interact;
- c. That nonvisual access technology must be integrated into networks used to share communications among employees, program participants, and the public; and
- d. That the nonvisual access technology must have the capability of providing equivalent access by nonvisual means to telecommunications or other interconnected network services used by persons who are not blind or visually impaired.

These standards do not require the installation of software or peripheral devices used for nonvisual access when the information technology is being used by individuals who are not blind or visually impaired.

22. NOTICE TO RESPONDERS. Pursuant to Minn. Stat. § 270C.65, subd. 3, Contract Vendors are required to provide their Federal Employer Identification Number or Social Security Number. This information may be used in the enforcement of federal and State tax laws. Supplying these numbers could result in action to require a Contract Vendor to file tax returns and pay delinquent tax liabilities. These numbers will be available to federal and State tax authorities and State personnel involved in the payment of State obligations.

23. ORGANIZATIONAL CONFLICTS OF INTEREST. The responder warrants that, to the best of its knowledge and belief, and except as otherwise disclosed, there are no relevant facts or circumstances which could give rise to organizational conflicts of interest. An organizational conflict of interest exists when, because of existing or planned activities or because of relationships with other persons:

- a Contract Vendor is unable or potentially unable to render impartial assistance or advice to the State;
- the Contract Vendor's objectivity in performing the work is or might be otherwise impaired; or
- the Contract Vendor has an unfair competitive advantage.

The Contract Vendor agrees that if an organizational conflict of interest is discovered after award, an immediate and full disclosure in writing shall be made to the Assistant Director of the Department of Administration's Materials Management Division that shall include a description of the action the Contract Vendor has taken or proposes to take to avoid or mitigate such conflicts. If an organizational conflict of interest is determined to exist, the State may, at its discretion, cancel the Master Agreement. In the event the Contract Vendor was aware of an organizational conflict of interest prior to the award of the Master Agreement and did not disclose the conflict to the Master Agreement Administrator, the State may terminate the Master Agreement for default. The provisions of this clause shall be included in all subcontracts for work to be performed, and the terms "Contract," "Contract Vendor," "Master Agreement," "Master Agreement Administrator" and "Contract Administrator" modified appropriately to preserve the State's rights.

24. PAYMENT CARD INDUSTRY DATA SECURITY STANDARD AND CARDHOLDER INFORMATION SECURITY. Contract Vendor assures all of its Network Components, Applications, Servers, and Subcontractors (if any) comply with the Payment Card Industry Data Security Standard ("PCIDSS"). "Network Components" shall include, but are not limited to, Contract Vendor's firewalls, switches, routers, wireless access points, network appliances, and other security appliances; "Applications" shall include, but are not limited to, all purchased and custom external (web) applications. "Servers" shall include, but are not limited to, all of Contract Vendor's web, database, authentication, DNS, mail, proxy, and NTP servers. "Cardholder Data" shall mean any personally identifiable data associated with a cardholder, including, by way of example and without limitation, a cardholder's account number, expiration date, name, address, social security number, or telephone number.

Subcontractors (if any) must be responsible for the security of all Cardholder Data in its possession; and will only use Cardholder Data for assisting cardholders in completing a transaction, providing fraud control services, or for other uses specifically required by law. Contract Vendor must have a business continuity program which conforms to PCIDSS to protect Cardholder Data in the event of a major disruption in its operations or in the event of any other disaster or system failure which may occur to operations; will continue to safeguard Cardholder Data in the event this Agreement terminates or expires; and ensure that a representative or agent of the payment card industry and a representative or agent of the State shall be provided with full cooperation and access to conduct a thorough security

review of Contract Vendor's operations, systems, records, procedures, rules, and practices in the event of a security intrusion in order to validate compliance with PCIDSS.

- 25. PERFORMANCE WHILE DISPUTE IS PENDING.** Notwithstanding the existence of a dispute, the parties shall continue without delay to carry out all of their responsibilities under the Master Agreement that are not affected by the dispute. If a party fails to continue without delay to perform its responsibilities under the Master Agreement, in the accomplishment of all undisputed work, any additional cost incurred by the other parties as a result of such failure to proceed shall be borne by the responsible party.

26. PREFERENCE.

Targeted/Economically Disadvantaged. In accordance with Minn. Stat. § 16C.16, subds. 6 and 7, eligible certified targeted group (TG) businesses and certified economically disadvantaged (ED) businesses will receive a 6 percent preference on the basis of award for this RFP. The preference is applied only to the first \$500,000 of the response to the RFP. Eligible TG businesses must be currently certified by the Materials Management Division prior to the bid opening date and time.

To verify TG/ED certification, refer to the Materials Management Division's web site at www.mmd.admin.state.mn.us under "Vendor Information, Directory of Certified TG/ED Vendors."

To verify TG eligibility for preference, refer to the Materials Management Division's web site under "Vendor Information, Targeted Groups Eligible for Preference in State Purchasing" or call the Division's HelpLine at 651.296.2600.

Reciprocal Preference. In accordance with Minn. Stat. § 16C.06, subd 7, the acquisition of goods or services shall be allowed a preference over a non-resident vendor from a state that gives or requires a preference to vendors from that state, the preference shall be equal to the preference given or required by the state of the non-resident vendor. If you wish to be considered a Minnesota Resident vendor you must claim that by filling out the Resident Vendor Form included in this solicitation and include it in your response.

Veteran. In accordance with Minn. Stat. § 16C.16, subd. 6a, (a) Except when mandated by the federal government as a condition of receiving federal funds, the commissioner shall award up to a six percent preference in the amount bid on state procurement to **certified small businesses that are majority-owned and operated by:**

- (1) recently separated veterans who have served in active military service, at any time on or after September 11, 2001, and who have been discharged under honorable conditions from active service, as indicated by the person's United States Department of Defense form DD-214 or by the commissioner of veterans affairs;
- (2) veterans with service-connected disabilities, as determined at any time by the United States Department of Veterans Affairs; or
- (3) any other veteran-owned small businesses certified under section 16C.19, paragraph (d).

In accordance with Minn. Stat. § 16C.19 (d), a veteran-owned small business, the principal place of business of which is in Minnesota, is certified if it has been verified by the United States Department of Veterans Affairs as being either a veteran-owned small business or a service disabled veteran-owned small business, in accordance with Public Law 109-461 and Code of Federal Regulations, title 38, part 74.

To receive a preference the veteran-owned small business must meet the statutory requirements above by the solicitation opening date and time. The preference is applied only to the first \$500,000 of the response. If responder is claiming the veteran-owned preference, attach documentation, sign and return form with response to the solicitation. Only eligible veteran-owned small businesses that meet the statutory requirements and provide adequate documentation will be given the preference.

- 27. PUBLIC INFORMATION.** Once the information contained in the responses is deemed public information, interested parties may request to obtain the public information. You may call 651.201.2413 between the hours of 8:00 a.m. to 4:30 p.m. to arrange this.

- 28. PUBLICITY.** Any publicity given to the program, publications or services provided resulting from a State contract for goods or services, including but not limited to notices, informational pamphlets, press releases, research, reports, signs and similar public notices prepared by or for the Contract Vendor, or its employees individually or jointly with others, or any subcontractors, shall identify the State as the sponsoring agency and shall not be released, unless such release is a specific part of an approved work plan included in the Master Agreement prior to its approval by the State's Authorized Representative and the State's Assistant Director or designee of Materials Management Division. The Contract Vendor shall make no representations of the State's opinion or position as to the quality or effectiveness of the products and/or services that are the subject of the Master Agreement without the prior written consent of the

State's Assistant Director or designee of Materials Management Division. Representations include any publicity, including but not limited to advertisements, notices, press releases, reports, signs, and similar public notices.

- 29. PURCHASE ORDERS. NEGOTIATED.** The State requires that there will be no minimum order requirements or charges to process an individual purchase order. The Master Agreement number and the PO number must appear on all documents (e.g., invoices, packing slips, etc.). The Ordering Entity's purchase order constitutes a binding contract. Unless otherwise expressly agreed between a Purchasing Entity and the Contract Vendor, any preprinted terms on the Purchasing Entity's purchase order shall be given no force or effect and no terms of a purchase order that conflict with this Master Agreement or the Participating Addendum shall be binding on Contract Vendor.
- 30. RIGHTS RESERVED.** Notwithstanding anything to the contrary, the State reserves the right to:
- reject any and all responses received;
 - select, for Master Agreements or for negotiations, a response other than that with the lowest cost;
 - waive or modify any informalities, irregularities, or inconsistencies in the responses received;
 - negotiate any aspect of the proposal with any responder and negotiate with more than one responder;
 - request a BEST and FINAL OFFER, if the State deems it necessary and desirable; and
 - terminate negotiations and select the next response providing the best value for the State, prepare and release a new RFP, or take such other action as the State deems appropriate if negotiations fail to result in a successful Master Agreement.
- 31. RISK OF LOSS OR DAMAGE.** The State is relieved of all risks of loss or damage to the goods and/or equipment during periods of transportation, and installation by the Contract Vendor and in the possession of the Contract Vendor or their authorized agent.
- 32. SEVERABILITY.** If any provision of the Master Agreement, including items incorporated by reference, is found to be illegal, unenforceable, or void, then both the State and the Contract Vendor shall be relieved of all obligations arising under such provisions. If the remainder of the Master Agreement is capable of performance it shall not be affected by such declaration or finding and shall be fully performed.
- 33. STATE AUDITS** (Minn. Stat. § 16C.05, subd. 5). The books, records, documents, and accounting procedures and practices of the Contract Vendor or other party, that are relevant to the Master Agreement or transaction are subject to examination by the contracting agency and either the Legislative Auditor or the State Auditor as appropriate for a minimum of six years after the end of the Master Agreement or transaction. The State reserves the right to authorize delegate(s) to audit this Master Agreement and transactions.
- 34. SURVIVABILITY.** The following rights and duties of the State and responder will survive the expiration or cancellation of the resulting Master Agreements. These rights and duties include, but are not limited to paragraphs: Indemnification, Hold Harmless and Limitation of Liability, State Audits, Government Data Practices, Governing Law, Jurisdiction and Venue, Publicity, Intellectual Property Indemnification, and Admin Fees.
- 35. TRADE SECRET/CONFIDENTIAL INFORMATION.** Any information submitted as Trade Secret must be identified and submitted per the Trade Secret Form and must meet Minnesota Trade Secret as defined in Minn. Stat. § 13.37



COMPUTER EQUIPMENT 2014-2019



MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD

EXHIBIT B - PRICING

1. **BAND(S) AWARDED:** Band 1: Desktop Band 2: Laptop Band 3: Tablet Band 4: Server Band 5: Storage.
2. **PRICE STRUCTURE.** The contract employs a MINIMUM discount-off baseline price list structure with category exceptions for each band. The category discounts may be higher or lower than the band discount. The minimum discount and categorized exceptions will be applied to all "quantity one" procurements. An end user will be able to verify pricing using the named base line price list and the minimum discounts with the categorized exceptions provided in the Master Agreement.
3. **PRICE GUARANTEE.** These discounts must remain firm, or the discount may be increased, during the term of the Master Agreement.
4. **BASELINE PRICE LIST.** The Base Line Price is designated in the Pricing Discount Schedule. The Base Line Price List must be accessible and verifiable by potential end users preferably on the Contract Vendor Website. All historic versions of the Baseline Price List must be made available upon request pursuant to the audit provisions.
5. **PRODUCT AND SERVICE SCHEDULE (PSS).** The Product and Service Schedule (PSS) identifies a complete listing of all products and services included in the awarded Master Agreement. The PSS serves as the Contract Catalog. **The PSS will be submitted to the Lead State following contract award and must be approved by the Lead State prior to the start of any sales.** The PSS must be available on the Contract Vendor website for end users to verify pricing based on the minimum discounts with category exceptions provided off a designated base line price list. The Contract Vendor will work with each State to develop a satisfactory PSS reflecting the individual States restrictions.
6. **CHANGES TO THE PSS.** Contract Vendor will request changes to the PSS utilizing an Action Request Form (ARF). Submittals will be reviewed by the Lead State quarterly. Obsolete and discontinued products will be removed.
7. **BULK/VOLUME PRICING.** Further bulk/quantity savings may be obtained when additional quantities are requested. Additional savings are expected when competing awarded vendors for volume pricing.
8. **PROMOTIONAL OFFERS.** Contract Vendors may provide promotions for deeply discounted products based on their inventory and sales. The Contract Vendors will be responsible to market these offers.
9. **PREMIUM SAVINGS PACKAGE PROGRAM.** Contract Vendors participating in the Premium Savings Package (PSP) Program will commit to the standard configurations. The standards currently are refreshed every six months (May and November). Refresh schedule is subject to change. See current configurations: <http://www.wnpsp.com/index.html>. States and other Participating Entities can choose to purchase these packages without any signing additional documents.
10. **TRADE-IN.** Trade-In Programs are the option of the Participating Entity. The Participating Addendum by each State may address the allowance of Trade-Ins.
11. **SERVICES.** Services are at the option of the Participating Entity. The Participating Addendum by each State may address service agreement terms and related travel.

12. **LEASING.** The Discount schedule will indicate if the Contract Vendor provides leasing. Participating Entities may enter in to lease agreements if they have the legal authority to enter into these types of agreements. The Participating Addendum by each State will identify if and how leasing agreement terms will be conducted.
13. **FREIGHT.** All prices shall be FOB Destination, prepaid and allowed (with freight included in the price), to the address, receiving dock or warehouse as specified on the ordering agency's purchase order. In those situations in which the "deliver-to" address has no receiving dock or agents, the Contract Vendor must be able to deliver to the person specified on the PO without additional cost. If there is a special case where inside delivery fee must be charged, the Contract Vendor will notify the customer in advance in order for the customer to determine if the additional cost will affect the decision to utilize the Contract Vendor.
14. **DELIVERY.** Delivery of ordered product should be completed within thirty (30) calendar days after receipt of an order, unless otherwise agreed to by the ordering agency.



COMPUTER EQUIPMENT 2014-2019



MINNESOTA WSA-NASPO MASTER AGREEMENT AWARD

EXHIBIT B - PRICING SCHEDULE

1. BASELINE PRICING DELL RETAIL PRICE LIST

LINK: <http://ftpbox.us.dell.com/slg/weekly/dellpricereport.pdf>

2. BAND DISCOUNTS - (CATEGORY EXCEPTIONS APPLICABLE IN ALL BANDS)

	DELL CATEGORY	MINIMUM DISCOUNT
BAND 1 DESKTOP	A	13.5%
BAND 2 LAPTOP	A	13.5%
BAND 3 TABLET	H	4%
BAND 4 SERVER	A	13.5%
BAND 5 STORAGE	A	13.5%

IMPORTANT: The minimum discount is provided, refer to Contract Vendor's Website for any additional discounts and request a quote for bulk/volume discounts. All prices shall be FOB Destination, prepaid and allowed (with freight included in the price). If there is a special case where inside delivery fee must be charged, the Contract Vendor will notify the customer in advance.

CATEGORY EXCEPTIONS:

Toner	F	1.5%
Value Latitude, OptiPlex, Workstation, Selected Products	H	4%
Selected Promo Offers; Inspiron; Selected Latitude; SC PowerEdge; Selected Dell EMC; Dell Branded Peripherals/Imaging: PowerConnect, Axim, Projector, Printer	S	2.5%
Spare Parts, selected Dimension Brand	U, W, Z	5%
3. THIRD PARTY PRODUCTS - (APPLICABLE IN ALL BANDS)	M	5.5%

CATEGORY EXCEPTIONS:

Selected Third Party Products (software and peripherals)	X	5%
Selected Third Party Printers	F	1.5%

4. SERVICES

Services are at the option of Participating States. Participating Addendums by each State may address service agreement terms and related travel. States may negotiate additional services. The majority of Dell-branded hardware includes a one-year warranty. Customer may purchase warranty upgrades for 2, 3, 4 or 5 years for certain Dell-branded hardware as offered by Dell. For Dell standard warranty information see <http://www.dell.com/learn/us/en/uscorp1/solutions/limited-hardware-warranties>

Selected Service on Poweredge Departmental Servers; Directline Service; 4-Hr On-Site Critical Care Plus; Business Care Plus On-Site Service (all years)	O	13.3%
On-site - Next Business Day On-site (extended yrs); Critical Care On-site Service (all yrs); other svcs	R,Z,Z1&ZS	5%

5. LEASING

Participating Addendum may identify if and how leasing agreement terms will be conducted.

6. ADDITIONAL DISCOUNTS - Request a quote for discounts on bulk/volume purchases.

a. Per Transaction Multiple Unit: Contact your Sales Representative for additional discounts for volume purchases.

Minimum Dollar Volume Associated with Single Transaction	Maximum Dollar Volume Associated with Single Transaction	Cat A only, Single Transaction, Maximum of 10 ship to Locations
\$50,000.00	\$99,999.99	Greater than or Equal to 1%
\$100,000.00	\$199,999.99	Greater than or Equal to 2%
\$200,000.00	\$499,999.99	Greater than or Equal to 4%
\$500,000.00	\$999,999.99	Greater than or Equal to 6%
\$1,000,000.00	No Maximum	Greater than or Equal to 8%

b. Cumulative: Cumulative Discounts are managed at the Master Agreement Level based on total volume.

Cumulative Dell Spend "Gates"	Category A Discount (Adjustment to the Matrix)
Up to \$2B	13.5%
\$2B to \$4B	14%
\$4B to \$6B	14.5%
\$6B to \$8B	15%
\$8B to \$10B	15.5%
Over \$10B	16%

c. Other Discounts provided: For purchases made online via Dell.com, Dell offers an additional 0.5% per category, except for Category O. For online purchases of Category O Services, Dell will offer a 13.5% discount.



COMPUTER EQUIPMENT 2014-2019



MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD

EXHIBIT C - PRODUCT AND SERVICE SCHEDULE (PSS)

1. **MAINTAINING THE PSS.** The Product and Service Schedule (PSS) identifies a complete listing of all products and services included in the awarded Master Agreement. The PSS serves as the WSCA-NASPO Contract Catalog. **The PSS will be submitted to the Lead State following contract award and must be approved by the Lead State prior to the start of any sales.** The PSS must be available on the Contract Vendor website for end users to verify pricing based on the minimum discounts with category exceptions provided off a designated base line price list. The Contract Vendor will work with each State to develop a satisfactory PSS reflecting the individual States restrictions. The Contract Vendor will work to develop a PSS satisfactory to the Lead State prior to the start of sales and containing the following information:
 - a. Band number
 - b. Part # - SKU #
 - c. Manufacturer
 - d. Description
 - e. Minimum Discount
 - f. Category Code (This code will be refined during the approval process)
 - g. Other fields approved by the Lead State
2. **CHANGES TO THE PSS:** Contract Vendor will request changes to the PSS utilizing an Action Request Form (ARF). Submittals will be reviewed by the Lead State quarterly. Obsolete and discontinued products will be removed.
3. **FORMAT:** The format for the final product and service schedule will be approved within 30 days of contract award. Suggested format is provided below:

MANUFACTURER NAME _____ DATE: _____
BASELINE PRICE LIST: _____
LINK: _____

BAND	Part # - SKU#	MANUFACTURER	DESCRIPTION	MINIMUM DISCOUNT	CATEGORY CODE
1	XYZ	ABC	DESKTOP	60%	1M
2	550	ZZZZZZZ	LAPTOP CART	10%	2TM
3	123A	ABC	SUPER TABLET	25%	3A

4. **THIRD PARTY PRODUCTS:** A list of third party products is to be submitted to the Lead State. Approval must be received from the Lead State prior to adding third party products to the Product and Service Schedule. Master Agreement restrictions of third party products include:
 - a. Contract Vendors can only offer Third Party Products in the bands they have been awarded.
 - b. Contract Vendor cannot offer products manufactured by another Contract Vendor holding a Minnesota WSCA-NASPO Master Agreement unless approved by the Lead State.
 - c. The Contract Vendor will assign the manufacturer or publisher's warranty and maintenance. The Contract Vendor will provide warranty and maintenance call numbers and assist the customer in engaging the manufacturer on warranty and maintenance issues.
 - d. Any additions to the Third Party Product list must be submitted utilizing the Action Request Form.
 - e. The approved Third Party Product list will be clearly posted on the Vendor provided website and updated as products are approved.



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MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD

EXHIBIT D - WEBSITE

1. **IMPLEMENTATION.** Within 30 calendar days of Master Agreement award, the Contract Vendor must provide a sample URL of the Master Agreement webpage to the Lead State for review and approval. The Lead State will review and determine acceptability of the website format and data. If the information is determined to be unacceptable or incorrect, the Contract Vendor will have 15 calendar days to provide revisions to the Lead State. Once the website is approved, the Contract Vendor may not make material changes to the website without notifying the Lead State and receiving written approval of the changes utilizing the Action Request Form. The Contract Vendor must continue to monitor and update the website throughout the life of the contract. Periodic audits may be conducted to ensure websites are updated and Contract Vendors will be expected to correct deficiencies.
2. **WEBSITE CONTENT.** The website must be separate from the Contract Vendor's commercially available (i.e., public) on-line catalog and ordering systems. Contract Vendor agrees to pursue design of a website to include the items listed below. The Lead State will review and determine acceptability of the website format and data as stated in Item 1 above.
 - a. Baseline Price List and historic versions
 - b. Approved Product and Service Schedule (PSS)
 - c. Product specifications, pricing, and configuration aids for the major product categories proposed that can be used to obtain an on-line quote
 - d. Third Party Product list will be clearly posted on the Vendor provided website and updated as products are approved
 - e. Link to the WSCA-NASPO EmarketCenter
 - f. Online ordering capability with the ability to remember multiple ship to locations if applicable to product
 - g. Contact information for order placement, service concerns (warranty and maintenance), problem reporting, and billing concerns
 - h. Sales representatives for participating entities
 - i. Purchase order tracking
 - j. Available Twenty-four (24) hours per day, seven (7) days per week availability, except for regularly scheduled maintenance
 - k. Additional Terms may not be posted on the Website without written approval of the Lead State
 - l. Link to the WSCA-NASPO EmarketCenter if a State is participating
 - m. Information on accessibility and accessible products
 - n. If participating in Premium Savings Package Program, lead with these products and display prominently on the website
 - o. Links to environmental certification, including but not limited to take-back/recycling programs,
 - p. Information regarding the use of Conflict minerals, as required by Section 13(p) of the Securities Exchange Act of 1934, as amended, and the rules promulgated thereunder. See: <http://www.sec.gov/rules/final/2012/34-67716.pdf>
 - q. Service options, service agreements for negotiations when allowed by a participating addendum
 - r. EPEAT, Energy Star, etc.
 - s. Link to Signed Participating Addendums
 - t. Link to Signed Master Agreement
 - u. Link to solicitation and Response
3. **TERMINATION** Upon termination or expiration of the Master Agreement awarded from this RFP all websites, on-line offering systems and Electronic Catalog functions supported and/or available as part of the Master Agreement will cease and be removed from public viewing access without redirecting to another website.



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MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD

EXHIBIT E - ACTION REQUEST UPDATE FORM (ARF)

The Action Request Form (ARF) provided in this document must be utilized by the Contract Vendor to provide quarterly updates of PSS and to make requests. The Action Request Forms may be reviewed quarterly by the Lead State.

DATE: _____

ATTN: WSCA-NASPO Master Agreement Administrator

RE: Master Agreement # _____ with _____ (Contract Vendor)

Dear WSCA-NASPO Master Agreement Administrator:

_____ (Contract Vendor) is providing the following update and/or requesting the action noted below.

Action Requested: _____

Action Log: _____ Verify Log is attached

SELECT ACTION BELOW AND PROVIDE REQUIRED INFORMATION:

- | | |
|--|--|
| ☐ Update of Product & Service Schedule | Provide summary of additions, deletions and pricing changes. |
| NOTE: THIS WILL BE A NOTIFICATION OF CHANGES TO THE PSS, APPROVAL WILL NOT BE NEEDED | |
| ☐ Quarterly Self Audit | Check this box to verify the Quarterly Self Audit has been completed |
| ☐ Third Party Product Addition | Provide warranty Guarantee |
| ☐ Marketing Approval | Attach Materials for review |
| ☐ Material Website Change | Describe and provide link for review |
| ☐ Miscellaneous Inquiry | Provide detail (e.g. key contact change, etc.) |

The Contract Vendor certifies Products and Services provided meet the terms and conditions of the Master Agreement and understands they may be audited for compliance. Additional information may be requested upon submission. The Lead State may remove previously approved items throughout the life of the Master Agreement if in the best interest at its sole discretion.

Contract Vendor: _____ Name of Requester: _____

Title of Requester: _____





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MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD

EXHIBIT F - REPORTING

- OWNERSHIP:** Recipient of the reports shall have exclusive ownership of the media containing the reports. The Lead State and WSCA-NASPO shall have a perpetual, irrevocable, non-exclusive, royalty free, transferable right to display, modify, copy, and otherwise use reports, data and information provided.
- DUE DATE:** Reports shall be due no later than the last day of the month following the end of the calendar quarter.

	FROM	TO	DUE
Q1	January 1	March 31	April 30
Q2	April 1	June 30	July 31
Q3	July 1	September 30	October 31
Q4	October 1	December 31	January 31

3. REQUIRED REPORTS:

	Report Name	Submitted to	Purpose & Submittal
1	WSCA-NASPO Administrative Fee	WSCA-NASPO	Identify total sales and administrative fee due to WSCA-NASPO 1) Go to: http://www.naspo.org/WNCPO/Calculator.aspx 2) Complete all contract report information fields 3) Enter total sales per State or Select "no sales for quarter" checkbox 4) Click on Submit button
2	WSCA-NASPO Detailed Sales	WSCA-NASPO	Detailed sales data by line item. Currently via an Excel Report template. Future MAY involve a portal. No modifications may be made by the Contract Vendor to the template. This report may also fulfill the reporting requirements of self audits, premium savings sales, and Bring Your Own Device Employee Sales.
3	Participating States	Participating State	Contract Vendor may utilize the detailed sales report to report to individual States unless otherwise directed by the State. States may require additional reporting.
4	Participating Addendum Status	WSCA-NASPO	Provides status of Participating Addendums. Excel Template to be provided by WSCA-NASPO.
5	Premium Saving Package (PSP)	PSP Lead	Additional reporting may be requested.
6	Quarterly Updates of PSS and Self Audit	Lead State	Utilize the Action Request Form (ARF)



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MINNESOTA WSCA-NASPO MASTER AGREEMENT AWARD

EXHIBIT G - DEFINITIONS

Acceptance. See Master Agreement Terms regarding Acceptance and Acceptance Testing.

Accessory. Accessories do not extend the functionality of the computer, but enhances the user experience i.e., mouse pad, monitor stand. For the purposes of this proposal, accessories are considered peripherals.

Bands: For the purpose of this solicitation, there are six product bands which may be awarded. Each product band includes related peripherals and services. Responders must only respond to Bands in which they manufacture the defined product. Responder may receive an award in one or more bands for which they manufacture a product based on the evaluation.

BAND 1: DESKTOP. A desktop computer is a personal computer intended for regular use at a single location. A desktop computer typically comes in several units connected together during installation: 1) the processor, 2) display monitor and 3) input devices usually a keyboard and a mouse. All operating systems for tablets are allowed. Zero Clients, Thin clients, all in ones and workstations will also be included under desktops. Ruggedized equipment may also be included in the Product and Service schedule for this band.

BAND 2: LAPTOP. A laptop computer is a personal computer for mobile use. A laptop includes a display, keyboard, point device such as a touchpad and speakers into a single unit. A laptop can be used away from an outlet using a rechargeable battery. All operating systems for tablets are allowed. Laptops will include notebooks, ultrabook, mobile thin clients, chromebooks and netbooks. Computers with mobile operating systems will also be included under laptops. Tablets that have the option to be utilized with a keyboard can be sold in this band. Ruggedized equipment may also be included in the Product and Service Schedule for this band.

BAND 3: TABLET. A tablet is a mobile computer that provides a touchscreen which acts as the primary means of control. All operating systems for tablets are allowed. Ruggedized equipment may also be included as a category in the Product and Service Schedule for this band.

BAND 4: SERVER. A server is a physical computer dedicated to run one or more services or applications (as a host) to serve the needs of the users of other computers on a network. This band also includes server appliances. Server appliances have their hardware and software preconfigured by the manufacturer. It also includes embedded networking components such as those found in blade chassis systems. Ruggedized equipment may also be included in the Product and Service Schedule for this band.

BAND 5: STORAGE. Storage is hardware with the ability to store large amounts of data. This band includes SAN switching necessary for the proper functioning of the storage environment. Ruggedized equipment may also be included in the Product and Service Schedule for this band.

~~**BAND 6: RUGGEDIZED DEVICES** Ruggedized refers to devices specifically designed to operate reliably in harsh usage environments and conditions, such as strong vibrations, extreme temperatures and wet or dusty conditions. Ruggedized Devices may also be offered under bands 1-5 of the Master Agreement. BAND 6 REMOVED. RUGGEDIZED EQUIPMENT MAY BE SOLD IN BANDS 1-5, PROVIDED IT MEETS BAND REQUIREMENTS.~~

Cloud Services. Delivery of computing as a service rather than a product, whereby shared resources, software and information are provided to computers and other devices as a utility over a network, such as the Internet. (Cloud Services including acquisitions structured as managed on-site services are not allowed.)

Contract Vendor or Contractor. The manufacturer responsible for delivering products or performing services under the terms and conditions set forth in the Master Agreement. The Contract Vendor must ensure partners utilized in the performance of this contract adhere to all the terms and conditions. For the purposes of this RFP, the term Partner will be utilized in naming the relationship a manufacturer has with another company to market and sell the contract. Participating States will have final determination/approval if a Partner may be approved for that state in the role identified by the Contract Vendor.

Components. Parts that make up a computer configuration.

Configuration. The combination of hardware and software components that make up the total functioning system.

Desktop. This is Band 1 of this solicitation. A desktop computer is a personal computer intended for regular use at a single location. A desktop computer typically comes in several units connected together during installation: 1) the processor,

2) display monitor and 3) input devices usually a keyboard and a mouse. Desktop virtualization endpoints such as zero and thin clients will also be included under the Desktop Band.

Energy Star®. A voluntary energy efficiency program sponsored by the U.S. Environmental Protection Agency. The Energy Star program makes identification of energy efficient computers easy by labeling products that deliver the same or better performance as comparable models while using less energy and saving money. Energy Star qualified computers and monitors automatically power down to 15 watts or less when not in use and may actually last longer than conventional products because they spend a large portion of time in a low-power sleep mode. For additional information on the Energy Star program, including product specifications and a list of qualifying products, visit the Energy Star website at <http://www.energystar.gov>.

EPEAT. A system for identifying more environmentally preferable computer desktops, laptops, and monitors. It includes an ANSI standard - the IEEE 1680 EPEAT standard – and website www.epeat.net to identify products manufacturers have declared as meeting the standard. EPEAT provides a clear and consistent set of performance criteria for the design of products. It is not a third-party certification program. Instead, Manufacturers self-certify that their products are in conformance with the environmental performance standard for electronic products.

FOB Destination. Shipping charges are included in the price of the item and the shipped item becomes the legal property and responsibility of the receiver when it reaches its destination unless there is acceptance testing required.

FOB Inside Delivery. Special Shipping arrangements, such as inside delivery, may include additional fees payable by the Purchasing Entity. Any FOB inside delivery must be annotated on the Purchasing Entity ordering document.

General Consulting. Services related to advising agencies on how best to use information technology to meet business objectives. Examples of such services would include management and administration of IT systems. Each State will have varying laws, rules, policies and procedures surrounding general consulting which need adherence. Minnesota Statute section 16C.08 defines general consulting for the State of Minnesota. <https://www.revisor.mn.gov/statutes/?id=16C.08>

Laptop. This is Band 2 of this solicitation. A laptop computer is a personal computer for mobile use. A laptop includes a display, keyboard, point device such as a touchpad and speakers into a single unit. A laptop can be used away from an outlet using a rechargeable battery. Laptop Band may include notebooks, ultrabooks, and netbooks. Computers with mobile operating systems will also be included under the Laptop Band.

Lead State. The State conducting this cooperative solicitation and centrally administering any resulting Master Agreement with the permission of the Signatory States. Minnesota is the Lead State for this procurement and the laws of Minnesota Statute Chapter 16C apply to this procurement.

Manufacturer. A company that, as one of its primary business function, designs, assembles owns the trademark/patent and markets branded computer equipment.

Master Agreement. The underlying agreement executed by and between the Lead State and the Contract Vendor.

Middleware. Middleware is the software "glue" that helps programs and databases (which may be on different computers) work together. Its most basic function is to enable communication between different pieces of software.

Options. An item of equipment or a feature that may be chosen as an addition to or replacement for standard equipment and features.

Order. A purchase order, sales order, or other document used by a Purchasing Entity to order the Equipment.

Participating Addendum. A written statement of agreement signed by the Contract Vendor and a Participating State or other Participating Entity that clarifies the operation of this Master Agreement for the Participating Entity (e.g., ordering procedures specific to a Participating State) and may add other state-specific language or other requirements. A Participating Addendum evidences the Participant's willingness to purchase and the Contract Vendor's willingness to provide equipment under the terms and conditions of this Master Agreement with any and all exceptions noted and agreed upon.

Participating States. States that utilize the Master Agreement established by the RFP and enter into a Participating Addendum which further defines their participation.

Participating Entity. A Participating State, or other legal entity, properly authorized by a Participating State to enter into the Master Agreement through a Participating Addendum and that authorizes orders from the Master Agreement by Purchasing Entities. Under the WSCA-NASPO program, in some cases, local governments, political subdivisions or other entities in a State may be authorized by the chief procurement official to execute its own Participating Addendum where a Participating Addendum is not executed by the chief procurement official for that state that covers local governments, political subdivisions, or other government entities in the state.

Partner. A company, authorized by the Contract Vendor and approved by the Participating State, to provide marketing, support, or other authorized contract services on behalf of the Contract Vendor in accordance with the terms and conditions of the Contract Vendor's Master Agreement. In the RFP, Partner is the term that is used to call out the many different relationships a manufacturer may have with another company to market their product including, but not limited to agents, subcontractors, partners, fulfillment partners, channel partners, business partners, servicing subcontractor, etc.

Peripherals. A peripheral means any hardware product that can be attached to, added within or networked with personal computers, servers and storage. Peripherals extend the functionality of a computer without modifying the core components of the system. For the purposes of this proposal, peripherals are defined as including accessories.

Peripherals may be manufactured by a third party, however, Contract Vendor shall not offer any peripherals manufactured by another Contract Vendor holding a Master Agreement. The Contract Vendors shall provide the warranty service and

maintenance for all peripherals on the Master Agreement. **Examples of peripherals/accessories/options:** Include but are not limited to: printers, monitors, multifunction printers, audiovisual equipment, instructional equipment, cabling, modems, networking to support server, storage and client applications such as routers, switches. Software is an option which must be related to the purchase of equipment and subject to configuration limits. **Third party products are allowed to be offered as peripherals/accessories/options and may be offered in any related band.**

Per Transaction Multiple Unit Discount. A contractual volume discount based on dollars in a single purchase order or combination of purchase orders submitted at one time by a Participating Entity or multiple entities conducting a cooperative purchase.

Premium Savings Packages. Deeply discounted standard configurations available to Purchasing Entities using the Master Agreement. This specification includes a commitment to maintain and upgrade (keep pace with the advance of technology) the standard configurations for a stated period of time or intervals. WSCA-NASPO reserves the right to expand and modify the PSP throughout the life of the contract. See <http://www.wnpsp.com/index.html>.

Purchasing Entity – means a state, city, county, district, other political subdivision of a State, and a nonprofit organization under the laws of some states if authorized by a Participating Addendum, that issues an order against the Master Agreement and becomes financially committed to the purchase.

Ruggedized. This was band 6 of this solicitation. Ruggedized refers to equipment specifically designed to operate reliably in harsh usage environments and conditions, such as strong vibrations, extreme temperatures and wet or dusty conditions.

Services. Broadly classed as installation/de-installation, maintenance, support, training, migration, and optimization of products offered or supplied under the Master Agreement. These types of services may include, but are not limited to: warranty services, maintenance, installation, de-installation, factory integration (software or equipment components), asset management, recycling/disposal, training and certification, pre-implementation design, disaster recovery planning and support, service desk/helpdesk, and any other directly related technical support service required for the effective operation of a product offered or supplied. Contract Vendors may offer, but participating States and entities do not have to accept, limited professional services related **ONLY** to the equipment and configuration of the equipment purchased through the resulting contracts. **EACH PARTICIPATING STATE DETERMINES RESTRICTIONS AND NEGOTIATES TERMS FOR SERVICES.**

Server. This is Band 4 of this solicitation. A server is a physical computer dedicated to run one or more services or applications (as a host) to serve the needs of the users of other computers on a network. This band also includes server appliances. Server appliances have their hardware and software preconfigured by the manufacturer. It also includes embedded networking components such as those found in blade chassis systems. Ruggedized equipment may also be included in the Product and Service Schedule for this band.

Storage. This is Band 5 of this solicitation. Storage is hardware with the ability to store large amounts of data. This band includes SAN switching necessary for the proper functioning of the storage environment. Ruggedized equipment may also be included in the Product and Service Schedule for this band.

Storage Area Network. A storage area network (SAN) is a high-speed special-purpose network (or subnetwork) that interconnects different kinds of data storage devices with associated data servers on behalf of a larger network of users.

Storage as a Service (STaaS). An architecture model by which a provider allows a customer to rent or lease storage space on the provider's hardware infrastructure on a subscription basis. E.g., manage onsite or cloud services.

Software. For the purposes of this proposal, software is commercial operating off the shelf machine-readable object code instructions including microcode, firmware and operating system software that are preloaded on equipment. The term "Software" applies to all parts of software and documentation, including new releases, updates, and modifications of software.

Tablet. This is Band 3 of this solicitation. A tablet is a mobile computer that provides a touchscreen which acts as the primary means of control. Tablet band may include notebooks, ultrabooks, and netbooks that are touchscreen capable.

Takeback Program. The Contract Vendor's process for accepting the return of the equipment or other products at the end of life.

Third Party Products. Products sold by the Contract Vendor which are manufactured by another company.

Upgrade. Refers to replacement of existing software, hardware or hardware component with a newer version.

Warranty. The Manufacturers general warranty tied to the product at the time of purchase.

Wide Area Network or WAN. A data network that serves users across a broad geographic area and often uses transmission devices provided by common carriers.

WSCA-NASPO. The WSCA-NASPO cooperative purchasing program, facilitated by the WSCA-NASPO Cooperative Purchasing Organization LLC, a 501(c)(3) limited liability company that is a subsidiary organization of the National Association of State Procurement Officials (NASPO). The WSCA-NASPO Cooperative Purchasing Organization facilitates administration of the cooperative group contracting consortium of state chief procurement officials for the benefit of state departments, institutions, agencies, and political subdivisions and other eligible entities (i.e., colleges, school districts, counties, cities, some nonprofit organizations, etc.) for all states and the District of Columbia. The WSCA-NASPO Cooperative Development Team is identified in the Master Agreement as the recipient of reports and may be performing contract administration functions as assigned by the Lead State Contract Administrator.

PARTICIPATING ADDENDUM
NASPO ValuePoint Cooperative Purchasing Program

COMPUTER EQUIPMENT MASTER AGREEMENT
Minnesota Master Agreement No.: MNWNC-108

California Participating Addendum No. 7-15-70-34-003
DELL MARKETING, L.P. (Contractor)

This Participating Addendum Number **7-15-70-34-003** is entered into between the State of California, Department of General Services (hereafter referred to as "State" or "DGS") and Dell Marketing, L.P. (hereafter referred to as "Contractor") under the NASPO ValuePoint Cooperative Purchasing Program Master Agreement Number MNWNC-108 ("Master Agreement") executed by the State of Minnesota.

1. Scope

- A. This Participating Addendum covers the purchase of Computer Equipment under the Master Agreement for the following product bands:

Band 1 – Desktop
Band 2 – Laptop
Band 3 – Tablet
Band 4 – Server
Band 5 – Storage

- B. This Participating Addendum is available for use by California political subdivisions/local governments (hereafter referred to as "Purchasing Entities"). A political subdivision/local government is defined as any city, county, city and county, district, or other local governmental body or corporation, including the California State Universities (CSU) and University of California (UC) systems, K-12 schools and community colleges empowered to expend public funds.
- C. Political subdivision/local government use of this Participating Addendum is optional. Each political subdivision/local government is to make its own determination whether this Participating Addendum and the Minnesota Master Agreement are consistent with its procurement policies and regulations.
- D. Participating Entities may enter into lease agreements for the products covered in the Master Agreement, if they have the legal authority to enter into these types of agreements.

2. Term

- A. The term of this Participating Addendum shall begin upon signature approval by the State and will end March 31, 2017, or upon termination by the State, whichever occurs first.
- B. Lead State amendments to extend the Master Agreement term date are automatically incorporated into this Participating Addendum unless terminated early in accordance with the terms and conditions of the Master Agreement or this Participating Addendum.

3. Order of Precedence

In the event of any inconsistency between the articles, attachments, or provisions which constitute this agreement, the following descending order of precedence shall apply:

- A. California Participating Addendum 7-15-70-34-003
- B. Minnesota WSCA-NASPO Master Agreement MNWNC-108

4. Terms and Conditions

The California General Provisions - Information Technology (GSPD401IT), revised and effective 09/5/14, is hereby incorporated by reference and made a part of this Participating Addendum. The 12 page document is available at:
http://www.documents.dgs.ca.gov/pd/poliproc/GSPD401IT14_0905.pdf.

5. Price List

Contractor shall maintain a website dedicated to this Participating Addendum which contains the Product and Service Schedule (PSS) and designated base line price list for participating entities to verify product/service pricing and applicable discounts offered under the Master Agreement.

6. Partner Utilization

- A. Contractor may use Partners under this Participating Addendum for sales and service functions as defined herein. Each Purchasing Entity will determine whether use of Partners is consistent with its procurement policies and regulations.
- B. Contractor shall be responsible for successful performance and compliance with all requirements in accordance with the terms and conditions under this Participating Addendum, even if work is performed by Partners.
- C. Contractor will be the sole point of contact with regard to Participating Addendum contractual matters, reporting, and administrative fee requirements.
- D. Partners are classified as follows:
 - 1) "Authorized Reseller"
 - a. Authorized Resellers may provide quotes, accept purchase orders, fulfill purchase orders, perform maintenance/warranty services and accept payment from ordering agencies for products and associated services offered under this Participating Addendum.
 - b. Authorized Resellers are responsible for sending a copy of all purchase orders and invoices to the Contractor for compliance with quarterly usage reporting and administrative fee requirements.
 - c. All purchase documents to Authorized Resellers shall reference the Participating Addendum Number.
 - d. If applicable, Authorized Reseller(s) under this Participating Addendum will be listed on the Contractor's dedicated website.

2) "Agent"

- a. Agents are only authorized to provide quotes, sales assistance, configuration guidance and ordering support for products and associated services offered under this Participating Addendum.
- b. Agents are not authorized to accept orders or payments.
- c. If applicable, Agent(s) under this Participating Addendum will be listed on the Contractor's dedicated website.

7. Invoicing

The Participating Addendum Number and Ordering Agency Purchase Order Number shall appear on each purchase order and invoice for all purchases placed under this Participating Addendum.

8. Usage Reporting

- A. Contractor shall submit usage reports on a quarterly basis to the State Contract Administrator for all California entity purchases using the WSCA-NASPO Detailed Sales report template.
- B. The report is due even when there is no activity.
- C. The report shall be an Excel spreadsheet transmitted electronically to the DGS mailbox at PDWSCA@dgs.ca.gov.
- D. Any report that does not follow the required format or that excludes information will be deemed incomplete. Contractor will be responsible for submitting corrected reports within five business days of the date of written notification from the State.
- E. Tax must not be included in the report, even if it is on the purchase order.
- F. Reports are due for each quarter as follows:

Reporting Period	Due Date
JUL 1 to SEP 30	OCT 31
OCT 1 to DEC 31	JAN 31
JAN 1 to MAR 31	APR 30
APR 1 to JUN 30	JUL 31

- G. Failure to meet reporting requirements and submit the reports on a timely basis shall constitute grounds for suspension of this contract.

9. Administrative Fee

- A. Contractor shall submit a check, payable to the State of California, remitted to the Department of General Services, Procurement Division for the calculated amount equal to one percent (0.01) of the sales for the quarterly period.
- B. Contractor must include the Participating Addendum Number on the check. Those checks submitted to the State without the Participating Addendum Number will be returned to Contractor for additional identifying information.
- C. Administrative fee checks shall be submitted to:
- State of California
Department of General Services, Procurement Division
Attention: Multiple Awards Program
707 3rd Street, 2nd Floor, MS 2-202
West Sacramento, CA 95605
- D. The administrative fee shall not be included as an adjustment to Contractor's Master Agreement pricing.
- E. The administrative fee shall not be invoiced or charged to the ordering agency.
- F. Payment of the administrative fee is due irrespective of payment status on orders or service contracts from a Purchasing Entity.
- G. Administrative fee checks are due for each quarter as follows:

Reporting Period	Due Date
JUL 1 to SEP 30	OCT 31
OCT 1 to DEC 31	JAN 31
JAN 1 to MAR 31	APR 30
APR 1 to JUN 30	JUL 31

- H. Failure to meet administrative fee requirements and submit fees on a timely basis shall constitute grounds for suspension of this contract.

10. Contract Management

- A. The primary contact individuals this Participating Addendum shall be as follows:

Contractor	
Name:	Amanda Hudson
Phone:	(512) 723-6806
Fax:	(512) 283-2691
E-Mail:	<u>Amanda_Hudson@Dell.com</u>
Address:	One Dell Way, Mailstop RR1-33 Legal Round Rock, Texas 78682

State Contract Administrator	
Name:	Julie Matthews
Phone:	(916) 375-4612
Fax:	(916) 375-4663
E-Mail:	Julie.Matthews@dgs.ca.gov
Address:	Department of General Services Procurement Division 707 Third Street, 2nd Floor, MS 2-202 West Sacramento, CA 95605

- B. Should the contact information for either party change, the party will provide written notice with updated information no later than ten business days after the change.

11. Termination of Agreement

The State may terminate this Participating Addendum at any time upon 30 days prior written notice to the Contractor. Upon termination or other expiration of this Participating Addendum, each party will assist the other party in orderly termination of the Participating Addendum and the transfer of all assets, tangible and intangible, as may facilitate the orderly, nondisrupted business continuation of each party. This provision shall not relieve the Contractor of the obligation to perform under any purchase order or other similar ordering document executed prior to the termination becoming effective.

12. Agreement

- A. This Participating Addendum and the Master Agreement together with its exhibits and/or amendments, set forth the entire agreement between the parties with respect to the subject matter of all previous communications, representations or agreements, whether oral or written, with respect to the subject matter hereof. Terms and conditions inconsistent with, contrary or in addition to the terms and conditions of this Participating Addendum and the Master Agreement, together with its exhibits and/or amendments, shall not be added to or incorporated into this Participating Addendum or the Master Agreement and its exhibits and/or amendments, by any subsequent purchase order or otherwise, and any such attempts to add or incorporate such terms and conditions are hereby rejected. The terms and conditions of this Participating Addendum and the Master Agreement and its exhibits and/or amendments shall prevail and govern in the case of any such inconsistent or additional terms.
- B. By signing below Contractor agrees to offer the same products/and or services as on the Master Agreement, at prices equal to or lower than the prices on that contract.
- C. IN WITNESS WHEREOF, the parties have executed this Participating Addendum as of the date of execution by both parties below.

Participating State:
STATE OF CALIFORNIA

By: CCW for JB
Name: Jim Butler
Title: Deputy Director
Date: 10/1/15

Contractor:
DELL MARKETING, L.P.

By: Amy Ivy
Name: Amy Ivy
Title: Contracts Manager
Date: 9/30/15



COUNCIL COMMUNICATION

CC #: 0863
File #: 0203-06

Title: Technology Equipment - Purchase Order Renewal
Contact: Sage Armstrong 916-774-5679 sarmstrong@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.6.

RECOMMENDATION TO COUNCIL

Staff recommends City Council authorize the renewal of an open purchase order with CDW Government, LLC (CDW-G) for Roseville Electric's (RE) purchases of general technology equipment and supporting software on an as-needed basis. This open purchase order with CDW-G uses the following competitively bid cooperative contract: National Intergovernmental Purchasing Alliance (National IPA) contract number 2018011-01, which is valid until February 4, 2023.

Staff requests Council adopt a resolution authorizing staff to continue utilizing this contract without further Council approvals, pending approval of the budget each fiscal year, until the contract expires or until City staff determines that continuing with the same vendor is not in the City's best interest.

BACKGROUND

RE supports and maintains industrial control systems which provide critical information on the output, status, and conditions of distribution and generation operational environments. These control systems utilize proprietary and general technology equipment including network routers and switches, desktop computers, servers, and accessories. In order to take advantage of competitive pricing for general technology equipment and related software, RE is utilizing open purchase orders and piggybacking on the following cooperative contract with CDW-G: National Intergovernmental Purchasing Alliance (National IPA) contract number 2018011-01.

In addition, the CDW-G purchase order was initially authorized by Council on a combined basis with Dell Marketing on November 16, 2018. RE is seeking to renew this purchase order on an individual basis due to two different renewal dates between Dell Marketing, LP and CDW-G.

FISCAL IMPACT

The total cost of the hardware and software purchases will not exceed \$180,000. Funding is included in the Electric Operations Fund FY2020-21 budget. Total estimated costs for future

years are \$100,000 for FY2021-22 and \$100,000 for FY2022-23. Future renewals will be contingent upon approval of the budget each year until the contract expires or until City staff determines that continuing with the same vendor is not in the City's best interest.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378.

A purchase order renewal meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Sage Armstrong, Electric Technology System Administrator

Michelle Bertolino, Electric Utility Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Resolution No. 20-272

2018011 CDW-G Agreement

RESOLUTION NO. 20-272

APPROVING A PURCHASE ORDER RENEWAL FOR TECHNOLOGY EQUIPMENT

WHEREAS, a purchase order for technology equipment, between the City of Roseville and CDW Government, LLC, has been reviewed by the Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said purchase order renewal is hereby approved and the City Manager or his designee is additionally authorized to execute two (2) optional one (1) year renewals of the purchase order, provided that the applicable budget is approved by the City Council, or until City staff determines that continuing with the same vendor is not in the City's best interest.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 2020, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

City of Mesa, AZ

Contract # 2018011-01

for

Information Technology Solutions and Services

with

CDW Government, LLC

Effective: March 1, 2018

The following documents comprise the executed contract between the City of Meza, AZ and CDW Government, LLC., effective March 1, 2018:

- I. Executed Contract
- II. Mayor and Council Approval
- III. Supplier Response
- IV. Original RFP



COUNCIL MINUTES

February 5, 2018

The City Council of the City of Mesa met in a Regular Council Meeting in the Council Chambers, 57 East 1st Street, on February 5, 2018 at 5:45 p.m.

COUNCIL PRESENT

John Giles
David Luna
Mark Freeman
Christopher Glover
Francisco Heredia
Kevin Thompson
Jeremy Whittaker

COUNCIL ABSENT

None

OFFICERS PRESENT

Christopher Brady
Dee Ann Mickelsen
Jim Smith

Mayor's Welcome.

Invocation by Pastor Ben Diaz with Palabra de Vida (Word of Life).

Pledge of Allegiance was led by Councilmember Thompson.

Awards, Recognitions and Announcements.

There were no awards, recognitions or announcements.

1. Take action on all consent agenda items.

All items listed with an asterisk (*) will be considered as a group by the City Council and will be enacted with one motion. There will be no separate discussion of these items unless a Councilmember or citizen requests, in which event the item will be removed from the consent agenda and considered as a separate item. If a citizen wants an item removed from the consent agenda, a blue card must be completed and given to the City Clerk prior to the Council's vote on the consent agenda.

It was moved by Councilmember Thompson, seconded by Councilmember Glover, that the consent agenda items be approved.

Carried unanimously.

*2. Approval of minutes from previous meetings as written.

Minutes from the January 8, 11, and 22, 2018 Council meetings.

3. Take action on the following liquor license applications:

*3-a. It Ain't Chemo

This is a one-day event to be held on Saturday, February 10, 2018 from 9:00 A.M. to 9:00 P.M. at Riverview Park, 2100 West Rio Salado Parkway. **(District 1)**

*3-b. AMC Superstition East 12

A multi-screen cinema is requesting a new Series 6 Bar License for American Multi-Cinema Inc., 1935 South Signal Butte Road - Andrea Dahlman Lewkowitz, agent. There is no existing license at this location. **(District 6)**

*3-c. ATL Wings

A restaurant that serves lunch and dinner is requesting a new Series 12 Restaurant License for Stapley Wings LLC, 1455 South Stapley Drive, Suites 22-24 - Andrea Dahlman Lewkowitz, agent. The existing license held by Mark Killian, sole proprietor, will revert to the State. **(District 4)**

*3-d. Elgin Distillery

This is a one-day craft distillery festival to be held on Saturday, March 3, 2018 from 9:00 A.M. to 4:00 P.M. at Sunland Village, 4601 East Dolphin Avenue. **(District 2)**

*3-e. Village of Elgin Winery

This is a one-day wine festival event to be held on Saturday, March 3, 2018 from 9:00 A.M. to 4:00 P.M. at Sunland Village, 4601 East Dolphin Avenue. **(District 2)**

4. Take action on the following off-track betting license application:

*4-a. Turf Paradise, TP Racing LLLP

New Off-Track Betting License for Turf Paradise, TP Racing LLLP to telecast at Moose & Bear, located at 118 East McKellips Road, Suite 103, TB Concepts LLC. Applicant: Vincent Acri Francia. **(District 1)**

5. Take action on the following contracts:

*5-a. One-Year Renewal to the Term Contract for Executive Physicals for Citywide Departments as requested by the Human Resources Department. **(Citywide)**

This contract provides annual physicals for the City's executive staff as a means of maintaining optimum health. There are approximately 65-70 positions eligible to participate in this program.

The Human Resources Department and Purchasing recommend authorizing the renewal contract with Banner Occupational Health Clinics, at \$88,500, based on estimated usage.

- *5-b. One-Year Renewal to the Term Contract for Deceased Animal Collection Services for the Community Services Department. **(Citywide)**

This contract provides a vendor to collect and dispose of deceased animals up to 150 pounds that are reported within the City. The contractor is responsible for the proper disposal by cremation or other means in accordance with the standards and methods approved by the Maricopa County Health Department.

The Community Services Department and Purchasing recommend authorizing the renewal contract with APM/Couts Enterprises, Inc., dba Arizona Pet Mortuary, at \$54,000, based on estimated usage.

- *5-c. Purchase of One Replacement Fire Apparatus, an Air Light/Rehab Unit, for the Fire and Medical Department (Sole Source). **(Citywide)**

The apparatus being replaced has met established replacement criteria and will be sold by a sealed bid process or traded-in as part of the City's fire apparatus purchase agreement with Pierce Manufacturing. In addition, Fire and Medical will trade-in two units to further offset the price for the Air/Light Rehab unit.

The Fire and Medical Department and Purchasing recommend authorizing the purchase using the City's five-year purchase agreement with Pierce Manufacturing Inc., through their designated local dealer, Hughes Fire Equipment Inc., at \$502,264.75. This purchase is funded by the Capital-General Fund and authorized 2013 Public Safety Bonds.

- *5-d. Three-Year Term Contract for Landscape Maintenance Services for Parks, Retention Basins and Sports Fields - Zones 1, 2, 3 and 4 for the Parks, Recreation and Community Facilities Department (PRCF). **(Citywide)**

These contracts provide landscape maintenance services for sports fields, parkways, medians, parks, retention basins or grounds adjacent to City facilities. The City has divided the landscaping into geographic areas known as Zones 1, 2, 3 and 4. PRCF has done an analysis to bring the work under this contract in-house and, at this time, contracting continues to be in the best financial interest of the City.

The evaluation committee recommends awarding the contract to the highest-scored proposal from Mariposa Landscape Arizona, Inc.; Zone 1, at \$1,435,319.57 annually; Zone 2, at \$959,183.45 annually; Zone 3, at \$974,364.20 annually; and Zone 4, at \$1,221,738.22 annually; based on estimated usage.

- *5-e. Three-Year Term Contract for Plumbing Services for the Parks, Recreation and Community Facilities Department. **(Citywide)**

This contract will establish a list of pre-qualified plumbing contractors to perform plumbing services on various City facilities/projects on an as-needed basis.

The evaluation committee recommends awarding the contract to the four, highest-scored proposals from Mesa Energy Systems Inc.; RKS Plumbing and Mechanical Inc.; Sun Mechanical Inc.; and W.D. Manor Mechanical Contractors, Inc.; cumulatively not to exceed \$100,000 annually, based on estimated usage.

- *5-f. Purchase of Furniture for the Main Library as requested by the Library Services Department. **(Citywide)**

This purchase will provide seating and tables for two new rooms at the Main Library, Teen Room and ThinkSpot. The Library worked with several vendors utilizing cooperative contracts specifying their needs and goals with this project.

The Library Services Department and Purchasing recommend authorizing the purchase using the Northern Arizona University cooperative contract with Atmosphere Commercial Interiors, at \$50,876.25.

- *5-g. Five-Year Term Contract with CDW Government, LLC and SHI International Corp. for Information Technology Solutions and Services for Various Departments throughout the City. **(Citywide)**

This contract will provide the City and participating agencies a full range of information technology solution products and services to meet varying requirements of governmental agencies. The scope of products and services available under these contracts include standard business and high-end workstations; laptop and notebook computers; network equipment; computer and network products and peripherals; monitors; various cloud, consulting, and technical support services; financing; various software products; and the contractors' comprehensive product offering.

Mesa, as the lead agency, has partnered with the National Intergovernmental Purchasing Alliance Company (National IPA) to lead this contract. The contract will be available to over 45,000 public agencies nationally. While no minimum volume is guaranteed to the suppliers, the estimated annual volume of IT Solutions purchased under this master agreement is approximately \$500 million per year. The City will receive rebates annually for administering and awarding this contract.

A committee representing the Police, and Information Technology Departments, City Manager's Office, Police-Information Technology, National IPA and Purchasing evaluated responses. The evaluation committee recommends awarding the contract to the highest-scored proposals from CDW Government, LLC and SHI International Corp., at \$3,100,000 annually, based on estimated usage.

- *5-h. One-Year Term Contract for Electrical and Lighting Supplies for the Materials and Supply Warehouse (for Citywide Departments). **(Citywide)**

Multiple departments use this Citywide contract for their miscellaneous electrical equipment and supplies.

The Business Services Department and Purchasing recommend authorizing the purchase using the State of Arizona cooperative contract with Border States Industries, Inc., at \$100,000, based on estimated usage.

- *5-i. Re-Award the Three-Year Term Contract for Microfilm Conversion Services for the Police Department. **(Citywide)**

This contract will provide services to convert Police Department data from microfilm to digital media. Police, Records Division use microfilm that is becoming worn and damaged. The previous vendor is unable to satisfactorily fulfill the contract requirements.

The Police Department and Purchasing recommend re-awarding the contract to the second highest scored proposal, ICM Conversions, at \$400,000 annually, based on estimated usage.

- *5-j. Purchase of Falcon District Brand Signage as requested by the Economic Development Department. **(Citywide)**

Continuing to build awareness and to promote the Falcon Field Economic Activity Area, this purchase for the Falcon District signage includes the installation of two branded monument signs to be located on Greenfield and Higley Roads, south of the 202. Additionally, the City will install utility and transit signal box wraps and will mount branded banners promoting aerospace, technology, and manufacturing on light poles around the airport.

The Economic Development Department and Purchasing recommend authorizing the purchase using the City of Peoria cooperative contract with YESCO Phoenix, at \$146,670.49. This purchase is funded by Local Streets Sales Tax.

- *5-k. Purchase of Three Replacement Rollback Trailers for the Transportation Department. **(Citywide)**

These trailers will replace three aging equipment trailers that are at the end of their service life. The trailers will meet the needs and safety requirements for transporting the large equipment required to perform street and right-of-way maintenance.

The Transportation Department and Purchasing recommend authorizing the purchase using the National Joint Powers Alliance contract with Empire Southwest (a Mesa business), at \$176,764.77. This purchase is funded by Local Streets Sales Tax.

- *5-l. One-Year Renewal to the Term Contract for Radio-Based Endpoint Encoders (for Water Meter Reading) for the Water Resources Department. **(Citywide)**

This contract provides Itron radio-based endpoint encoders and accessories purchased directly from Itron, Inc., the manufacturer. The endpoint stores 40 days of hourly reads to ensure data integrity and offers advanced customer side leak detection and reverse flow and tamper alarms. Water Utility installs approximately 540 radio-based endpoint encoders on new and existing meters annually.

The Water Resources Department and Purchasing recommend authorizing the renewal with Itron, Inc., at \$100,000, based on estimated usage.

- *5-m. Purchase of Water Treatment Plant Shop Tools and Equipment for the New Signal Butte Water Treatment Plant as requested by the Water Resources Department. **(Citywide)**

This purchase is for tools and equipment needed for the start-up and maintenance in the various shops at the new Signal Butte Water Treatment Plant.

The Water Resources Department and Purchasing recommend awarding the contract to the lowest, responsive and responsible bidders: Copper State Bolt & Nut Co. (a Mesa business); Glendale Industrial Supply, LLC, dba UNICOA Construction and Industrial Supply; Mallory Safety & Supply LLC; and W.W. Grainger, Inc.; cumulatively not to exceed \$153,000, based on estimated usage.

- *5-n. One-Year Renewal to the Term Contract for Fire Hydrant Water Meters for the Water Resources Department. **(Citywide)**

This contract provides 3" fire hydrant water meters to accurately measure construction water use of fire hydrants. The meters are installed by Water Utility staff to serve contractors and other customers needing to connect to City fire hydrants for temporary construction water service and dust control purposes.

The Water Resources Department and Purchasing recommend authorizing the renewal with Badger Meter Inc., dba National Meter Automation, at \$35,000, based on estimated usage.

- *5-o. Greenfield Water Reclamation Plant (GWRP), Phase III Expansion Guaranteed Maximum Price (GMP) No. 2. **(Citywide)**

The City of Mesa, Town of Gilbert, and Town of Queen Creek seek to provide an additional 14 million gallons per day annual average day flow of liquids and solids treatment capacity at the existing GWRP, complete with the required infrastructure, technology, and environmental features to ensure a reliable, efficient, and expanded plant to meet the current and future demands.

Staff recommends awarding the contract for the completion of this project to McCarthy Building Companies in the amount of \$120,302,333 and authorize a change order allowance \$6,015,117 (5%) for a total project amount of \$126,317,450. This project is funded by the Greenfield Water Reclamation Plant Joint Venture Fund, with contributions coming from its members based on usage. Mesa's portion of this GMP is \$72,229,521 and is funded by 2014 authorized Wastewater Bonds.

- *5-p. Sewer Pipe and Manhole Rehabilitation: Mesa Drive, Millet Avenue, Horne, and 6th Avenue. **(District 4)**

The existing sanitary sewer lines covered by this project were built during the 1950's and 1960's. The age of these pipes greatly increases their risk of failure and emergency repairs. This method of construction can be completed while leaving the pipe in place and without excavation. Similarly, the sewer manholes will be cleaned, repaired, and coated in place. Only the concrete adjustment rings will be removed and replaced.

Staff recommends awarding the contract for this project to the lowest, responsible bidder, B and F Contracting, Inc, in the amount of \$1,394,294.67, and authorize a change order allowance in the amount of \$139,430 (10%), for a total amount of \$1,533,724.67. Funding for this project is available from the 2014 Wastewater Bond Program.

- *5-q. Sidewalks at Railroad Crossing on Alma School. **(Districts 3 and 4)**

To continue to meet current railroad approach and clearance standards at the Alma School Road railroad crossing, additional safety improvements will need to be made. The project improvements for roadway and sidewalk approach at this location will facilitate greater public safety and needed clearances from railroad signals along with a smoother roadway crossing of the Union Pacific Railroad track. Mesa will participate in the federally-funded Railway-Highway Grade Crossing Program, and will be responsible

for adjusting the existing concrete sidewalks around the proposed cantilevers and gates, and installing concrete medians.

This project was previously awarded by Council on July 10, 2017, however, the previously selected contractor could not comply with the federal requirements and the project was released for bid a second time.

Staff recommends awarding the contract to the lowest, responsible bidder, AJP Electric, in the amount of \$149,494, plus an additional \$14,949 (10%) as a change order allowance, for a total amount of \$164,443. Funding is available from the Local Streets Sales Tax, of which 94.3% will be reimbursed by Arizona Department of Transportation (Federal) Grant under the Railway-Highway Grade Crossing.

6. Take action on the following resolutions:

- *6-a. Approving and authorizing the City Manager to submit the Second Substantial Amendment to the Fiscal Year 2017/2018 Annual Action Plan to the U.S. Department of Housing and Urban Development related to the allocation of funding obtained under the Community Development Block Grant (CDBG) program. This Amendment will allow for reallocation of \$600,000 in CDBG funds from the Senior Center Renovation Project (247 North Macdonald) to the Eagles Park Project (828 East Broadway Road). **(District 4)** – Resolution No. 11088.
- *6-b. Approving and authorizing the City Manager to enter into a Grant Agreement with the Arizona Department of Public Safety to accept \$1,335,284 in Victims of Crime Act (VOCA) grant funds. The finding will be used for salaries and expenses for the Mesa Prosecutors Office, Victim Services Unit for a three-year period. **(Citywide)** – Resolution No. 11089.
- *6-c. Approving and authorizing the City Manager to enter into a Lease Agreement with New Cingular Wireless PCS for a cellular site on a portion of 5950 East Virginia Street, also known as Mesa Fire Station 214. **(District 5)** – Resolution No. 11090.
- *6-d. Approving and authorizing the City Manager to enter into a Development Agreement for City-Share Reimbursement with PPGN-Ray, LLLP, for the reimbursement of \$100,568 for regional street and street lighting improvements that are being required by the City in conjunction with a proposed residential development known as Crismon Road at PPGN, located at 5461 South Ellsworth Road. **(District 6)** – Resolution No. 11091.
- *6-e. Approving and authorizing the City Manager to enter into an Intergovernmental Agreement with the Maricopa County, Department of Transportation for the pavement rehabilitation of Adobe Road from Higley Road to Recker Road. The City will contribute an estimated \$54,417 for the portion of the project that is within City boundaries that will be funded from the 2013 Streets Bond Program. **(District 5)** – Resolution No. 11092.
- *6-f. Approving and authorizing the City Manager to enter into First Amendments to the Development Agreement, Ground and Air Lease, and License Agreement with 3W Management, LLC, to facilitate the development of, and job creation and retention at, the City-owned property generally located at the southwest corner of Main Street and South Pomeroy and 34 South Pomeroy, which is the development commonly known as The GRID. **(District 4)** – Resolution No. 11093.

7. Introduction of the following ordinance and setting February 26, 2018 as the date of the public hearing on this ordinance:

- *7-a. **ZON17-00323 (District 5)** The 8800 to 8900 blocks of East Main Street (south side). Located west of Red Mountain Freeway on the south side of Main Street (16.4± acres). Rezoning from RS-43 and GC to GC-PAD; and Site Plan Review. This request will allow for the development of an RV dealership and storage facility. Jeff Welker, Welker Development Resources, applicant; Roger D. Overson, owner.

Staff Recommendation: Approval with conditions

P&Z Board Recommendation: Approval with conditions (Vote: 6-0)

8. Discuss, receive public comment, and take action on the following ordinances:

- *8-a. **ZON17-00309 (District 2)** The 5200 block of East Inverness Avenue (south side). Located east of Higley Road south of the US60 Freeway (1.9 ± acres). Rezoning from RM-3-PAD to LC; and Site Plan Review. This request will allow for the development of a commercial building. John Schoenauer, HD Management, applicant; Sevilla, LLC, owner. – Ordinance No. 5419.

Staff Recommendation: Approval with conditions

P&Z Board Recommendation: Approval with conditions (Vote: 7-0)

- *8-b. **ZON17-00283 (District 6)** The 7100 to 7300 blocks of East Ray Road (north side). Located east of Power Road on the north side of Ray Road (56.0± acres). Rezone from LI-AF to LI-AF-PAD. This request will allow for the development of an industrial subdivision. Omar Cervantes, XCL Engineering, LLC, applicant; Phx-Mesa Gateway Airport 193, LLC, owner. – Ordinance No. 5420.

Staff Recommendation: Approval with conditions

P&Z Board Recommendation: Approval with conditions (Vote: 7-0)

- *8-c. **ZON17-00432 (District 3)** The 800 and 900 blocks of West Southern Avenue (south side), the 1200 and 1300 blocks of South Extension Road (west side), and the 800 and 900 blocks of West Grove Avenue (north side). Located at the southwest corner of Southern Avenue and Extension Road (19.3 ± acres). PAD Amendment; Site Plan Modification. This request will allow the development of a new multiple-residence building in an existing multiple-residence complex. Reese Anderson, Pew and Lake, PLC, applicant; Edward B. Frankel, Trustee of the Frankel Family Trust, owner. – Ordinance No. 5421.

Staff Recommendation: Approval with conditions

P&Z Board Recommendation: Approval with conditions (Vote: 7-0)

9. Take action on the following subdivision plat:

- *9-a. "Allred Ranch" **(District 2)** The 2900 to 3100 blocks of East Southern Avenue (north side), and the 900 to 1200 blocks of South Los Alamos (west side). Located east of

Lindsay Road on the north side of Southern Avenue. 108 RSL-4.5 PAD lots (25± acres).
KB Home Phoenix, Inc., developer; Dan Auxier, EPS Group, engineer.

Items not on the Consent Agenda

10. Items from citizens present.

There were no items from citizens present.

11. Adjournment.

Without objection, the Regular Council Meeting adjourned at 5:57 p.m.

ATTEST:


DEE ANN MICKELSEN, CITY CLERK




JOHN GILES, MAYOR

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Regular Council Meeting of the City Council of Mesa, Arizona, held on the 5th day of February, 2018. I further certify that the meeting was duly called and held and that a quorum was present.


DEE ANN MICKELSEN, CITY CLERK



AGREEMENT PURSUANT TO SOLICITATION

**CITY OF MESA AGREEMENT NUMBER 2018011
INFORMATION TECHNOLOGY SOLUTIONS & SERVICES**

CITY OF MESA, Arizona (“City”)

Department Name	City of Mesa – Purchasing Division
Mailing Address	P.O. Box 1466 Mesa, AZ 85211-1466
Delivery Address	20 East Main St, Suite 400 Mesa, AZ 85201
Attention	Sharon Brause, CPPO, CPPB, CPCP Senior Procurement Officer
E-Mail	Sharon.Brause@MesaAZ.gov
Phone	(480) 644-2815
Fax	(480) 644-2655

AND

CDW GOVERNMENT LLC, (“Contractor”)

Mailing Address	230 N. Milwaukee Ave Vernon Hills, IL 60061-9740
Remit Address	75 Remittance Dr, Suite #1515 Chicago, IL 60675-1515
Attention	Jumana Dihy, Program Manager
E-Mail	jumdihy@cdwg.com
Phone	(312) 547-2495
Fax	(312) 705-9437
Website	www.cdwg.com

CITY OF MESA AGREEMENT PURSUANT TO SOLICITATION

This Agreement pursuant to solicitation ("Agreement") is entered into this 28th day of February, 2018, by and between the City of Mesa, Arizona, an Arizona municipal corporation ("City"), and **CDW GOVERNMENT LLC**, an Illinois limited liability company ("Contractor"). The City and Contractor are each a "Party" to the Agreement or together are "Parties" to the Agreement.

RECITALS

- A. The City issued solicitation number **2018011** ("Solicitation") for **INFORMATION TECHNOLOGY SOLUTIONS & SERVICES**, to which Contractor provided a response ("Response"); and
- B. The City Selected Contractor's Response as being in the best interest of the City and wishes to engage Contractor in providing the services/materials described in the Solicitation and Response.

In consideration of the reciprocal promises contained in the Agreement, and for other valuable and good consideration, which the Parties acknowledge the receipt and sufficiency of, the Parties agree to the following Terms & Conditions.

TERMS & CONDITIONS

- 1. **Term.** This Agreement is for a term beginning on **March 1, 2018** and ending on **February 28, 2023**. The use of the word "Term" in the Agreement includes the aforementioned period as well as any applicable extensions or renewals in accordance with this Section 1.
 - 1.1 **Renewals.** On the mutual written agreement of the Parties, the Term may be renewed up to a maximum of **two (2), one (1) year** periods. Any renewal(s) will be a continuation of the same terms and conditions as in effect immediately prior to the expiration of the then-current term.
 - 1.2 **Extension for Procurement Processes.** Upon the expiration of the Term of this Agreement, including any renewals permitted herein, at the City's sole discretion this Agreement may be extended on a month-to-month basis for a maximum of six (6) months to allow for the City's procurement processes in the selection of a Contractor to provide the services/materials provided under this Agreement. The City will notify the Contractor in writing of its intent to extend the Agreement at least thirty (30) calendar days prior to the expiration of the Term. Any extension under this Subsection 1.2 will be a continuation of the same terms and conditions as in effect immediately prior to the expiration of the then-current term.
 - 1.3 **Delivery.** Delivery shall be made to the location(s) contained in the Scope of Work within thirty (30) days after receipt of an order. Title to Products and risk of loss or damage during shipment pass from Contractor to City upon delivery to the destination specified on the applicable purchase order (F.O.B. Destination, freight prepaid and allowed). Contractor agrees to deliver all products to be delivered F.O.B. destination, freight pre-paid and allowed to various locations throughout the City. In many cases within the City, the Contractor may be asked to deliver all products to the front counter within a given department. For special orders, the Parties agree to negotiate in good faith an alternative delivery date when necessary. Notwithstanding the foregoing, title to software will remain with the applicable licensor(s), and the City's rights therein are contained in the license agreement between such licensor(s) and the City.
- 2. **Scope of Work.** The Contractor will provide the necessary staff, services and associated resources to provide the City with the services, materials, and obligations attached to this Agreement as **Exhibit A** ("Scope of Work") Contractor will be responsible for all costs and expenses incurred by Contractor that are incident to the performance of the Scope of Work unless otherwise

stated in **Exhibit A**. Contractor will supply all equipment and instrumentalities necessary to perform the Scope of Work. If set forth in **Exhibit A**, the City will provide Contractor's personnel with adequate workspace and such other related facilities as may be required by Contractor to carry out the Scope of Work.

The Agreement is based on the Solicitation and Response which are hereby incorporated by reference into the Agreement as if written out and included herein. In addition to the requirements specifically set forth in the Scope of Work, the Parties acknowledge and agree that the Parties shall perform in accordance with all terms, conditions, specifications and other requirements set forth within the Solicitation and Response unless modified herein.

3. **Orders.** Orders must be placed with the Contractor by either a: (i) Purchase Order when for a one-time purchase; (ii) procurement card; (iii) Delivery Order or Blanket Purchase Order for a requirements contract where multiple as-needed orders will be placed with the Contractor; (iv) Executed Statement of Work (SOW); or (v) Executed Cloud Service Order (CSO) Form. The City may use the Internet to communicate with Contractor and to place orders as permitted under this Agreement. Unless explicitly stated in a separate writing executed by the Parties, the terms and conditions on any order form, quote, or similar document provided by Contractor to the City will not take precedence over the language set forth in this Agreement or any of the documents outlined in Section 4 below.
4. **Document Order of Precedence.** In the event of any inconsistency between the terms of the body of the Agreement, Exhibits, Solicitation, and Response, the language of the documents will control in the following order.
 - a. Amendments to the Agreement
 - b. Agreement
 - c. Exhibits
 1. Mesa Standard Terms & Conditions (Exhibit C)
 2. Pricing (Exhibit B)
 3. Scope of Work (Exhibit A)
 4. Other Exhibits not listed above
 - d. Solicitation including any addenda
 - e. Contractor's Response
5. **Payment.** Subject to the provisions of the Agreement, the City will pay Contractor the sum(s) described in **Exhibit B** ("Pricing") in consideration of Contractor's performance of the Scope of Work during the Term.
6. **Pricing.** Contractor's pricing shall be in the format of a minimum percentage discount off a verifiable price index. Contractor may submit discounts for various manufacturers. At the time of purchase, Contractor may offer deeper discounts beyond the discounted price list, based on volume or other factors, as applicable. Minimum discounts will remain firm during the entirety of the Term of the Agreement, unless the Contractor requests to increase its discount percentage, and Pricing will include all charges that may be incurred in fulfilling requirement(s). In addition to decreasing prices for the balance of the Term due to a change in market conditions, a Contractor may conduct sales promotions involving price reductions for a specified lesser period. In the event a product is discontinued, Contractor will provide a product of the same or greater functionality, utilizing the discount structure.

It is the Contractor's responsibility to provide the City with an up-to-date price list for the duration of the Agreement.
- 6.1 **Prices.** All pricing discounts shall be firm for the Term and all extensions or renewals of the Term except where otherwise provided in this Agreement, and will include all costs of the Contractor providing the materials/service including transportation, insurance and

warranty costs. No fuel surcharges will be accepted unless allowed in this Agreement. The City shall not be invoiced at prices higher than those stated in the Agreement.

No price modifications will be accepted without proper request by the Contractor and response by the City's Purchasing Division.

- 6.2 **Price Adjustment.** Any requests for reasonable price adjustments must be submitted in accordance with this Section. Requests for adjustment in cost of labor and/or materials must be supported by appropriate documentation. There is no guarantee the City will accept a price adjustment; therefore, Contractor should be prepared for the Pricing to be firm over the Term of the Agreement. The City is only willing to entertain price adjustments based on an increase to Contractor's actual expenses or other reasonable adjustment in providing the services/materials under the Agreement. If the City agrees to the adjusted price terms, the City shall issue written approval of the change.

During the sixty (60) day period prior to the expiration of the then-current term date of the Agreement, the Contractor may submit a written request to the City to allow an increase to the prices in an amount not to exceed the twelve (12) month change in the ***Consumer Price Index for All Urban Consumers*** (CPI-U), US City Average, All Items, Not Seasonally Adjusted as published by the U.S. Department of Labor, Bureau of Labor Statistics (<http://www.bls.gov/cpi/home.htm>). The City shall review the request for adjustment and respond in writing; such response and approval shall not be unreasonably withheld.

- 6.3 **Renewal and Extension Pricing.** Any extension of the Agreement will be at the same pricing as the initial term. If the Agreement is renewed in accordance with Section 1, pricing may be adjusted for amounts other than inflation that represent actual costs to the Contractor based on the mutual agreement of the Parties. Contractor may submit a request for a price adjustment along with appropriate supporting documentation demonstrating the cost to the Contractor. Renewal prices shall be firm for the term of the renewal period and may be adjusted thereafter as outlined in the Subsection 6.2. There is no guarantee the City will accept a price adjustment.

- 6.4 **Invoices.** Payment will be made to Contractor following the City's receipt of a properly completed invoice. Any issues regarding billing or invoicing must be directed to the City Department/Division requesting the service or material from the Contractor. A properly completed invoice should contain, at a minimum, all of the following:

- a. Contractor name, address, and contact information;
- b. City billing information;
- c. City contract number as listed on the first page of the Agreement;
- d. Invoice number and date;
- e. Payment terms;
- f. Date of service or delivery;
- g. Description of materials or services provided;
- h. If materials provided, the quantity delivered and pricing of each unit;
- i. Applicable taxes; and
- j. Total amount due.

- 6.5 **Payment of Funds.** Contractor acknowledges the City may, at its option and where available use a Procurement Card/e-Payables to make payment for orders under the Agreement; otherwise, payment will be through a traditional method of a check or Electronic Funds Transfer (EFT) as available.

- 6.6 **Disallowed Costs, Overpayment.** If at any time the City determines that a cost for which payment was made to Contractor is a disallowed cost, such as an overpayment or a charge for materials/service not in accordance with the Agreement, the City will notify Contractor in writing of the disallowance; such notice will state the means of correction which may be, but is not limited to, adjustment of any future claim/invoice submitted by Contractor in the amount of the disallowance or to require repayment of the disallowed amount by Contractor. Contractor will be provided with the opportunity to respond to the notice.

7. **Insurance.**

- 7.1 Contractor must obtain and maintain at its expense throughout the Term of the Agreement, at a minimum, the types and amounts of insurance set forth in this Section 7 from insurance companies authorized to do business in the State of Arizona; the insurance must cover the materials/service to be provided by Contractor under the Agreement. For any insurance required under the Agreement, Contractor will name the City of Mesa, its agents, representatives, officials, volunteers, officers, elected officials, and employees as additional insured, as evidenced by providing either an additional insured endorsement or proper insurance policy excerpts.
- 7.2 Nothing in this Section 7 limits Contractor's responsibility to the City. The insurance requirements herein are minimum requirements for the Agreement and in no way limit any indemnity promise(s) contained in the Agreement.
- 7.3 The City does not warrant the minimum limits contained herein are sufficient to protect Contractor and subcontractor(s) from liabilities that might arise out of performance under the Agreement by Contractor, its agents, representatives, employees, or subcontractor(s). Contractor is encouraged to purchase additional insurance as Contractor determines may be necessary.
- 7.4 Each insurance policy required under the Agreement must be in effect at or prior to the execution of the Agreement and remain in effect for the Term of the Agreement.
- 7.5 Prior to the execution of the Agreement, Contractor will provide the City with a Certificate of Insurance (using an appropriate "ACORD" or equivalent certificate) signed by the issuer with applicable endorsements. The City reserves the right to request additional copies of any or all of the policies, endorsements, or notices relating thereto required under the Agreement.
- 7.6 When the City requires a Certificate of Insurance to be furnished, Contractor's insurance is primary of all other sources available. When the City is a certificate holder and/or an additional insured, Contractor agrees no policy will expire, be canceled, or be materially changed to affect the coverage available without advance written notice to the City.
- 7.7 The policies required by the Agreement must contain a waiver of transfer rights of recovery (waiver of subrogation) against the City, its agents, representatives, officials, volunteers, officers, elected officials, and employees for any claims arising out of the work of Contractor.
- 7.8 All insurance certificates and applicable endorsements are subject to review and approval by the City's Risk Management Division.
- 7.9 **Types and Amounts of Insurance.** Contractor must obtain and retain throughout the term of the Agreement, at a minimum, the following:
- 7.9.1 Worker's compensation insurance in accordance with the provisions of Arizona law. If Contractor operates with no employees, Contractor must provide the City

with written proof Contractor has no employees. If employees are hired during the course of this Agreement, Contractor must procure worker's compensations in accordance with Arizona law.

7.9.2 The Contractor shall maintain at all times during the term of this contract, a minimum amount of \$1 million per occurrence/\$2 million aggregate Commercial General Liability insurance, including Contractual Liability. For Commercial General Liability insurance, the City of Mesa, their agents, officials, volunteers, officers, elected officials or employees shall be named as additional insured, as evidenced by providing an additional insured endorsement.

7.9.3 Automobile liability, bodily injury and property damage with a limit of \$1 million per occurrence including owned, hired and non-owned autos.

8. **Requirements Contract.** Contractor acknowledges and agrees the Agreement is a requirements contract; the Agreement does not guarantee any purchases will be made (minimum or maximum). Orders will only be placed when the City identifies a need and issues a purchase order or a written notice to proceed. The City reserves the right to cancel purchase orders or a notice to proceed within three (3) business days of issuance; any such cancellation will be in writing. Should a purchase order or notice to proceed be canceled, the City agrees to reimburse Contractor for any actual and documented costs incurred by Contractor. The City will not reimburse Contractor for any avoidable costs incurred after receipt of cancellation including, but not limited to, lost profits, shipment of materials, or performance of services. The City reserves the right to purchase contracted items through other sources if determined in the best interests of the City to do so.

9. **Notices.** All notices to be given pursuant to the Agreement will be delivered to the Contractor at the address listed on Page 1 of this Agreement. Notice will be delivered pursuant to the requirements set forth the Mesa Standard Terms and Conditions that are attached to the Agreement as **Exhibit C**.

10. **Representations of Contractor.** To the best of Contractor's knowledge, Contractor agrees that:

- a. Contractor has no obligations, legal or otherwise, inconsistent with the terms of the Agreement or with Contractor's undertaking of the relationship with the City;
- b. Performance of the services called for by the Agreement do not and will not violate any applicable law, rule, regulation, or any proprietary or other right of any third party;
- c. Contractor will not use in the performance of Contractor's responsibilities under the Agreement any proprietary information or trade secret of a former employer of its employees (other than City, if applicable); and
- d. Contractor has not entered into and will not enter into any agreement, whether oral or written, in conflict with the Agreement.

11. **Mesa Standard Terms and Conditions.** **Exhibit C** to the Agreement is the Mesa Standard Terms and Conditions as modified by the Parties, which are incorporated by reference into the Agreement as though fully set forth herein. In the event of any inconsistency between the terms of the Agreement and the Mesa Standard Terms and Conditions, the language of the Agreement will control. The Parties or a Party are referred to as a "party" or "parties" in the Mesa Standard Terms and Conditions. The Term is referred to as the "term" in the Mesa Standard Terms and Conditions.

12. **Counterparts and Facsimile or Electronic Signatures.** This Agreement may be executed in two (2) or more counterparts, each of which will be deemed an original and all of which, taken together, will constitute one agreement. A facsimile or other electronically delivered signature to the

Agreement will be deemed an original and binding upon the Party against whom enforcement is sought.

13. **Incorporation of Recitals and Exhibits.** All Recitals and Exhibits to the Agreement are hereby incorporated by reference into the Agreement as if written out and included herein. In the event of any inconsistency between the terms of the body of the Agreement and the Exhibits, the language of the Agreement will control.

Exhibits to this Agreement are the following:

- (A) Scope of Work / Technical Specifications
- (B) Pricing
- (C) Mesa Standard Terms and Conditions

14. **Attorneys' Fees.** The prevailing Party in any litigation arising out of the Agreement will be entitled to the recovery of its reasonable attorney's fees, court costs, and other litigation related costs and fees from the other Party.
15. **Additional Acts.** The Parties agree to execute promptly such other documents and to perform such other acts as may be reasonably necessary to carry out the purpose and intent of the Agreement.
16. **Headings.** The headings of the Agreement are for reference only and will not limit or define the meaning of any provision of the Agreement.

By executing below, each Party acknowledges that it understands, approves, and accepts all of the terms of the Agreement and the attached exhibits.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

CITY OF MESA, ARIZONA

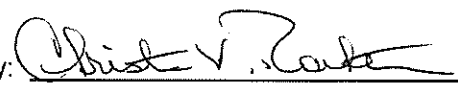
By:  Digitally signed by
Edward Quedens
Location: City of Mesa
Business Services
Date: 2018.03.02
13:18:03 -07'00'

Printed Name

Title

Date

CDW GOVERNMENT LLC

By: 

Christina V. Rother

Printed Name

President

Title

March 1, 2018

Date

REVIEWED BY:

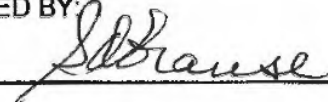
By: 

EXHIBIT A

SCOPE OF WORK

1. **MINIMUM REQUIREMENTS.** Contractor must meet the following minimum qualifications:
 - a. A full range of information technology solution products and services to meet varying requirements of governmental agencies.
 - b. Have a strong national presence as a computer solutions provider.
 - c. Have a distribution model capable of delivering products, free of charge, in a timely manner on a nationwide basis.
 - d. Have a demonstrated sales presence.
 - e. Ability to provide a toll-free telephone and state of the art electronic facsimile and internet ordering and billing capabilities.
 - f. Be able to meet the minimum requirements of the cooperative purchasing program detailed herein.

2. **ORDERING.** Although the City is open to alternate ordering methods, the primary methods for customers placing orders with the Contractor is through the following:
 - a. Online
 - b. Telephone
 - c. Fax
 - d. Email

3. **SCOPE OF PRODUCTS.** Contractor will provide the ability to purchase a comprehensive, wide variety of Information Technology Solution Products including, but not limited to, the following categories:
 - a. Personal Computer Systems: National brand name desktop PCs, notebooks and laptops from Enterprise Tier and Middle Tier Contractors that are business related computers, manufactured by companies, such as, Apple, COMPAQ, Dell, Gateway, Hewlett Packard, IBM / Lenovo and Toshiba.
 - b. Standard Business Workstation: These will be used for typical tasks, which will include word processing, spreadsheet analysis, database management, business graphics, statistical analysis, internet, and other office automation activities. Product will include the operating system license, software media and documentation in the hardware shipment.
 - c. High End Workstation: These will be used by application developers using GIS, CASE or other high-level language development tools, Computer Aided Design and Drafting professional, Internet Application developers or other sophisticated application work. Product will include the operating system license, software media and documentation in the hardware shipment.
 - d. Laptop Computer or Notebook: These will be used by traveling or remote access users for typical office automation and business productivity use. With a port replicator or docking station, it may also be used as a standard desktop. Product will include the operating system license, software media and documentation in the hardware shipment.
 - e. Network Equipment: This includes equipment primarily used for communications over an IP network. This includes layer 2 and layer 3 switches, routers, area wireless access points, point-to-point wireless access, optics, media interfaces (i.e. serial, T1, T3, OC3) and fiber channel. Class of equipment should include home office, small and medium business, and enterprise. Contractors may include, but not limited to, Cisco Systems, Dell, Juniper Networks, HP, Extreme Networks, Enterasys Networks, D-Link, Netgear, and Brocade Communications Systems.

EXHIBIT A

SCOPE OF WORK

- f. Monitors: These will include plug and play compatible monitors that are manufactured for the above systems and/or any other brand that may be specifically called for by the ordering entity and which meet the most current UL and OSHA requirements.
 - g. Computer and Network Products and Peripherals: Complete availability of major manufacturers Product lines on items such as, but not limited to RAM, graphic accelerator cards, network interface cards, cables, printers, scanners, keyboards, drives, memory cards, cables, batteries, etc.
 - h. Services:
 - i. Services means such as, consulting, technical support, trade-ins, repair, design, analysis, configuration, implementation, installation, training, and maintenance, etc. In addition, services which are related to the design, use or operation of the Products being purchased such as system configurations, testing, hardware/software installation, upgrades, imaging, etc. as described generally in this Agreement and as more particularly described in a Statement of Work or SOW (meaning a document in electronic or written form that is signed and delivered by each of the Parties for the performance of Services).
 - ii. Cloud Computing means third party cloud computing and storage services, where Contractor acts as a rebiller only and has no control over the delivery of the cloud computing and storage services. City acknowledges that the cloud service provider, and not Contractor, will be responsible for performance of the Cloud Services. Also, before Contractor can sell cloud computing and/or storage services from a third party to the City, City must execute an agreement governing said cloud computing and/or storage services with the third-party cloud services provider.
 - i. Comprehensive Product Offering: Contractor's catalog and Services set forth in Exhibit B shall be available. The City reserves the right to accept or reject any or all items offered.
 - j. Financing: Options available such as lease programs and conditional sales contracts.
4. **LICENSES**. The City may be required to sign a separate agreement, rider or End User Licensing Agreement ("EULA"), or such other terms as required by manufacturers, software publisher, or cloud service provider.
5. **DEFECTIVE PRODUCT**. All defective Products shall be replaced and exchanged by the Contractor. The cost of transportation, re-shipping or other like expenses shall be paid by the Contractor and in the case of certain, special orders, other reasonable charges may be paid by the Contractor as defined in the order or as otherwise agreed to by the Parties. All replacement Products must be received by the City within seven (7) days of initial notification, when such products are in Contractor stock; if replacement Product is not in Contractor's stock, Contractor will use commercially reasonable efforts to order the product within one (1) business day of the initial notification from the City and will ensure product is received within seven (7) days after Contractor's receipt of the product.

EXHIBIT B
PRICING

Item #	Product	Product / Group	Discount	Manufacturer Name
1)	Group 1 - Systems	1) Desktops	2.10%	All
		2) Notebooks	2.10%	All
		3) Tablets	2.25%	All
		4) Servers (1 Processor, 2 Processor, 4+ Processor, Blade, Tower, Unix, Handhelds, etc.)	4.00%	All
2)	Group 2 - Input Devices	5) Keyboards	6.75%	All
		6) Mice	6.75%	All
		7) Imaging Scanners	3.00%	All
		8) POS Scanners	3.00%	All
		9) Pointing Devices	3.50%	All
		10) Bar Code Readers	4.25%	All
		11) Audio Input	15.00%	All
		12) Input Adapters	5.00%	All
		13) PC and Network Cameras	5.50%	All
		14) Input Cables	15.00%	All
		15) Input Accessories	6.75%	All
3)	Group 3 - Output Devices	16) Displays	3.50%	All
		17) Printers	3.00%	All
		18) Inkjet Printers	3.00%	All
		19) Inkjet Photo Printers	3.00%	All
		20) Laser Printers	3.00%	All
		21) Label Printers	4.25%	All
		22) Dot Matrix Printers	3.00%	All
		23) Multi-Function Printers	3.00%	All
		24) Wide Format Printers	3.00%	All
		25) Multi-Function Inkjet Printers	3.00%	All
		26) Wide Format Printers	3.00%	All
		27) Fax Machine Printers	3.00%	All
		28) Printer Accessories	3.00%	All
		29) Projectors	3.50%	All
		30) Projector Accessories	3.50%	All
		31) Audio Input	15.00%	All
		32) Video Cards	3.50%	All

EXHIBIT B
PRICING

		33) Sound Cards	3.50%	All
		34) Output Accessories	6.75%	All
		35) Printer Consumables	3.00%	All
4)	Group 4 - Memory	36) Desktop	13.00%	All
		37) Flash	5.50%	All
		38) Networking	13.00%	All
		39) Notebook	13.00%	All
		40) Printer / Fax	13.00%	All
		41) Server	13.00%	All
5)	Group 5 - Storage Devices	42) Adapters Fiber Channel	5.50%	All
		43) Adapters FireWire / USB	5.50%	All
		44) Adapters IDE/ATA/SATA	5.50%	All
		45) Adapters RAID	5.50%	All
		46) Adapters SCSI	5.50%	All
		47) Bridges & Routers	5.50%	All
		48) Disk Arrays	5.50%	All
		49) Disk Arrays JBOD	5.50%	All
		50) Drives Magneto-Optical	5.50%	All
		51) Drives Removable Disks	5.50%	All
		52) Fiber Channel Switches	5.50%	All
		53) Hard Disks - External	5.50%	All
		54) Hard Disks - Fiber Channel	5.50%	All
		55) Hard Disks - IDE/ATA/S	5.50%	All
		56) Hard Disks - Notebook	5.50%	All
		57) Hard Disks - SCSI	5.50%	All
		58) Networking Accessories	5.50%	All
		59) Optical Drives - CD-ROM	5.50%	All
		60) Optical Drives - CD-RW	5.50%	All
		61) Optical Drives - DVD-CD	5.50%	All
		62) Optical Drives - DVD-RW	5.50%	All
		63) Storage Accessories	5.00%	All
		64) Storage - NAS	5.00%	All
		65) Storage - SAN	5.00%	All
		66) Tape Autoloaders -AIT	5.00%	All
		67) Tape Autoloaders - DAT	5.00%	All
		68) Tape Autoloaders - DLT	5.00%	All
		69) Tape Autoloaders - LTO	5.00%	All
		70) Tape Drives - 4mm	5.00%	All

EXHIBIT B
PRICING

		71) Tape Drives - 8mm/VXA	5.00%	All
		72) Tape Drives - AIT	5.00%	All
		73) Tape Drives - DAT	5.00%	All
		74) Tape Drives - DLT	5.00%	All
		75) Tape Drives - LTO/Ultrium	5.00%	All
		76) Tape Drives SDLT	5.00%	All
		77) Tape Drives - Travan	5.00%	All
6)	Group 6 - Network Equipment	78) 10/100 Hubs & Switches	5.50%	All
		79) Bridges & Routers	5.50%	All
		80) Gigabit Hubs & Switches	5.50%	All
		81) Concentrators & Multiplexers	5.50%	All
		82) Hardware Firewalls	5.50%	All
		83) Intrusion Detection	5.50%	All
		84) KVM	4.00%	All
		85) Modems	5.50%	All
		86) Network Test Equipment	5.50%	All
		87) Network Adapters	5.50%	All
		88) Network Cables	15.00%	All
		89) Network Accessories	5.50%	All
		90) Repeaters & Transceivers	5.50%	All
		91) Wireless LAN Accessories	5.50%	All
		92) Token Authentication	5.50%	All
		93) 10G Fiber Optic Transceivers	5.50%	All
		94) 1G Fiber Optic Transceivers	5.50%	All
7)	Group 7 - Software	95) Licensing Packages (e.g. Microsoft)	4.00%	All
		96) Licensing Backup	4.00%	All
		97) Licensing Barcode/OC	4.00%	All
		98) Licensing Business Application	4.00%	All
		99) Licensing CAD/CAM	4.00%	All
		100) Licensing - Cloning	4.00%	All
		101) Licensing - Computer Services	4.00%	All
		102) Licensee - Database	4.00%	All
		103) Licensing - Development	4.00%	All
		104) Licensing - Entertainment	4.00%	All
		105) Licensing - Financial	4.00%	All
		106) Licensing - Flow Chart	4.00%	All
		107) Licensing - Graphic Design	4.00%	All
		108) Licensing - Handheld	4.00%	All

EXHIBIT B
PRICING

		109) Licensing - Network OS	4.00%	All
		110) Licensing - OS	4.00%	All
		111) Licensing - Personal Organization	4.00%	All
		112) Licensing - Presentation	4.00%	All
		113) Licensing - Reference	4.00%	All
		114) Licensing - Report Analysis	4.00%	All
		115) Licensing - Spreadsheet	4.00%	All
		116) Licensing - Utilities	4.00%	All
		117) Licensing - Warranties	4.00%	All
		118) Licensing - Web Development	4.00%	All
		119) Licensing - Word Processing	4.00%	All
		120) Software - Backup	4.00%	All
		121) Software - Barcode / OCR	4.00%	All
		122) Software - Business Application	4.00%	All
		123) Software - CAD/CAM	4.00%	All
		124) Software - Cloning	4.00%	All
		125) Software - Computer Services	4.00%	All
		126) Software - Database	4.00%	All
		127) Software - Development	4.00%	All
		128) Software - Entertainment	4.00%	All
		129) Software - Financial	4.00%	All
		130) Software - Flow Chart	4.00%	All
		131) Software - Graphic Design	4.00%	All
		132) Software - Handheld	4.00%	All
		133) Software - OS	4.00%	All
		134) Software - Personal Organization	4.00%	All
		135) Software - Presentation	4.00%	All
		136) Software - Reference	4.00%	All
		137) Software - Report Analysis	4.00%	All
		138) Software - Spreadsheet	4.00%	All
		139) Software - Utilities	4.00%	All
		140) Software - Warranties	4.00%	All
		141) Software - Web Development	4.00%	All
		142) Software - Word Processing	4.00%	All
8)	Group 8 - Media Supplies	143) Media - 4mm tape	5.50%	All
		144) Media - AIT tape	5.50%	All
		145) Media - DAT tape	5.50%	All
		146) Media - DLT tape	5.50%	All

EXHIBIT B
PRICING

		147) Media LTO / Ultrium tape drive	5.50%	All
		148) Media - Magneto - Optical	5.50%	All
		149) Media - Optical	5.50%	All
		150) Media - SLR tape	5.50%	All
		151) Media - Travan tape	5.50%	All
		152) Media - VXA tape	5.50%	All
		153) Media - zip	5.50%	All
9)	Group 9 - Collaboration & IP Telephony	154) IP phones	4.25%	All
		155) Video conferencing products	4.25%	All
		156) Voice gateways / servers	4.25%	All
		157) Headsets	4.25%	All
		158) Audio conferencing products	4.25%	All
		159) Analog phones	4.25%	All
		160) Accessories	4.25%	All
10)	Group 10 - Other	161) Advanced Integration	3.00%	All
		162) Asset Disposal	3.00%	All
		163) Asset Management	3.00%	All
		164) Cables	15.00%	All
		165) Cables - custom	15.00%	All
		166) Cables - printer	15.00%	All
		167) Complex warranties	3.00%	All
		168) Desktop Accessories	6.75%	All
		169) Display Accessories	3.50%	All
		170) Electronic Services	3.00%	All
		171) Handheld Accessories	6.75%	All
		172) Imaging Accessories	6.75%	All
		173) Imaging - Camcorders	3.50%	All
		174) Imaging - Digital Cameras	3.50%	All
		175) Internal Lab Service	3.00%	All
		176) Lab fees	3.00%	All
		177) Managed Services	3.00%	All
		178) Miscellaneous solutions	3.00%	All
		179) Mounting hardware for vehicles	2.50%	All
		180) Networking Warranties	3.50%	All
		181) Notebook Accessories	2.50%	All
		182) Notebook Batteries	5.00%	All
		183) PC Lab order services	3.00%	All
		184) POS Accessories	4.25%	All

EXHIBIT B
PRICING

	185) POS Displays	4.25%	All
	186) Power Accessories	5.00%	All
	187) Power Surge Protection	5.00%	All
	188) Power UPS	5.00%	All
	189) Server Accessories	4.00%	All
	190) Service Charge	2.00%	All
	191) System Components	13.00%	All
	192) Training Courses	3.00%	All
	193) Training Reference Manuals	3.00%	All
	194) Warranties - Electronic	3.00%	All
	195) iPad / Tablet Stylus	6.75%	All
	196) Mouse / Wrist Pads	6.75%	All
	197) Security Locks and Hardware	6.75%	All
	198) Tools	6.75%	All
	199) Document Scanner Accessories	3.00%	All
	200) Flatbed Scanners	3.00%	All
	201) Mobile Scanners	3.00%	All
	202) Network Scanners	3.00%	All
	203) Sheet fed Scanners	3.00%	All
	204) Wide Format Scanners	3.00%	All
	205) Workgroup / Department Scanner	3.00%	All
	206) Build to Order Desktops	2.10%	All
	207) Nettop	3.00%	All
	208) Point of Sale	4.25%	All
	209) Ultra Small Form Factor	2.10%	All
	210) Apple / Mac Memory Upgrades	13.00%	All
	211) Chips / SIMMs/SIPPs / ROMs	13.00%	All
	212) Computer Cases	13.00%	All
	213) CPUs / Fans	13.00%	All
	214) Memory Accessories	13.00%	All
	215) Motherboards / Chassis	13.00%	All
	216) 1 - 2 port Serial Boards	13.00%	All
	217) 3+ port Serial Boards	13.00%	All
	218) Console Server	4.00%	All
	219) Device Server	4.00%	All
	220) Terminal Server	4.00%	All
	221) Content Management	4.00%	All
	222) Firewall / VPN Appliances	5.50%	All

EXHIBIT B
PRICING

	223) Multifunction Security Appliances	5.50%	All
	224) Network Camera Accessories	5.50%	All
	225) Network Cameras	5.50%	All
	226) Physical/Environmental Security	5.50%	All
	227) Security Appliance Accessories	5.50%	All
	228) Security Tokens	5.50%	All
	229) Unified Threat Management	5.50%	All
	230) 2-way Radios / Walkie Talkies	6.75%	All
	231) Apple Notebooks	2.50%	All
	232) Convertible PCs / Slate PCs / iPad	2.25%	All
	233) iPad	2.25%	All
	234) Slate Tablet Computers	2.25%	All
	235) GPS / PDA	6.75%	All
	236) Wireless Communication Devices	2.50%	All
	237) Batteries	5.00%	All
	238) Power Supplies / Adapters	5.00%	All
	239) Rackmount Equipment	5.00%	All
	240) Remote Power Management	5.00%	All
	241) Surge Suppressors	5.00%	All
	242) UPS / Battery Backup	5.00%	All
	243) 14" & smaller LCD Display	3.50%	All
	244) 15-19" LCD Display	3.50%	All
	245) 15-19" Wide LCD Display	3.50%	All
	246) 15-19" Wide LED Display	3.50%	All
	247) 20-30" LCD Display	3.50%	All
	248) 20-30" Wide LCD Display	3.50%	All
	249) 20-30" Wide LED Display	3.50%	All
	250) PCoIP and Zero Client Displays	3.50%	All
	251) Arm Mounts	3.50%	All
	252) Ceiling Mounts	3.50%	All
	253) Combo Mounts	3.50%	All
	254) Desktop Stands / Risers	3.50%	All
	255) Flat Wall Mounts	3.50%	All
	256) Mount Accessories	3.50%	All
	257) Pole Display	4.25%	All
	258) Stands / Carts / Feet	3.50%	All
	259) Tilt Wall Mounts	3.50%	All

EXHIBIT B
PRICING

		260) C-Cure Products	4.00%	All																				
		261) Istar Products	5.50%	All																				
11)	Group 11 - Services	SERVICE	STANDARD HOURLY RATE	DISCOUNT FROM STANDARD RATE																				
		Design and Analysis	Please see CDW•G's Professional Services Offering below for descriptions of CDW•G's Professional Services.																					
		Configuration		%																				
		Implementation		%																				
		Installation		%																				
		Training		%																				
		Maintenance & Support		%																				
		CDW Configuration Services		5%																				
12)	Group 12 - Additional Products/Services Not Identified	Please see CDW•G's Configuration Services Pricelist below for descriptions and pricing of CDW•G's Configuration Services.																						
		Apple Products for eligible Government and Educational Entities		0.50%																				
CDW•G has conformed to the National Pricing structure aligning to National IPA's product taxonomy, however, CDW•G will manage the resultant contract according to CDW•G's Product Tree below, which shall govern all purchases and provides more breadth and a more complete representation of the CDW•G Catalog. All discounts will be applied by product category listed below to CDW•G's Nationally Advertised Pricing which is publicly verifiable at www.cdwg.com.																								
<table><tr><th>CDW•G Product Tree Categories</th><th>Discount</th></tr><tr><td>Accessories</td><td>6.75%</td></tr><tr><td>Power, Cooling & Racks</td><td>5.00%</td></tr><tr><td>Desktop Computers</td><td>3.00%</td></tr><tr><td>PC Compatible Desktop Computer</td><td>2.10%</td></tr><tr><td>PC Compatible Workstation</td><td>3.00%</td></tr><tr><td>Blade PCs</td><td>3.00%</td></tr><tr><td>RISC Processor Workstation</td><td>3.00%</td></tr><tr><td>Thin Clients</td><td>3.00%</td></tr><tr><td>Web TV Access Unit</td><td>3.00%</td></tr></table>					CDW•G Product Tree Categories	Discount	Accessories	6.75%	Power, Cooling & Racks	5.00%	Desktop Computers	3.00%	PC Compatible Desktop Computer	2.10%	PC Compatible Workstation	3.00%	Blade PCs	3.00%	RISC Processor Workstation	3.00%	Thin Clients	3.00%	Web TV Access Unit	3.00%
CDW•G Product Tree Categories	Discount																							
Accessories	6.75%																							
Power, Cooling & Racks	5.00%																							
Desktop Computers	3.00%																							
PC Compatible Desktop Computer	2.10%																							
PC Compatible Workstation	3.00%																							
Blade PCs	3.00%																							
RISC Processor Workstation	3.00%																							
Thin Clients	3.00%																							
Web TV Access Unit	3.00%																							

EXHIBIT B
PRICING

Windows Based Terminals	3.00%
Data Storage / Drives	5.50%
Enterprise Storage	5.00%
Point of Sale/Data Capture	4.25%
Servers & Server Management	4.00%
Services (CDW Delivered)	0.00%
Notebook/Mobile Devices	2.50%
Notebook Computers	2.10%
Notebook Accessories	2.50%
Wireless Communication Devices	2.50%
Convertible PCs/Slate PCs/iPAD	2.25%
Chromebooks	0.00%
Netcomm Products	5.50%
Gigabit Switch	6.00%
Modular Switch Chassis	6.00%
Modular Switches	5.50%
Carts and Furniture	5.00%
Printing & Document Scanning	3.00%
Services (3rd Party Delivered)	0.00%
Warranties-Product Protection	3.50%
Software	4.00%
Collaboration Hardware	4.25%
Memory/System Components	13.00%
Video-Projection-Pro Audio	3.50%
Cables	15.00%
CDW Configuration Services	5.00%
Apple Products for Eligible Entities	.50%

CDW•G will work with Manufacturers and the City or Participating Agencies, as applicable, post award to ensure they are aware of and participating in special manufacturer programs.

CDW•G Account Managers will work with the City or Participating Agencies, as applicable, post award to determine if large orders qualify to receive additional discounts. These discounts are dependent on order size, delivery schedule and will be negotiated with Manufacturers.

As Apple's largest Corporate Channel Partner in the U.S., CDW•G has negotiated to offer Apple Products to Eligible Government and Educational Entities at the discount listed above and in the pricing table in this Exhibit B.

EXHIBIT B
PRICING

CDW•G Professional Services Offering			
Major Metro Service Areas			
Washington, DC New York City Metro Los Angeles San Francisco San Diego Boston Metro Chicago Federal Philadelphia Seattle	Raleigh Houston Tampa Atlanta National Dallas Cincinnati Detroit Minneapolis St. Louis/KC Denver Nashville Portland	Madison Wausau Milwaukee Appleton Grand Rapids Indianapolis Cleveland	
Services apply to both CDW•G executed professional services and services which are sub-contracted through a CDW•G authorized third party provider. Hourly or fixed rates will be negotiated based on the customer, geography, scope of the professional service engagement, and level of engineer required to perform the service. CDW•G will create a Statement of Work (SOW) detailing the exact scoping and pricing of the Services to be provided, which will be executed by CDW•G and the National IPA member prior to the start of Services. Sample SOW is included in our proposal. Expenses (T and E) may be an additional consideration depending on project specifics.			
Solution Domain	Discipline	Technology Domain	Role
Datacenter	Storage	Data Migration	Senior Consulting Engineer
		EMC	Senior Consulting Engineer
		IBM	Senior Consulting Engineer
		VMWare	Senior Consulting Engineer
		NetApp	Senior Consulting Engineer
Datacenter	Networking & Enterprise Networking	Infrastructure & Networking	Associate Consulting Engineer
			Consulting Engineer
			Senior Consulting Engineer
			Principal Consulting Engineer
Mobility	Client Management	Client Virtualization Endpoint Management Mobile Device Management	Technical Lead
			Associate Consulting Engineer
			Consulting Engineer
			Senior Consulting Engineer
			Principal Consulting Engineer
Security	Network Security	Network Security	Technical Lead
			Associate Consulting Engineer
			Consulting Engineer
			Senior Consulting Engineer
			Principal Consulting Engineer

EXHIBIT B PRICING

	Security	Information Security	Information Security	Penetration Testing
				Gap Analysis (HIPAA gap, PCI Gap, NIST)
	Collaboration	Communication	Voice, Video Collaboration	Associate Consulting Engineer
				Consulting Engineer
				Senior Consulting Engineer
				Principal Consulting Engineer
				Technical Lead
	Collaboration	Engagement	Contact Center	Associate Consulting Engineer
				Consulting Engineer
				Senior Consulting Engineer
				Principal Consulting Engineer
				Technical Lead
	Collaboration	Productivity	Information Worker	Associate Consulting Engineer
				Consulting Engineer
				Senior Consulting Engineer
				Principal Consulting Engineer
				Technical Lead
	Consulting Advisory Services	Consulting Advisory Services	Consulting Advisory Services	CAS_Business_Analyst
				CAS_Consulting_Services_Architect
				CAS_Engagement_Manager
				CAS_Technology_Architect
				CAS_Business_Architect
	Project & Program Management	Project & Program Management	Project & Program Management	Project Admin
				Project Manager
				Senior Project Manager
				Program Manager

CDW•G Configuration Services

Service Group	EDC	Description	Advertised Price	Contract Discount	Contract Ceiling Price
Hardware Configurations and Priority Service					
Priority	1625768	PRIORITY SERVICE	\$ 21.99	5%	\$ 20.89
Hardware	1706188	CDW Hardware Install for Server	\$ 32.99	5%	\$ 31.34
Hardware	1706189	CDW Hardware Install for DT-LT	\$ 17.99	5%	\$ 17.09
Hardware	1820627	CDW Hardware Install for Netcom	\$ 22.99	5%	\$ 21.84
Hardware	3558560	CDW MOBILE DEVICE SIM CARD INSTALL	\$ 9.99	5%	\$ 9.49
Hardware	2437037	CDW RACK CONFIG 1 CREDIT	\$ 82.99	5%	\$ 78.84
Hardware	3803338	CDW HARDWARE INSTALL FOR PRINTER	\$ 32.99	5%	\$ 31.34
Asset Tagging					
Asset Tags	322170	CDW ASSET TAGS NO INSTALL MAIL ONLY	\$ 0.98	5%	\$ 0.93
Asset Tags	338519	CDW ASSET TAG W/O INSTALL	\$ 9.99	5%	\$ 9.49
Asset Tags	338521	CUSTOMER ASSET TAG CONFIG SERVICE	\$ 9.99	5%	\$ 9.49
Asset Tags	500814	CDW CREATE CUSTOM TAG/LABEL	\$ 29.99	5%	\$ 28.49
Asset Tags	500815	BASIC CUSTOM TAG	\$ 9.99	5%	\$ 9.49
Asset Tags	500817	INTERMEDIATE CUSTOM TAG	\$ 17.99	5%	\$ 17.09

EXHIBIT B **PRICING**

Asset Tags	500818	ADVANCED CUSTOM TAG	\$ 22.99	5%	\$	21.84
Asset Tags	537315	CDW CREATED CUSTOM TAG – MAIL ONLY	\$ 1.22	5%	\$	1.16
Asset Tags	955862	CDWG UID TAG/LABEL	\$ 9.99	5%	\$	9.49
Asset Tags	1095109	CDW RFID TAG	\$ 61.99	5%	\$	58.89
Asset Tags	3465262	BASIC CUSTOM TAG W/BOX DUP TAG	\$ 10.99	5%	\$	10.44
Asset Tags	3465269	CUSTOMER ASSET TAG W/BOX DUP REQ6330	\$ 10.99	5%	\$	10.44
Asset Tags	4347185	CUSTOMER ASSET TAG W BOX DUP REQ6247	\$ 12.99	5%	\$	12.34
Asset Tags	3465895	INTERMEDIATE CUSTM TAG W-BOX DUP TAG	\$ 21.99	5%	\$	20.89
Asset Tags	3982815	ADV CUSTOM TAG W/BOX DUP	\$ 24.99	5%	\$	23.74
Configuration Service Bundles						
Bundle	2342089	CDW HW IMAGE CDW ASSET TAG-REQ1173	\$ 45.99	5%	\$	43.69
Bundle	2342092	CDW HW IMAGE BASIC CUSTM TAG-REQ1174	\$ 52.99	5%	\$	50.34
Bundle	2342096	CDW HW IMAG CUSTMR ASSET TAG-REQ1175	\$ 52.99	5%	\$	50.34
Bundle	2342098	CDW IMAG CSTMR ASSET TAG PRI-REQ1176	\$ 46.99	5%	\$	44.64
Bundle	2342102	CDW IMAGE CDW ASSET TAG PRI-REQ1177	\$ 39.99	5%	\$	37.99
Bundle	2342106	CDW HW IMAGE PRIORITY-REQ1178	\$ 53.99	5%	\$	51.29
Bundle	2423730	CDW HW IMAGE CDW ASSET PRI-REQ1193	\$ 53.99	5%	\$	51.29
Bundle	2423732	CDW HW IMG BSC CSTM TAG PRI-REQ1194	\$ 59.99	5%	\$	56.99
Bundle	2423734	CDW HW IMAG CUSTMR ASSET PRI-REQ1195	\$ 59.99	5%	\$	56.99
Bundle	2426793	CDW IMAGE CUSTMER ASSET TAG-REQ1197	\$ 39.99	5%	\$	37.99
Bundle	2426795	CDW IMAGE CDW ASSET TAG-REQ1198	\$ 32.99	5%	\$	31.34
Bundle	2426798	CDW HARDWARE IMAGE DEPLOY-REQ1199	\$ 45.99	5%	\$	43.69
Bundle	2853723	CDW IMAGE BASIC CUSTOM TAG-REQ1324	\$ 39.99	5%	\$	37.99
Bundle	2853726	CDW IMAGE BIOS CUSTOMIZATION-REQ1325	\$ 39.99	5%	\$	37.99
Bundle	3269810	CDW HW IMG INTRM TAG CMPTRAC REQ1901	\$ 63.99	5%	\$	60.79
Bundle	3327808	CDW LIGHT TOUCH IMAGE DEPLOY W-VPN	\$ 42.99	5%	\$	40.84
Bundle	4008018	LEVEL 1 IOS\ETCH INSERT REQ 5075	\$ 39.99	5%	\$	37.99
Bundle	4008025	LEVEL 1 IOS\ETCH REQ 5076	\$ 33.99	5%	\$	32.29
Bundle	4041681	IOS LVL1 & SRVC CUST INSERT REQ5156	\$ 28.99	5%	\$	27.54
Bundle	4056755	INT CUST TAG&DUP + DATA CAP CONTRACT	\$ 21.99	5%	\$	20.89
Bundle	4086733	CDW LT IMAGE DEPLOY W/VPN&BOX LABEL	\$ 44.99	5%	\$	42.74
Bundle	4171085	COI SPECOPS & PROJECTMANGEMENT R5611	\$ 569.99	5%	\$	541.49
Diagnostics						
Diagnostics	214266	CDW BURN IN 12 HOURS	\$ 21.99	5%	\$	20.89
Imaging						
Imaging	195856	CDW INSTALLING CUSTOM SERVER IMAGE	\$ 113.99	5%	\$	108.29
Imaging	247489	HILL ROM CREATE CUSTOM RESTORE CD	\$ 49.99	5%	\$	47.49
Imaging	266912	CDW APPLE IMAGE DEPLOYMENT	\$ 32.99	5%	\$	31.34
Imaging	283926	CDW MASTER IMAGE CREATION CREDIT	\$ 183.99	5%	\$	174.79
Imaging	379370	CDW INSTALLING CUSTOM PDA IMAGE	\$ 17.99	5%	\$	17.09
Imaging	534223	CDW STANDARD IMAGE DEPLOYMENT DT/NB	\$ 32.99	5%	\$	31.34
Imaging	763587	FLASH DRIVE IMAGING	\$ 9.99	5%	\$	9.49
Imaging	763593	CDW USB RESTORE UPTO 16GB	\$ 39.99	5%	\$	37.99
Imaging	809048	CDW MAINTAIN CUSTOM PC IMAGE-CREDIT	\$ 31.99	5%	\$	30.39
Imaging	1640342	CDW INSTALLING ALTIRIS SERVER IMAGE	\$ 113.99	5%	\$	108.29
Imaging	1926223	CDW TERMINAL IMAGE DEPLOYMENT	\$ 32.99	5%	\$	31.34
Imaging	2691836	CDW ZERO TOUCH IMAGE DEPLOYMENT	\$ 32.99	5%	\$	31.34
Imaging	2798606	CDW IMAGE MODEL MIGRATION CREDIT	\$ 113.99	5%	\$	108.29

EXHIBIT B **PRICING**

Imaging	2869570	CDW USB RESTORE UPTO 32GB	\$ 52.99	5%	\$ 50.34
Imaging	3652393	CDW CREATE CUSTOM RECOVERY PARTITION	\$ 353.99	5%	\$ 336.29
Imaging	3765107	SERVER RACKING ADV IMAGING SVC	\$ 219.99	5%	\$ 208.99
Imaging	3982809	CDW USB RESTORE SVC UPTO 64GB	\$ 63.99	5%	\$ 60.79
Imaging	4008336	CHROME WHITE GLOVE SERVICE TIER1	\$ 22.93	5%	\$ 21.78
Imaging	4008354	CHROME WHITE GLOVE SERVICE TIER2	\$ 24.93	5%	\$ 23.68
Imaging	4419882	CHROME UNMANAGED KIOSK APP INSTALL	\$ 28.92	5%	\$ 27.47
Imaging	4086723	CDW IMAGE DEPLOY W BOX LABEL REQ6281	\$ 33.99	5%	\$ 32.29
Imaging	4086738	CDW SCCM SRV-ZERO TOUCH W/BOX LABEL	\$ 33.99	5%	\$ 32.29
Laser Etching / Color Branding					
Laser Etching	1461344	CDW LASER ETCHING-TIER 1 STATIC SML	\$ 11.00	5%	\$ 10.45
Laser Etching	2815190	CDW LASER ETCHING-TIER 2 STATIC LRG	\$ 15.00	5%	\$ 14.25
Laser Etching	2815191	CDW LASER ETCHING-TIER 3 DYNAMIC	\$ 22.00	5%	\$ 20.90
Color Branding	3223260	CDW COLOR BRANDING TEMPLATE	\$ -	5%	\$ -
Color Branding	4100630	CDW COLOR BRANDING TIER 1	\$ 15.00	5%	\$ 14.25
Color Branding	3223250	CDW COLOR BRANDING TIER 2	\$ 22.00	5%	\$ 20.90
Color Branding	3436605	CDW COLOR BRANDING TIER 3	\$ 30.00	5%	\$ 28.50
Mobile Carts					
Mobile Carts	4466480	CDW CHROMEBOOK WIRE CART CONFIG	\$ 120.00	5%	\$ 114.00
Netcom					
Netcom	311718	CDW NETWORK & SECURITY DEVICE CONFIG	\$ 40.00	5%	\$ 38.00
Netcom	1550455	CDW NETWORK & SEC CHASSIS CONFIG BUN	\$ 100.00	5%	\$ 95.00
Netcom	1550460	CDW NETWORK & SEC DEVICE CONFIG BUN	\$ 65.00	5%	\$ 61.75
Netcom	2394839	CDW NETWORK & SEC CHASSIS CONFIG	\$ 70.00	5%	\$ 66.50
Netcom	2432019	CDW VPN DOMAIN JOIN ONLY	\$ 8.00	5%	\$ 7.60
Netcom	3628500	CDW VPN DOMAIN JOIN ONLY-PCA	\$ 8.00	5%	\$ 7.60
Netcom	3651585	CDW AP/ENDPOINT PROVISIONING	\$ 30.00	5%	\$ 28.50
Netcom	4121801	CDW AP/ENDPOINT FIRMWARE UPDATE	\$ 16.00	5%	\$ 15.20
Netcom	4219966	CDW CLIENT VPN CONFIGURATION	\$ 12.00	5%	\$ 11.40
Other					
Other	504311	CDW HP ILO ACTIVATION	\$ 12.00	5%	\$ 11.40
Other	872360	CDW SYSTEM BIOS/FIRMWARE UPG	\$ 16.00	5%	\$ 15.20
Other	1197175	CDW CUSTOM IP CONFIGURATION	\$ 12.00	5%	\$ 11.40
Other	1197180	CDW BIOS CUSTOMIZATION	\$ 5.00	5%	\$ 4.75
Other	1369901	CDW SRVC CUSTOM ADDED INSERTS	\$ 5.00	5%	\$ 4.75
Other	1369904	CDW DDS / COMPUTRACE ACTIVATION	\$ 5.00	5%	\$ 4.75
Other	1369905	CDW DATA CAPTURE & TRACKING SRVC	\$ 5.00	5%	\$ 4.75
Other	1713539	CDW SPECIAL CONFIG REQ - 1 CREDIT	\$ 5.00	5%	\$ 4.75
Other	1713542	CDW SPECIAL CONFIG REQ - 6 CREDITS	\$ 30.00	5%	\$ 28.50
Other	1713544	CDW SPECIAL CONFIG REQ - 12 CREDITS	\$ 60.00	5%	\$ 57.00
Other	2366694	CDW APPLE IOS CUSTOMIZATION LVL 1	\$ 15.00	5%	\$ 14.25
Other	2366709	CDW APPLE IOS CUSTOMIZATION LVL 2	\$ 30.00	5%	\$ 28.50
Other	2613286	CDW ANDROID CUSTOMIZATION LVL 1	\$15.00	5%	\$ 14.25
Other	2613287	CDW ANDROID CUSTOMIZATION LVL 2	\$ 30.00	5%	\$ 28.50
Other	2671476	CDW SCREEN OVERLAY INSTALL SERVICE	\$ 8.00	5%	\$ 7.60
Other	2696504	CDW Hard Drive Data Encryption DT/NB	\$ 12.00	5%	\$ 11.40
Other	2828923	CDW SAS RAID Activation	\$ 12.00	5%	\$ 11.40
Other	2858009	CDW KINDLE AD REMOVAL REQ1329	\$ 30.00	5%	\$ 28.50

EXHIBIT B **PRICING**

Other	3553290	CDW APPLE ID CREATION	\$ 5.00	5%	\$ 4.75
Other	3899153	CDW VPRO BASIC ACTIVATION REQ4717	\$ 5.00	5%	\$ 4.75
Other	4248044	CDW LENOVO IMM ACTIVATION	\$ 12.00	5%	\$ 11.40
Other	4176320	CDW ASSET MGMNT UPDATE SVC REQ 5634	\$ 1.25	5%	\$ 1.19
Software					
Software	76056	CDW APPLICATION INSTALL DT/NB	\$ 36.00	5%	\$ 34.20
Software	76980	CDW NETWORK OPERATING SYSTEM INSTALL	\$ 200.00	5%	\$ 190.00
Software	346243	CDW STD WINDOWS CLIENT OS INSTALL	\$ 90.00	5%	\$ 85.50
Software	931000	CDW NETWORK APPLICATION INSTALL	\$ 100.00	5%	\$ 95.00
Software	1197183	CDW APPLICATION UPDATES AND MAINTENANCE	\$ 22.00	5%	\$ 20.90
Software	1278296	CDW OEM MFG OS INSTALLATION	\$ 90.00	5%	\$ 85.50
Software	1291101	CDW LINUX INSTALLATION OS-ALL VERS	\$ 120.00	5%	\$ 114.00
Software	1550439	SUN SOLARIS INSTALLATION – ALL VERSIONS	\$ 200.00	5%	\$ 190.00
Software	1550447	VMWARE INSTALLATION – ALL VERSIONS	\$ 70.00	5%	\$ 66.50
Software	3803347	CDW SOFTWARE CONFIG FOR PRINTER	\$ 24.00	5%	\$ 22.80
Software	3982800	CDW HDD OS SWAP SVC REQ5012	\$ 36.00	5%	\$ 34.20
Configuration Project Management / COI					
Proj. Mgmt	3110955	CDW CONFIG PROJECT COORD HRLY CREDIT	\$ 75.00	5%	\$ 71.25
Proj. Mgmt	4289890	CDW CONFIG PM 150 HRLY CHARGE	\$ 150.00	5%	\$ 142.50
Proj. Mgmt	3536706	CDW COI PROJ COORD /OPS COST	\$ 5,000.00	5%	\$ 4,750.00
Proj. Mgmt	3543509	CDW CONFIG PROJECT COORD CREDIT/UNIT	\$ 5.00	5%	\$ 4.75
Proj. Mgmt	3752290	CDW PROJ MNGMNT CONFIG AP SVC	\$ 7.00	5%	\$ 6.65
Proj. Mgmt	4086747	CONFIGS SERVICES PROJ MGMT(PER UNIT)	\$ 1.00	5%	\$ 0.95
Proj. Mgmt	4087191	CONFIGS SERVICES PROJ MGMT(PER UNIT)	\$ 0.50	5%	\$ 0.48
COI	3268855	CDW CONFIG PROJECT COORD COI SVC	\$ 300.00	5%	\$ 285.00
COI	3561536	COI OPS PALLET RECEIVING/PROCESSING	\$ 480.00	5%	\$ 456.00
COI	4439488	COI OPS PALLET/MONTH REC/PRO	\$ 40.00	5%	\$ 38.00
COI	3659769	CDW COI OPERATIONAL EXPENSE WITH SN	\$ 10.00	5%	\$ 9.50
COI	3827583	COI TEMP TAG NO INSTALL E-MAIL	\$ 10.00	5%	\$ 9.50

EXHIBIT C
MESA STANDARD TERMS AND CONDITIONS

1. **INDEPENDENT CONTRACTOR.** It is expressly understood that the relationship of Contractor to the City will be that of an independent contractor. Contractor and all persons employed by Contractor, either directly or indirectly, are Contractor's employees, not City employees. Accordingly, Contractor and Contractor's employees are not entitled to any benefits provided to City employees including, but not limited to, health benefits, enrollment in a retirement system, paid time off or other rights afforded City employees. Contractor employees will not be regarded as City employees or agents for any purpose, including the payment of unemployment or workers' compensation. If any Contractor employees or subcontractors assert a claim for wages or other employment benefits against the City, Contractor will defend, indemnify and hold harmless the City from all such claims.
2. **SUBCONTRACTING.** Contractor may not subcontract work under this Agreement without the express written permission of the City. If Contractor has received authorization to subcontract work, it is agreed that all subcontractors performing work under the Agreement must comply with its provisions. Further, all agreements between Contractor and its subcontractors must provide that the terms and conditions of this Agreement be incorporated therein.
3. **ASSIGNMENT.** This Agreement may not be assigned either in whole or in part without first receiving the City's written consent. Any attempted assignment, either in whole or in part, without such consent will be null and void and in such event the City will have the right at its option to terminate the Agreement. No granting of consent to any assignment will relieve Contractor from any of its obligations and liabilities under the Agreement.
4. **SUCCESSORS AND ASSIGNS, BINDING EFFECT.** This Agreement will be binding upon and inure to the benefit of the parties and their respective permitted successors and assigns.
5. **NO THIRD-PARTY BENEFICIARIES.** This Agreement is intended for the exclusive benefit of the parties. Nothing set forth in this Agreement is intended to create, or will create, any benefits, rights, or responsibilities in any third parties.
6. **NON-EXCLUSIVITY.** The City, in its sole discretion, reserves the right to request the materials or services set forth herein from other sources when deemed necessary and appropriate. No exclusive rights are encompassed through this Agreement.
7. **AMENDMENTS.** There will be no oral changes to this Agreement. This Agreement can only be modified in a writing signed by both parties. No charge for extra work or material will be allowed unless approved in writing, in advance, by the City and Contractor.
8. **TIME OF THE ESSENCE.** Time is of the essence to the performance of the parties' obligations under this Agreement.
9. **COMPLIANCE WITH APPLICABLE LAWS.**
 - a. **General.** Contractor must procure all permits and licenses, and pay all charges and fees necessary and incidental to the lawful conduct of business. Contractor must stay fully informed of existing and future federal, state, and local laws, ordinances, and regulations that in any manner affect the fulfillment of this Agreement and must comply with the same at its own expense. Contractor bears full responsibility for training, safety, and providing necessary equipment for all Contractor personnel to achieve throughout the term of the Agreement. Upon request, Contractor will demonstrate to the City's satisfaction any programs, procedures, and other activities used to ensure compliance.
 - b. **Drug-Free Workplace.** Contractor is hereby advised that the City has adopted a policy establishing a drug-free workplace for itself and those doing business with the City to ensure the safety and health of all persons working on City contracts and projects. Contractor will require a drug-free workplace for all Contractor personnel working under this Agreement. Specifically, all Contractor personnel who are working under this Agreement must be notified in writing by Contractor that they are prohibited from the manufacture, distribution, dispensation, possession, or unlawful use of a controlled substance in the workplace.

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Contractor agrees to prohibit the use of intoxicating substances by all Contractor personnel, and will ensure that Contractor personnel do not use or possess illegal drugs while in the course of performing their duties.

- c. **Federal and State Immigration Laws.** Contractor agrees to comply with the Immigration Reform and Control Act of 1986 (IRCA) in performance under this Agreement and to permit the City and its agents to inspect applicable personnel records to verify such compliance as permitted by law. Contractor will ensure and keep appropriate records to demonstrate that all Contractor personnel have a legal right to live and work in the United States.
- i. As applicable to Contractor, under the provisions of A.R.S. § 41-4401, Contractor hereby warrants to the City that Contractor and each of its subcontractors will comply with, and are contractually obligated to comply with, all federal immigration laws and regulations that relate to their employees and A.R.S. § 23-214(A) (hereinafter "Contractor Immigration Warranty").
 - ii. A breach of the Contractor Immigration Warranty will constitute as a material breach of this Agreement and will subject Contractor to penalties up to and including termination of this Agreement at the sole discretion of the City.
 - iii. The City retains the legal right to inspect the papers of all Contractor personnel who provide services under this Agreement to ensure that Contractor or its subcontractors are complying with the Contractor Immigration Warranty. Contractor agrees to assist the City in regard to any such inspections.
 - iv. The City may, at its sole discretion, conduct random verification of the employment records of Contractor and any subcontractor to ensure compliance with the Contractor Immigration Warranty. Contractor agrees to assist the City in regard to any random verification performed.
 - v. Neither Contractor nor any subcontractor will be deemed to have materially breached the Contractor Immigration Warranty if Contractor or subcontractor establishes that it has complied with the employment verification provisions prescribed by Sections 274A and 274B of the Federal Immigration and Nationality Act and the E-Verify requirements prescribed by A.R.S. § 23-214 (A).
- d. **Nondiscrimination.** Contractor represents and warrants that it does not discriminate against any employee or applicant for employment or person to whom it provides services because of race, color, religion, sex, national origin, or disability, and represents and warrants that it complies with all applicable federal, state, and local laws and executive orders regarding employment. Contractor and Contractor's personnel will comply with applicable provisions of Title VII of the U.S. Civil Rights Act of 1964, as amended, Section 504 of the Federal Rehabilitation Act, the Americans with Disabilities Act (42 U.S.C. § 12101 et seq.), and applicable rules in performance under this Agreement.
- e. **State Sponsors of Terrorism Prohibition.** Per A.R.S. § 35-392, Contractor must not be in violation of section 6(j) of the Federal Export Administration Act and subsequently prohibited by the State of Arizona from selling goods or services to the City.

10. **SALES/USE TAX, OTHER TAXES.**

- a. Contractor is responsible for the payment of all taxes including federal, state, and local taxes related to or arising out of Contractor's services under this Agreement, including by way of illustration but not limitation, federal and state income tax, Social Security tax, unemployment insurance taxes, and any other taxes or business license fees as required. If any taxing authority should deem Contractor or Contractor employees an employee of the City, or should otherwise claim the City is liable for the payment of taxes that are Contractor's responsibility under this Agreement, Contractor will indemnify the City for any tax liability, interest, and penalties imposed upon the City.

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- b. The City is exempt from paying certain federal excise taxes and will furnish an exemption certificate upon request. The City is not exempt from state and local sales/use taxes.
11. **AMOUNTS DUE THE CITY.** Contractor must be current and remain current in all obligations due to the City during the performance of Services under the Agreement. Payments to Contractor may be offset by any delinquent amounts due the City or fees and charges owed to the City.
12. **PUBLIC RECORDS.** Contractor acknowledges that the City is a public entity, subject to Arizona's public records laws (A.R.S. § 39-121 et. seq.) and that any documents related to this Agreement may be subject to disclosure pursuant to state law in response to a public records request or to subpoena or other judicial process.
- a. If Contractor believes document related to the Agreement contains trade secrets or other proprietary data, Contractor must notify the City and include with the notification a statement that explains and supports Contractor's claim. Contractor also must specifically identify the trade secrets or other proprietary data that Contractor believes should remain confidential.
- b. In the event the City determines it is legally required to disclose pursuant to law any documents or information Contractor deems confidential trade secrets or proprietary data, the City, to the extent possible, will provide Contractor with prompt written notice by certified mail, fax, email or other method that tracks delivery status of the requirement to disclose the information so Contractor may seek a protective order from a court having jurisdiction over the matter or obtain other appropriate remedies. The notice will include a time period for Contractor to seek court ordered protection or other legal remedies as deemed appropriate by Contractor. If Contractor does not obtain such court ordered protection by the expiration of said time period, the City may release the information without further notice to Contractor.
13. **AUDITS AND RECORDS.** Contractor must preserve the records related to this Agreement for six (6) years after completion of the Agreement. The City or its authorized agent reserves the right to inspect any records related to the performance of work specified herein. In addition, the City may inspect any and all payroll, billing or other relevant records kept by Contractor in relation to the Agreement. Contractor will permit such inspections and audits during normal business hours and upon reasonable notice by the City. The audit of records may occur at Contractor's place of business or at City offices, as determined by the City. Notwithstanding the foregoing, any Agreement audits must be pursuant to a signed Confidentiality Agreement agreed to by both parties which will be subject to applicable law, including the Arizona Public Records law. Contractor is not required to keep original documents and copies of relevant documents will suffice for the purposes of this provision. The audit must be conducted during regular business hours at a mutually agreeable time and location, and upon reasonable advanced notice of records to be audited.
14. **BACKGROUND CHECK.** The City may conduct criminal, driver history, and all other requested background checks of Contractor personnel who would perform services under the Agreement or who will have access to the City's information, data, or facilities in accordance with the City's current background check policies. Any officer, employee, or agent that fails the background check must be replaced immediately for any reasonable cause not prohibited by law.
15. **SECURITY CLEARANCE AND REMOVAL OF CONTRACTOR PERSONNEL.** The City will have final authority, based on security reasons: (i) to determine when security clearance of Contractor personnel is required; (ii) to determine the nature of the security clearance, up to and including fingerprinting Contractor personnel; and (iii) to determine whether or not any individual or entity may provide services under this Agreement. If the City objects to any Contractor personnel for any reasonable cause not prohibited by law, then Contractor will, upon notice from the City, remove any such individual from performance of services under this Agreement.
16. **DEFAULT.**
- a. A party will be in default if that party:

EXHIBIT C
MESA STANDARD TERMS AND CONDITIONS

- i. Is or becomes insolvent or is a party to any voluntary bankruptcy or receivership proceeding, makes an assignment for a creditor, or there is any similar action that affects Contractor's capability to perform under the Agreement;
 - ii. Is the subject of a petition for involuntary bankruptcy not removed within sixty (60) calendar days;
 - iii. Conducts business in an unethical manner as set forth in the City Procurement Rules Article 7 or in an illegal manner; or
 - iv. Fails to carry out any term, promise, or condition of the Agreement.
 - b. Contractor will be in default of this Agreement if Contractor is debarred from participating in City procurements and solicitations in accordance with Article 6 of the City's Procurement Rules.
 - c. **Notice and Opportunity to Cure.** In the event a party is in default then the other party may, at its option and at any time, provide written notice to the defaulting party of the default. The defaulting party will have thirty (30) days from receipt of the notice to cure the default; the thirty (30) day cure period may be extended by mutual agreement of the parties, but no cure period may exceed ninety (90) days. A default notice will be deemed to be sufficient if it is reasonably calculated to provide notice of the nature and extent of such default. Failure of the non-defaulting party to provide notice of the default does not waive any rights under the Agreement.
 - d. **Anticipatory Repudiation.** Whenever the City in good faith has reason to question Contractor's intent or ability to perform, the City may demand that Contractor give a written assurance of its intent and ability to perform. In the event that the demand is made and no written assurance is given within five (5) calendar days, the City may treat this failure as an anticipatory repudiation of the Agreement.
17. **REMEDIES.** The remedies set forth in this Agreement are not exclusive. Election of one remedy will not preclude the use of other remedies. In the event of default:
- a. The non-defaulting party may terminate the Agreement, and the termination will be effective immediately or at such other date as specified by the terminating party.
 - b. The City may purchase the services required under the Agreement from the open market, complete required work itself, or have it completed at the expense of Contractor. If the cost of obtaining substitute services exceeds the contract price, the City may recover the excess cost by: (i) requiring immediate reimbursement to the City; (ii) deduction from an unpaid balance due to Contractor; (iii) collection against the proposal and/or performance security, if any; (iv) collection against liquidated damages (if applicable); or (v) a combination of the aforementioned remedies or other remedies as provided by law. Costs includes any and all, fees, and expenses incurred in obtaining substitute services and expended in obtaining reimbursement, including, but not limited to, administrative expenses, attorneys' fees, and costs.
 - c. The non-defaulting party will have all other rights granted under this Agreement and all rights at law or in equity that may be available to it.
 - d. Neither party will be liable for incidental, special, or consequential damages.
18. **CONTINUATION DURING DISPUTES.** Contractor agrees that during any dispute between the parties, Contractor will continue to perform its obligations until the dispute is settled, instructed to cease performance by the City, enjoined or prohibited by judicial action, or otherwise required or obligated to cease performance by other provisions in this Agreement.
19. **TERMINATION FOR CONVENIENCE.** The City reserves the right to terminate this Agreement in part or in whole upon thirty (30) calendar days' written notice.
20. **TERMINATION FOR CONFLICT OF INTEREST (A.R.S. § 38-511).** Pursuant to A.R.S. § 38-511, the City may cancel this Agreement within three (3) years after its execution, without penalty or

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MESA STANDARD TERMS AND CONDITIONS

further obligation, if any person significantly involved in initiating, securing, drafting, or creating the Agreement for the City becomes an employee or agent of Contractor.

21. **TERMINATION FOR NON-APPROPRIATION AND MODIFICATION FOR BUDGETARY CONSTRAINT.** The City is a governmental agency which relies upon the appropriation of funds by its governing body to satisfy its obligations. If the City reasonably determines that it does not have funds to meet its obligations under this Agreement, the City will have the right to terminate the Agreement without penalty on the last day of the fiscal period for which funds were legally available. In the event of such termination, the City agrees to provide written notice of its intent to terminate thirty (30) calendar days prior to the stated termination date.
22. **PAYMENT TO CONTRACTOR UPON TERMINATION.** Upon termination of this Agreement, Contractor will be entitled only to payment for those services performed up to the date of termination, and any authorized expenses already incurred up to such date of termination. The City will make final payment within thirty (30) calendar days after the City has both completed its appraisal of the materials and services provided and received Contractor's properly prepared final invoice.
23. **NON-WAIVER OF RIGHTS.** There will be no waiver of any provision of this agreement unless approved in writing and signed by the waiving party. Failure or delay to exercise any rights or remedies provided herein or by law or in equity, or the acceptance of, or payment for, any services hereunder, will not release the other party of any of the warranties or other obligations of the Agreement and will not be deemed a waiver of any such rights or remedies.
24. **INDEMNIFICATION/LIABILITY.**
 - a. To the fullest extent permitted by law, Contractor agrees to defend, indemnify, and hold the City, its officers, agents, and employees, harmless from and against any and all liabilities, demands, claims, suits, losses, damages, causes of action, fines or judgments, including costs, attorneys', witnesses', and expert witnesses' fees, and expenses incident thereto, relating to, arising out of, or resulting from: (i) misconduct by Contractor personnel under this Agreement; (ii) any negligent acts, errors, mistakes or omissions by Contractor or Contractor personnel; and (iii) Contractor or Contractor personnel's failure to comply with this Agreement. However, notwithstanding the prior sentence, any claim shall not be an indemnified claim if such claim or damage was caused in whole by the actions of the City, its employees, agents, contractors or representatives.
 - b. Contractor will update the City during the course of the litigation to timely notify the City of any issues that may involve the independent negligence of the City that is not covered by this indemnification.
 - c. The City assumes no liability for actions of Contractor and will not indemnify or hold Contractor or any third party harmless for claims based on this Agreement or use of Contractor-provided supplies or Services.
 - d. IN THE EVENT OF ANY LIABILITY INCURRED BY CONTRACTOR OR ANY OF ITS AFFILIATES HEREUNDER, INCLUDING INDEMNIFICATION OF CITY BY CONTRACTOR, THE ENTIRE LIABILITY OF CONTRACTOR AND ITS AFFILIATES FOR DAMAGES FROM ANY CAUSE WHATSOEVER WILL NOT EXCEED \$5,000,000.00 OVER THE ENTIRE TERM OF THE AGREEMENT.
25. **WARRANTY.** Contractor warrants that the services and materials will conform to the requirements of Exhibit A. Additionally, Contractor warrants that all services will be performed in a good, workman-like and professional manner, as stated below.
 - a. **Manufacturer's Warranty.** The City understands that the Contractor is not the manufacturer of the products purchased by the City hereunder and the only materials (product) warranties offered are those of the manufacturer, not the Contractor or its affiliates unless the manufacturer is the Contractor or its affiliates. THE CONTRACTOR AND ITS AFFILIATES HEREBY EXPRESSLY DISCLAIM ALL WARRANTIES EITHER EXPRESS OR IMPLIED,

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RELATED TO PRODUCTS, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF TITLE, ACCURACY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WARRANTY OF NONINFRINGEMENT, OR ANY WARRANTY RELATING TO THIRD PARTY SERVICES. THE DISCLAIMER CONTAINED IN THIS PARAGRAPH DOES NOT AFFECT THE TERMS OF ANY MANUFACTURER'S WARRANTY.

- b. **Services Warranty.** City's sole and exclusive remedy with respect to a warranty on the Services provided by Contractor will be, at the sole option of Contractor, to either: (a) use its reasonable commercial efforts to reperform any services not in substantial compliance with this warranty, or (b) refund amounts paid by City related to the portion of the services not in substantial compliance; provided, in each case, City notifies Contractor in writing within five (5) business days after performance of the applicable Services. City shall be solely responsible for daily back-up and other protection of its data and software against loss, damage or corruption during the performance of services and for any necessary reconstruction thereof.
 - c. **Third Party Services Warranty.** In connection with the products (materials), certain services, such as extended warranty service by manufacturers, are sold by the Contractor as a distributor or sales agent ("Third Party Services"). In the case of Third Party Services, the third party will be the party responsible for providing the services to the City and the City will look to the third party for any loss, claims or damages arising from or related to the provision of such Third-Party Services. Any amounts, including, but not limited to, taxes, associated with Third Party Services which may be collected by the Contractor will be collected solely in the capacity as an independent sales agent.
26. **THE CITY'S RIGHT TO RECOVER AGAINST THIRD PARTIES.** Contractor will do nothing to prejudice the City's right to recover against third parties for any loss, destruction, or damage to City property, and will at the City's request and expense, furnish to the City reasonable assistance and cooperation, including assistance in the prosecution or defense of suit and the execution of instruments of assignment in favor of the City in obtaining recovery.
27. **NO GUARANTEE OF WORK.** Contractor acknowledges and agrees that it is not entitled to deliver any specific amount of materials or services or any materials or services at all under this Agreement and acknowledges and agrees that the materials or services will be requested by the City on an as needed basis at the sole discretion of the City. Any document referencing quantities or performance frequencies represent the City's best estimate of current requirements, but will not bind the City to purchase, accept, or pay for materials or services which exceed its actual needs.
28. **OWNERSHIP.**
- a. Except as it pertains to the Work Product in Subsection (b) below, all deliverables, services, and information provided by Contractor or the City pursuant to this Agreement (whether electronically or manually generated) including without limitation, reports, test plans, and survey results, graphics, and technical tables, originally prepared in the performance of this Agreement, are the property of the City and will not be used or released by Contractor or any other person except with prior written permission by the City.
 - b. City's rights to Work Product (meaning deliverables to be provided or created individually or jointly in connection with the services, not materials, provided by Contractor, including but not limited to, all inventions, discoveries, methods, processes, formulae, ideas, concepts, techniques, know-how, data, designs, models, prototypes, works of authorship, computer programs, proprietary tools, methods of analysis and other information, whether or not capable of protection by patent, copyright, trade secret, confidentiality, or other proprietary rights, or discovered in the course of performance of this Agreement that are embodied in such work or materials) will be, upon payment in full, a non-transferable, non-exclusive, royalty-free license to use such Work Product solely for City's internal use. City obtains no ownership or other property rights thereto. City agrees that Contractor may incorporate intellectual property created by third parties into the Work Product and that City's right to use such Work Product may be subject to the rights of, and limited by agreements with, such third parties

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29. **USE OF NAME.** Contractor will not use the name of the City of Mesa in any advertising or publicity without obtaining the prior written consent of the City.
30. **PROHIBITED ACTS.** Pursuant to A.R.S. § 38-504, a current or former public officer or employee within the last twelve (12) months shall not represent another organization before the City on any matter for which the officer or employee was directly concerned and personally participated in during their service or employment or over which they had a substantial or material administrative discretion. Further, while employed by the City and for two (2) years thereafter, public officers or employees are prohibited from disclosing or using, without appropriate authorization, any confidential information acquired by such personnel in the course of his or her official duties at the City.
31. **FOB DESTINATION FREIGHT PREPAID AND ALLOWED.** All deliveries will be FOB destination freight prepaid and allowed unless otherwise agreed.
32. **RISK OF LOSS.** Contractor agrees to bear all risks of loss, injury, or destruction of Contractor's goods or equipment incidental to providing these services and such loss, injury, or destruction will not release Contractor from any obligation hereunder.
33. **SAFEGUARDING CITY PROPERTY.** Contractor will be responsible for any damage to City real property or damage or loss of City personal property when such property is the responsibility of or in the custody of Contractor or its employees.
34. **WARRANTY OF RIGHTS.** Contractor warrants it has title to, or the right to allow the City to use, the materials and services being provided and that the City may use same without suit, trouble or hindrance from Contractor or third parties.
35. **PROPRIETARY RIGHTS INDEMNIFICATION.** Without limiting the foregoing, Contractor will at its expense defend the City against all claims asserted by any person that anything provided by Contractor infringes a patent, copyright, trade secret or other intellectual property right (collectively "Claim") and must, without limitation, pay the costs, damages and attorneys' fees awarded against the City in any Claim, or pay any settlement of such Claim. Each party agrees to notify the other promptly of any matters to which this provision may apply and to cooperate with each other in connection with such defense or settlement. If a preliminary or final judgment is obtained against the City's use or operation of the items provided by Contractor hereunder or any part thereof by reason of any alleged infringement, Contractor will, at its sole option and its expense and without limitation, either: (a) modify the item so that it becomes non-infringing; (b) procure for the City the right to continue to use the item; (c) substitute for the infringing item other item(s) having at least equivalent capability; or (d) refund to the City an amount equal to the price paid, less reasonable usage, from the time of installation acceptance through cessation of use, which amount will be calculated on a useful life not less than five (5) years based on a five (5) year straight line amortized basis. The foregoing provisions in this Section state the entire liability of Contractor and the sole and exclusive remedy of the City with respect to any Claim. Contractor shall have no liability or obligation to the City to the extent any Claim is based upon: (i) any combination of anything provided by Contractor with other software, hardware or other materials not authorized by Contractor or manufacturer; or (ii) any addition to, or modification of, anything provided by Contractor made after delivery to the City by any person other than Contractor.
36. **CONTRACT ADMINISTRATION.** The contract will be administered by the Purchasing Administrator and/or an authorized representative from the using department. All questions regarding the contract will be referred to the administrator for resolution. Supplements may be written to the contract for the addition or deletion of services. Payment will be negotiated and determined by the contract administrator(s).
37. **FORCE MAJEURE.** Failure by either party to perform its duties and obligations will be excused by unforeseeable circumstances beyond its reasonable control, including acts of nature, acts of the public enemy, riots, fire, explosion, legislation, and governmental regulation. The party whose performance is so affected will within five (5) calendar days of the unforeseeable circumstance notify the other party of all pertinent facts and identify the force majeure event. The party whose

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performance is so affected must also take all reasonable steps, promptly and diligently, to prevent such causes if it is feasible to do so, or to minimize or eliminate the effect thereof. The delivery or performance date will be extended for a period equal to the time lost by reason of delay, plus such additional time as may be reasonably necessary to overcome the effect of the delay, provided however, under no circumstances will delays caused by a force majeure extend beyond one hundred-twenty (120) calendar days from the scheduled delivery or completion date of a task unless agreed upon by the parties.

38. **COOPERATIVE USE OF CONTRACT.** This contract is available through National IPA to agencies nationwide. The City has also entered into various cooperative purchasing agreements with other Arizona government agencies, including the Strategic Alliance for Volume Expenditures (SAVE) cooperative. Under the SAVE Cooperative Purchasing Agreement, any contract may be extended for use by other municipalities, school districts and government agencies through National IPA or SAVE in the State of Arizona with the approval of Contractor. Any such usage by other entities must be in accordance with the statutes, codes, ordinances, charter and/or procurement rules and regulations of the respective government agency.

A contractor, subcontractor or vendor or any employee of a contractor, subcontractor or vendor who is contracted to provide services on a regular basis at an individual school shall obtain a valid fingerprint clearance card pursuant to title 41, chapter 12, article 3.1. A school district governing board shall adopt policies to exempt a person from the requirements of this subsection if the person's normal job duties are not likely to result in independent access to or unsupervised contact with pupils. A school district, its governing board members, its school council members and its employees are exempt from civil liability for the consequences of adoption and implementation of policies and procedures pursuant to this subsection unless the school district, its governing board members, its school council members or its employees are guilty of gross negligence or intentional misconduct.

Additionally, Contractor will comply with the governing body's fingerprinting policy of each individual school district and public entity. Contractor, subcontractors, vendors and their employees will not provide services on school district properties until authorized by the school district.

Orders placed by other agencies and payment thereof will be the sole responsibility of that agency. The City is not responsible for any disputes arising out of transactions made by others. The City is not a party to any agreements between the Contractor and National IPA, National IPA and other agencies, the Contractor and other agencies, or any third-party contracts in any way related to this Agreement or the cooperative use of this Agreement.

39. **FUEL CHARGES AND PRICE INCREASES.** No fuel surcharges will be accepted. No price increases will be accepted without proper request by Contractor and response by the City's Purchasing Division.
40. **NOTICES.** All notices to be given pursuant to this Agreement must be delivered to the parties at their respective addresses. Notices may be (i) personally delivered; (ii) sent via certified or registered mail, postage prepaid; (iii) sent via overnight courier; or (iv) sent via email or facsimile. If provided by personal delivery, receipt will be deemed effective upon delivery. If sent via certified or registered mail, receipt will be deemed effective three (3) calendar days after being deposited in the United States mail. If sent via overnight courier, email or facsimile, receipt will be deemed effective two (2) calendar days after the sending thereof.
41. **GOVERNING LAW, FORUM.** This Agreement is governed by the laws of the State of Arizona. The exclusive forum selected for any proceeding or suit in law or equity arising from or incident to this Agreement will be Maricopa County, Arizona.
42. **INTEGRATION CLAUSE.** This Agreement, including all attachments and exhibits hereto, supersede all prior oral or written agreements, if any, between the parties and constitutes the entire agreement between the parties with respect to the work to be performed.

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43. **PROVISIONS REQUIRED BY LAW.** Any provision required by law to be in this Agreement is a part of this Agreement as if fully stated in it.
44. **SEVERABILITY.** If any provision of this Agreement is declared void or unenforceable, such provision will be severed from this Agreement, which will otherwise remain in full force and effect. The parties will negotiate diligently in good faith for such amendment(s) of this Agreement as may be necessary to achieve the original intent of this Agreement, notwithstanding such invalidity or unenforceability.
45. **SURVIVING PROVISIONS.** Notwithstanding any completion, termination, or other expiration of this Agreement, all provisions which, by the terms of reasonable interpretation thereof, set forth rights and obligations that extend beyond completion, termination, or other expiration of this Agreement, will survive and remain in full force and effect. Except as specifically provided in this Agreement, completion, termination, or other expiration of this Agreement will not release any party from any liability or obligation arising prior to the date of termination.
46. **A.R.S. SECTIONS 1-501 and 1-502.** Pursuant to Arizona Revised Statutes Sections 1-501 and 1-502, any person who applies to the City for a local public benefit (the definition of which includes a grant, contract or loan) must demonstrate his or her lawful presence in the United States. As the Agreement is deemed a local public benefit, if Contractor is an individual (natural) person or sole proprietorship, Contractor agrees to sign and submit the necessary documentation to prove compliance with the statutes as applicable.

City of Mesa

Information Technology Solutions and Services

Solicitation #2018011

October 23, 2017

Original



*CDW Government LLC
230 N. Milwaukee Ave.
Vernon Hills, IL 60061*





One CDW Way
230 N. Milwaukee Ave
Vernon Hills, IL 60061

P: 847.371.5800
F: 847.465.6800
Toll-Free: 800.808.4239

www.cdwg.com/PeopleWhoGetIT

City of Mesa
20 E Main Street, Suite #400
Mesa, AZ 85201
October 23, 2017

RE: Information Technology Solutions and Services Solicitation #2018011

Dear Ms. Brause:

CDW-G is pleased to present the following proposal to the City of Mesa. As a leading provider of IT solutions to state and local entities, we are excited to present our response to your needs. Over the past decade through our relationship with National IPA, we have seen a consistent 30% annual growth of our contract. Our contract expertise, customer-focus, and commitment to diversity have enabled us to bring our customers the solutions and services that deliver outstanding value. We regularly respond to varied IT needs: Be it small rural communities to large municipalities and states, the City of Mesa can be sure that we are ready to be your partner in any IT enterprise. Below are just a few of the benefits that the members of this cooperative will enjoy:

Contract Expertise. Consistently meeting your needs is our main focus which is why we'll update your contract, adding new technologies as soon as you need them. If it is in our catalog, we can add it to your contract. Whatever your needs may be, we will work with you to make sure those needs are met. Included in your contract are pricing options that will enable the City of Mesa to compare pricing options. This benefit enables you to make more informed decisions and provides you with purchasing reports.

Local Presence, National Reach. Whether it's in small towns, rural counties, or large cities, we'll be where you are to leverage our national network of service providers, bringing you the expert/customer-centered solutions you've come to expect from us. With 30 locations nationally and coworkers located in 45 states, we are dedicated to serving our customers' needs, wherever they are. You will enjoy a dedicated team of CDW-G resources who stand ready to work with you and solve today's technology challenges. Coupled with our strong centralized support locations, we offer you a national contract with a local focus, tailored to your requirements, with a flexibility to grow with you as your needs change.

Commitment to Diversity. We work with hundreds of diverse suppliers to promote historically underutilized and local businesses. These local suppliers are part of the reason we are able to deliver exceptional products and services. As members of your local community, we work with these suppliers to better understand our customers' needs and to support locally-focused businesses. We partner with over 600 MBE/WBE businesses and achieve more than \$1.5B annually in overall diversity spend.

We look forward to establishing a collaborative working relationship and are confident that our proposal will exceed your expectations. To discuss our response, please contact Proposal Specialist Cale LaSalata at calelas@cdw.com or 203-851-7211.

Sincerely,

Christina V. Rother
President, CDW Government LLC

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Executive Summary

The City of Mesa, through this solicitation, has partnered with the National Intergovernmental Purchasing Alliance Company (“National IPA”) to enable public and non-public entities in Arizona to purchase all manner of IT solutions and services. Understanding that value and efficiency in procurement are hot-button issues for the City of Mesa, we have kept that as our guiding principles for the response contained herein. As states and municipalities work within constrained budgets, now more than ever, value and sound purchasing practices of utmost importance when choosing an IT solutions provider and partner. CDW Government LLC (“CDW•G”) has been a reliable partner of National IPA for over a decade with a demonstrable track record of delivering outstanding IT solutions, with efficient delivery, and all of the benefits that come from this contract.



What sets our offer apart from what our competition will provide is that our approach to our customers is to treat them as a partner. Everything that we do as a company revolves around the main focus of our business: our customers. Because we provide solutions to a variety of entities (from public to private; small businesses and rural communities, to the federal government and large municipalities), we know that solutions aren’t “one-size fits all.” Tailoring our solutions to our customers requires us to get to know you and meet you where you are to gain a better understanding of what drives your business.

Evidenced by our ten year successful relationship with the team at National IPA, our approach to IT solutions reflects a belief that true value comes from delivering to our customers exactly what they want, when they want it. Efficient online purchasing, dedicated support, highly certified services providers, and contract compliance are only a few of the features of what we can deliver to the City of Mesa.

Contract Excellence

Understanding that compliance with city policy and state financial statutes is important to the City of Mesa, we have built our response to Mesa around our approach to working with government customers. We know that the City of Mesa has legal and regulatory compliance requirements to which you have to adhere. That is why our approach incorporates your regulatory compliance needs and builds your contract around those obligations. Contract participants’ Account Center has a wealth of information which will enable them to make better informed purchasing decisions and provide them reports on purchases, updated pricing, and much more.

What differentiates us from our competition is our Program Management team who oversee the administration of negotiated contracts. While some of our competition may have one or two individuals tasked to ensure contract compliance, we maintain a team of highly trained professionals whose sole goal is ensure that we meet our commitments to our contract customers. Program Managers also work with our Marketing department to promote your contract and educate our sales force on the particularities of the contract. Our Program Management teams work to make sure that our sales teams are educated on the contract requirements.

Our Program Management team also compiles a variety of reports, ranging from updated pricing and product options to purchase history and analyses of the success of the contract.

Some of the features of what we will provide you are:

- o Understand and Comply with all applicable statutory and contractual provisions;
- o Maintain consistent, contract-compliant pricing;
- o Comply with any security requirements;
- o Follow proper protocols, including obtaining customer approval, prior to making any substitutions or deviations from the original contract requirements and specifications;
- o Engage directly, honestly and truthfully in our discussions with agency representatives and government employees

In addition to a flexible contract, contract participants will enjoy the advantages of a dynamic pricing structure. As CDW•G employs a vendor-neutral approach to IT solutions, we leverage that method to deliver better pricing to our customers. Because of our size and reputation in the IT marketplace, we have the ability to deliver volume discounts, exclusive pricing, and special promotions unavailable with other IT solution providers.

National Services Presence

We have over 30 offices around the United States. Meeting contract participants where they are is really important to us: We want to understand our customers' needs, their environment, the particularities that make contract participants the unique customers they are. Understanding what drives purchasing decisions helps us provide more tailored solutions. We have a national network of service providers, all trained in the latest approaches, methodologies, and solutions, consistently carrying the highest level of OEM certifications. This means that when contract participants need us to come into their environments and provide guidance, they can be sure that they're receiving guidance from seasoned experts with years of experience in solution deployment.

Our Services model offers customers an unusual combination: the close relationship and easy access of a local provider who understands your IT environment inside and out, and the scale, efficiency and resources of a multinational provider. We have 30-plus local branch offices throughout the United States and Canada. So, chances are, we're within driving distance of contract participants. In addition to our local branches, we have over 1,100 services professionals and a network of trusted service and solutions partners. In fact, because of our national scale, CDW•G is able to identify areas of emerging need for our customers and then ramp up our expertise and resourcing in those areas.

Logistics

One of the many benefits of our proposed solution is how we work with you to deliver your IT purchases. From order placement to delivery, how we bring you your purchases is almost as important to us as what you buy. Making the purchasing and delivery process easier and time-efficient, we work hard to guarantee that you receive the most cost-effective purchasing options available. Your account center will enable you to:

- o Connect with your dedicated account manager and team of specialists;
- o Create and retrieve quotes and collaborate with your account manager;
- o Promote IT standards;
- o Track orders and shipments;
- o Manage purchases and payments;
- o Set shipping and billing preferences and manage contact information

Factor in our two strategically-located distribution centers that hold \$220M of inventory, on average, you can be sure that we have what you need when you need it, and have the ability to get it to you quickly. We maintain both a 450,000-square-foot distribution center located at our headquarters in Vernon Hills, IL and a 513,000-square-foot distribution center located in North Las Vegas, NV. The combined square footage of our distribution centers is three times greater than most of our competition. These locations facilitate quick distribution of products to our growing customer base throughout the country

Breadth of Coverage

CDW•G has over 840 Account Manager and 65 Field Representatives forming account teams across five verticals: Higher Education, K12 Education, Healthcare, Federal Government, and State & Local Government. In addition, our account teams are organized geographically: North, South, East, and West which facilitates their ability to be uniquely aware of the local landscape, identifying key partnerships and common local practices for contracting. These account teams are supported by technology specialists and segment technologists who can go deep into particular solution sets with our customers. No other national provider can claim the size and depth of knowledge of our highly skilled account teams, it is a particular point of pride for CDW•G. Wherever our customers are located, CDW•G invests heavily in our sales teams' ability to meet our customers' needs.

Summary

The City of Mesa can be confident that by partnering with CDW•G for the National IPA contract, we will be able to meet your needs and deliver the best value for contract participants. Evidenced by our successful ten year relationship with the City of Tucson, Mesa can expect the same level of local attention from a national IT solution provider. We stand ready to bring you a contract that will be tailored to your requirements and considerate of what's important to you. At every stage of the lifecycle of your contract, your dedicated team of Account Managers, Program Managers, and Service providers is prepared to advise you and work with you to guarantee your total satisfaction; ensuring our commitment to you is consistently met. We are pleased to offer you the following proposal and look forward to being your trusted partner for years to come.

Tab 2

Program Description and Method of Approach

1. Provide a response to the national program.
 - a. Include a detailed response to Attachment D, Exhibit A, National IPA Response for National Cooperative contract. Responses should demonstrate a strong national presence, describe how offeror will educate its national sales force about the contract, describe how products and services will be distributed nationwide, include a plan for marketing the products and services nationwide, and describe how volume will be tracked and reported to National IPA.

CDW•G Response:

A. Method of Approach

Response to National IPA Cooperative Contract

1. Provide a response to the national program.
- A. Include a detailed response to Attachment B, Exhibit A, National IPA Response for National Cooperative contract. Responses should demonstrate a strong national presence, describe how offeror will educate its national sales force about the contract, describe how products and services will be distributed nationwide, include a plan for marketing the products and services nationwide, and describe how volume will be tracked and reported to National IPA.

3.1 SUPPLIER QUALIFICATIONS

Supplier must supply the following information in order for the Principal Procurement Agency to determine Supplier's qualifications to extend the resulting Master Agreement to Participating Public Agencies through National IPA.

3.2 Company

- A. Brief history and description of your company.

Founded in 1984, CDW is a leading provider of technology solutions to over 250,000 customers composed of small-, medium-, and large-sized public and private entities. CDW Government LLC (CDW•G) is a wholly owned subsidiary of CDW Corporation, incorporated in 1998 to address the specific needs of our government, education, and healthcare customers. Our unique company structure provides our customers products and services only a large national reseller can provide, combined with a local presence typical of a small business. We have a large manufacturer presence in our offices across the country and blanketed in the field with our field account executives. Account Teams are further segmented by agency type, education (K12/High Ed) or government, which allows us to provide each customer with one contact who is knowledgeable of every nuance of their organization.

CDW•G is one of the largest direct marketing resellers in the U.S., currently carrying more

than 100,000 name-brand technology products from over 1,100 leading IT manufacturers.

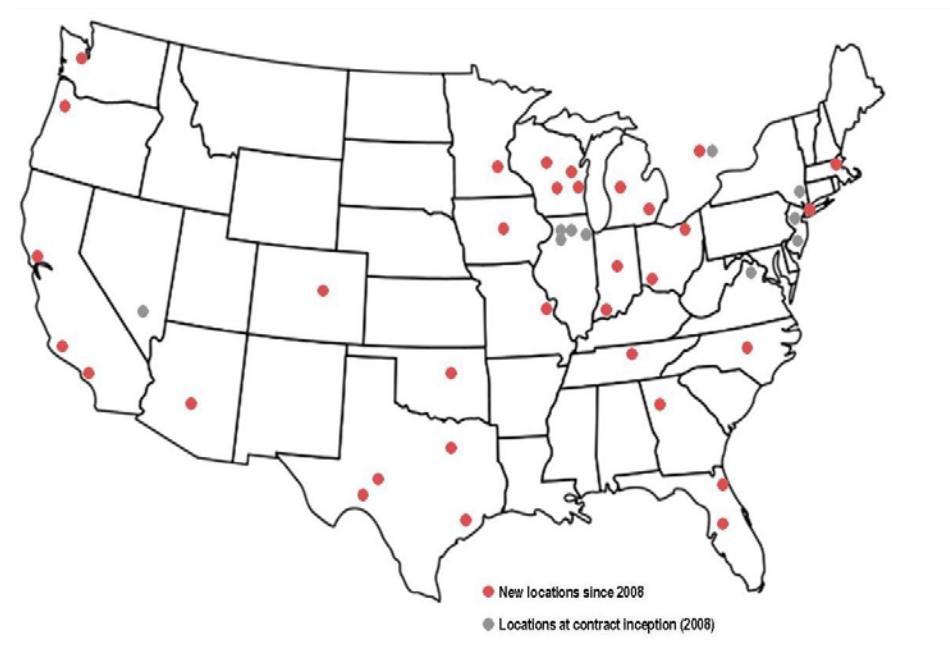
CDW•G delivers more than just product; we also deliver IT solutions. We offer a full range of technology services including: cloud computing, consulting, system configurations, implementation, and training. CDW•G designs and implements complete business solutions that address a full range of complex issues including, but not limited to: Business Continuity, Infrastructure Optimization, Networking, Security Management, and Unified Communications.

B. Total number and location of sales persons employed by your company.

CDW•G currently employs more than 1,456 coworkers, part of our larger organization of 8,800 employees nationwide and in Canada, with over 30 different locations. More than 840 of our CDW•G dedicated sales force are Account Managers, in addition to 65 Field Account Executives placed throughout communities across the nation.

C. Number and location of support centers (if applicable)

When CDW•G was awarded a similar contract with National IPA's involvement in 2008, we had offices in five states and Canada. We have drastically expanded our location portfolio across 20 additional states, and have added second/multiple offices in a number of our original five states and Canada. Currently, we have over 30 separate locations. Speaking specifically to the benefit of this contract, seven of the states with new locations are also in the ten states with the highest historical spend on the contract.



D. Annual sales for the three previous fiscal years.

Below you can see evidence of CDW Corporation's sales growth, CDW•G's growth, and our growth on the contract as well. CDW•G consistently drives compounding growth in both areas, and anticipates these upward trends to continue. The growth rates of National IPA

exceed the standard rate for CDW•G, demonstrating our results to both grow organically and promote the contract within our existing client base.

Explosive Sales Growth						
Year	Annual Revenues			YOY Growth		
	National IPA (\$ Millions)	CDW•G (\$ Billions)	CDW (\$ Billions)	National IPA	CDW•G	CDW
2013	\$113	\$4.2	\$10.8			
2014	\$160.1	\$4.9	\$12.1	41.5%	16.7%	25.0%
2015	\$253.7	\$5.1	\$13.0	58.5%	4.1%	7.4%
2016	\$390	\$5.6	\$14.0	53.7%	9.8%	7.7%

E. Submit your FEIN and Dun & Bradstreet report.

CDW•G FEIN: 36-4230110

Dun & Bradstreet numbers:

CDW Corporation	107627952
CDW Government LLC	026157235

CDW•G cannot supply a Dun & Bradstreet report, as it violates our contract with Dun and Bradstreet. The City of Mesa can obtain a report for CDW•G from Dun & Bradstreet.

3.3 Distribution, Logistics

A. Describe how your company proposes to distribute the products/service nationwide.

We offer more than 100,000 brand-name products from over 1,100 leading manufacturers. We carry over \$200 million in inventory, and ship most in-stock products the same day they are ordered. The result is that contract purchasers receive a shipment from CDW•G in just **3-5 days**, far surpassing our competitor's capabilities

CDW•G keeps a large breadth of products and fresh inventory on hand, in order to provide contract members with new technology as it becomes available. We constantly monitor trends within the IT industry to ensure that we offer our customers the latest technology and the most optimal solutions. Our inventory management system enables our purchasing department to excel at maintaining a one- to four-week supply of products in our distribution centers. Our inventory turns over 24-26 times per year.

The distribution centers' automated system scans bar-code labels on each product, pick list, and shipping label, resulting in increased delivery speed and accuracy. Some of smaller items require coworker assembly; "Ready Ship" products (items that ship in their original carton) move through the system even faster. Once the order shipment is ready for loading, a final scan determines the correct truck and sends it down the designated conveyor into the truck. The automated systems even help to load the trucks in ways that optimize shipment-processing speeds.

CDW•G's strategic relationships with industry leading original equipment manufacturer (OEM) technology partners, such as HP, Cisco, Lenovo, and Apple, means that we not only have access to steep product discounts, but also greater access to the products and a more efficient procurement processes.

We receive notification regarding product changes, including advance notification of product shortages, and products nearing end of life. When there is a product shortage and other vendors do not have access to these products, we can often procure them from another source. When



CDW•G receives notification of an upcoming stock outage, we utilize our distribution centers' large capacity for volume purchases, keeping stock on hand for our customer's present and future needs.

- B. Identify all other companies that will be involved in processing, handling or shipping the products/service to the end user.

CDW•G has positioned ourselves very closely with the major carriers, in order to provide a wide range of delivery options to meet our customers' varying needs. We ship the majority of our products via UPS and FedEx. Both companies have employees on site at our warehouses, individuals with a long history of supporting CDW•G. We can also leverage the carrier's intermodal transport options. Additionally, we have contracts with truckload (TL) and less than truckload (LTL) carriers for large orders and heavy products. If a carrier is not meeting our on-time delivery requirements, we remove the carrier from our preferred shipper list.

- C. Provide the number, size and location of your company's distribution facilities, warehouses and retail network as applicable.

CDW•G's two strategically located distribution centers have a combined size of almost one million square feet. Our Central Distribution Center in Vernon Hills, IL, ships primarily to customers in the eastern half of the U.S. Our Western Distribution Center, in Northern Las Vegas, NV, ships primarily to customers in the western half of the U.S. Each distribution center serves as backup for the other. A state-of-the-art Warehouse Management System (WMS) controls both of these centers, ensuring speed and accuracy throughout the order fulfillment and distribution processes.

In addition to working with OEM partners to supplement our direct purchasing model, CDW•G has developed strong affiliations with principal distributors: Synnex, Tech Data, and Ingram Micro. Our OEM partners send us daily electronic data interchange (EDI) downloads, giving us visibility to inventory at their locations. Our top three distribution partners provide real time inventory information. Using this multi-layered procurement structure, we secure out-of-stock product(s) within as little as 24-48 hours, depending on customer requirements.

- D. State any return and restocking policy and fees, if applicable, associated with returns. CDW•G offers a 30-day return policy on most products sold. Of the returns we accept, a minimum 15% restocking fee applies for non-defective product returns. For our complete return policy, please see Tab 7, Appendix of this response. Customers may also obtain

additional information by contacting their Account Manager or CDW customer relations at 866.SVC.4CDW, returns@cdw.com.

3.4 Marketing and Sales

- A. Provide a detailed ninety-day plan beginning from award date of the Master Agreement describing the strategy to immediately implement the Master Agreement as your company's primary go to market strategy for Public Agencies to your teams nationwide, to include, but not limited to:
 - I. Executive leadership endorsement and sponsorship of the award as the public sector go-to- market strategy within first 10 days

Per Arizona Revised Statutes § 44-405, the following information is confidential and proprietary and it might contain trade secrets therefore not subject to disclosure in case there is a request.

Part of CDW•G's commitment to our customer base is constantly seeking out opportunities to strengthen our national partner relationships. We view executive alignment as a key part of a successful contract strategy. We bring senior leaders from across our public-sector management team together with National IPA 2-3 times per year to review contract initiatives and customer feedback.

Our ongoing efforts with National IPA in seven specific target accounts highlights this unique and longstanding collaboration. We meet monthly to review the current state of business and execution of each account's growth strategy. In 2017, we have already seen success in Los Angeles World Airports and the City of Kansas City. The combined teams will continue to drive contract adoption amongst non-participating agencies.

CDW•G's leadership team is securely behind the growth and strategy of this program – both to the benefit of the City of Mesa and also across the nation. Key members of the leadership team include:

David Hutchins, CDW•G's VP of Education Sales, is an executive sponsor of the City's contract. He continues to focus sales teams on the success of the contract, and continually collaborates with manufacturer partners, allowing CDW•G to provide the latest technology solutions to help further the mission of 'the connected classroom' across the nation.



Robert F. Kirby, CDW•G's VP of Federal and State & Local Sales, is an executive sponsor for this contract. He will ensure that sales teams work towards the success of the contract and consistently works with manufacturer partners to allow CDW•G to bring contract participants further benefits through targeted solution campaigns, like our public safety initiative.

Tara Barbieri, CDW•G's Director of Capture, is also an executive sponsor for the contract. She has endorsed and sponsored this contract since the inception in 2008, and shall continue this role upon award. In her position, she is dedicated exclusively to our company's contractual sales, and leads



with the knowledge and experience in cooperative purchasing contracts. Internally, she has promoted this contract to CDW's President Tom Richards and, externally, to HPE's Meg Whitman. This is to say that for over ten years, she has worked tirelessly to champion this contract and has been integral to growing this contract into what it is today.

To facilitate our growth strategy, CDW•G holds many public agreements, some with mandatory use requirements within individual states. We cannot agree to market the City's contract as our *primary public sector go-to-market strategy*; however, we have included an appropriate marketing plan and pledge to continue focusing on the contract's success and awareness. We believe this pledge should not be viewed lightly, as with our support, this contract's volume has surpassed the \$350M mark as of last year in yearly sales. We understand through competitive research that our competitors rarely take issue with similar requests for commitments; yet we can easily find evidence that they too hold plenty of public contracts.

Dell	Zones	WWT	Connection	Carahsoft
National Cooperative Purchasing Alliance (NCPA)	National Joint Powers Alliance (NJPA)	California CMAS	Texas DIR	US Communities
NASPO Value Point (NVP)	Texas DIR	State of MO PC Prime Vendor Contract	Massachusetts ITC47	National Cooperative Purchasing Alliance (NCPA)
Midwestern Higher Ed Compact (MHEC)	California CMAS	Ohio Hardware, Software & Services	National Cooperative Purchasing Alliance	PEPPM
Texas Dept of Information Resources	PEPPM	Texas DIR	TIPS/TAPS	MICTA
Massachusetts ITC47	National Cooperative Purchasing Alliance	Massachusetts ITC47	Public Sourcing Solutions (PSS)	Massachusetts Higher Ed Consortium

CDW•G takes our partner commitments very seriously and Mesa is our partner in delivering on the accompanying National IPA Agreement. In the first ten days post-award, our CDW•G Program Management team will provide a company-wide contract award announcement, as well as develop a contract training program for all SLED Account Managers to attend. CDW•G has a successful contract launch history where we focus on five areas of the contract which are: Intake, Set-Up & Compliance, Education, Measure and Growth. By focusing on these areas specifically, we are able to launch contracts to the CDW•G teams with the most powerful and applicable details to make the new National IPA agreement more successful than the one currently in place

- II. Training and education of your national sales force with participation from the executive leadership of your company, along with the National IPA team within

first 90 days

Our Public Sector Account Managers are actively marketing the current contract to their customers and are very familiar with the structure of the contract. This is an enormous benefit to the City, National IPA, and the immediate momentum of the new contract. A 'refresh' training to enhance understanding of the new National Program, its updates and nuances with City of Mesa as lead agency will be conducted within the first 30 days post award.

Familiarizing a completely new management team and educating a new group of Account Managers to a new contract is unnecessary with CDW•G. Other vendors, even after training, are likely to experience a significant period of growing pains, acclimating their sales staff to the offering. This ramp-up time will certainly have an impact on contract sales. This is often the case with new contracts, as National IPA and the City are aware. The current contract saw success atypical of most, quickly achieving \$4 million dollars in purchases within the first four months from inception. We believe this success was due in large part to CDW•G's experience in managing contracts and National IPA's commitment to sound marketing strategies. The contract is now supporting almost **fifty-eight times** its 2009 purchases (the first full year of the contract). We believe that CDW•G is uniquely qualified to deliver growth over \$400 million in 2018.

All aspects of transitioning to the new contract will be seamless. The City and National IPA do not have to worry about member confusion or orders lost during training and setup time. Business will continue to flourish and training time will be used as a refresher, providing contract updates and focusing on strategies to increase business.

- B. Provide a detailed ninety-day plan beginning from award date of the Master Agreement describing the strategy to market the Master Agreement to current Participating Public Agencies, existing Public Agency customers of Supplier, as well as to prospective Public Agencies nationwide immediately upon award, to include, but not limited to:
 - I. Creation and distribution of a co-branded press release to trade publications within first 10 days

CDW•G's Marketing contact will work with National IPA to create and distribute this announcement at the transition of the new award.

- II. Announcement, contract details and contact information published on the company website within first 30 days

CDW•G can reload the new contract pricing structure within a matter of minutes and will have our website operation on the 1st day of the new contract. CDW•G will be able to seamlessly transition all agencies buying off of our current National Cooperative contract to the new contract, upon contract launch.

- III. Design, publication and distribution of co-branded marketing materials within first 90 days

CDW•G already has much of this material. We are poised to perform updates to the material and shall accomplish this well within the 90-day time frame. We propose a marketing strategy meeting with National IPA to discuss a refreshed approach and specific goals/targets for the new contract. CDW•G is eager to share our current marketing processes for the contract, including our attendance at the National IPA Regional Summit, aimed at increasing contract awareness; our Sales Wiki site, giving account teams easy access to marketing strategy and materials; and our monthly email campaigns to all National IPA members.

We also look forward to talking about our ideas to gain a better contract understanding, with an increased focus in the K12 sector and our top OEM partners.

Announcements and events

Catch up on current CDW•G happenings.

IT needs on one agreement - CDW•G and National IPA

CDW•G is pleased to be awarded by the City of Tucson, AZ, through public competitive solicitation, a cooperative purchasing contract for Information Technology Solutions (contract # 083052). This agreement features a comprehensive range of technology solutions and is available to public agencies nationwide via National Intergovernmental Purchasing Alliance (National IPA).

To simplify the purchasing process, CDW•G offers National IPA participating agencies special pricing on technology solutions across a breadth of vendors. Through National IPA, find discounts in software, software licensing and maintenance, hardware and peripherals, and more. From CDW•G, receive unmatched levels of service, advice and support from expert teams.

We encourage you to visit the Information Technology Solutions Agreement online at CDWG.com/nationalipasolutions for a complete list of products and services available. Search by keyword or browse by product category, and use the resource links to access National IPA websites.

Contract #083052



- IV. Commitment to attendance and participation with National IPA at national (i.e. NIGP Annual Forum, NPI Conference, etc.), regional (i.e. Regional NIGP Chapter Meetings, etc.) and supplier- specific trade shows, conferences and meetings throughout the term of the Master Agreement

In 2018, CDW•G's schedule includes over 100 regional and nearly as many national events. In past years, we have attended many events in which we promoted the contract, including NIGP, NASPO, CAPPO, and FAPPO. We will continue this practice with the new agreement, as well. For 2018, we are already committed to attend NASPO, and the National IPA Partner Summit.

We are willing to continue to share our best practices with other non- competing National IPA vendors. Sales Manager Pat O'Brien has agreed to share some of these practices with other National IPA vendors at the Partner Summit, helping increase the success of all National IPA's contracts.

- V. Commitment to attend, exhibit and participate at the NIGP Annual Forum in an area reserved by National IPA for partner suppliers. Booth space will be purchased and staffed by your company. In addition, you commit to provide reasonable assistance to the overall promotion and marketing efforts for the NIGP Annual Forum, as directed by National IPA.

CDW•G has enjoyed participating in the NIGP Annual Forum and will continue to do so. We believe in the theme "Building Together" and look forward to sharing our best practices with other National IPA vendors.

- VI. Design and publication of national and regional advertising in trade publications throughout the term of the Master Agreement

CDW•G advertises the contract in our own highly viewed publications and our contract specific email campaign. We will continue to promote the contract via avenues such as our EdTech and StateTech publication sites, while continuing to penetrate the market with a live-touch approach.

- VII. Ongoing marketing and promotion of the Master Agreement throughout its term (case studies, collateral pieces, presentations, etc.)

CDW•G continues to market and promote the contract, through various avenues such as announcements in our publications, email campaigns, as well as on the contract's CDW•G premium page. We look forward to working with National IPA to develop our marketing strategies even further.

- VIII. Dedicated National IPA internet web-based homepage with:

- National IPA standard logo;
- Copy of original Request for Proposal;
- Copy of contract and amendments between Principal Procurement Agency and Supplier;
- Summary of Products and pricing;
- Marketing Materials
- Electronic link to National IPA's online registration page;
- A dedicated toll free number and email address for National IPA

CDW•G exceeds this requirement, as our current National IPA Premium Page, www.cdwg.com/nationalipasolutions presently includes these elements. The page includes the National IPA logo and a description of the contract, with multiple direct links to National IPA's Home Page and Registration Page. We provide members with categories that mirror the contract, easily allowing them to locate the product or service they are looking for. We include "featured products" highlighting solutions that we select for their excellent value or popularity among purchasers.

We have a toll-free number and address for National IPA members, and feature a dedicated Account Team included on the website, which highlights when they are available for customers. In conjunction with National IPA, we will continue to develop this site, increasing functionalities and promotion of the contract.

National IPA Information Technology Solutions Agreement



Publicly solicited and awarded by City of Tucson, Arizona and offered nationally through National IPA. Welcome to the National Intergovernmental Purchasing Alliance Information Technology Solutions Agreement Website. This agreement (Contract #130733) is a result of a competitively bid solicitation by the City of Tucson and awarded to CDW-G.

This agreement offers discounts in software, software licensing & maintenance, hardware and peripherals. Agencies may become participants of National IPA via their website at www.nationalipa.org National IPA is a cooperative purchasing program offered to public agencies and agencies for public benefit. It is an optional program with no minimum purchase requirements and no fees.

FEATURED PRODUCTS



Samsung Chromebook
XE303C12 - 11.6"

Exynos 5 1.7 GHz - Chrome OS - 2 GB RAM - 16 GB SSD - 11.6" 1366 x 768 (HD) - silver

Add to Cart



Lenovo ThinkCentre M72e
4004 - Core i3 3220T 2.8 GHz - 4 GB - 500 GB

SAVE NOW: Save \$15 by buying Office and Windows 8 Device - Tiny desktop - 1x Core i3 3220T / 2.8 GHz - RAM 4 GB - HDD 500

Add to Cart



HP SB EliteDisplay E2211 21.5" LED-backlit LCD - Black

LED monitor - 21.5" (21.5" viewable) - 1920 x 1080 - AH-IPS - 250 cd/m2 - 1000:1 - 8 ms - DVI-D, VGA, DisplayPort - black -

Add to Cart



HP ProBook 4540s - 15.6" - Core i5 3230M - Windows 7 Pro 64-bit / 8 Pro dow

Core i5 3230M / 2.6 GHz - Windows 7 Pro 64-bit / 8 Pro downgrade - pre-installed: Windows 7 - 4 GB RAM - 500 GB

Add to Cart



Cisco Aironet 3702i Controller-based - wireless access point

Wireless access point - 802.11a/b/g/n/ac - Dual Band

Add to Cart



HP Officejet 100 Mobile Printer Pro 64-bit / 8 Pro dow

Printer - color - ink-jet - Legal - 600 dpi - up to 22 ppm (mono) / up to 18 ppm (color) - capacity: 50 sheets - USB, Bluetooth, USB

Add to Cart

CONTRACTS

Search within your contracts:

Search

Cables (26685)
Computer Accessories (14215)
Computers (31453)
Data Storage Products (20397)
Electronics (5702)
Memory (3740)
Monitors & Projectors (8622)
Networking Products (27928)

Office Equipment & Supplies (9148)
Phones & Video Conferencing (6559)
Power, Cooling & Racks (13881)
Printers, Scanners & Print Supplies (19572)
Servers & Server Management (6961)
Services (82416)
Software (216798)

Links Of Interest

- [National IPA Home Page](#)
- [Participate in National IPA](#)
- [Contract Documents](#)
- [Marketing Material](#)

Contacts



Sydney Donahue
Account Manager
Phone: 877-705-4975



Pat O'Brien
Sales Manager
Phone: 877-898-2997



Jumana Dihi
Program Manager
Phone: 312-547-9437

C. Describe how your company will transition any existing Public Agency customers' accounts to the Master Agreement available nationally through National IPA. Include a list of current

cooperative contracts (regional and national) your company holds and describe how the Master Agreement will be positioned among the other cooperative agreements.

As the City and National IPA are both well aware, CDW•G currently holds a significant number of cooperative purchasing contracts including National Intergovernmental Purchasing Agency (National IPA), Association of Educational Purchasing Agencies (AEPA), and National Joint Powers Alliance (NJPA). CDW•G is solutions-focused, vendor agnostic and provides consultation to assist our customers to select the contract best suited for their specific procurement needs. For all of our national contracts, we have maintained the transparency of our contract portfolio to our customer and negotiated the removal of language such as “most favored customer” and requirements such as this.

CDW•G continues to prove without a doubt that we can keep our commitment to making this contract prosperous amongst our portfolio of offerings. We have transitioned a number of customers and their solicitation opportunities to this contract, in the form of participating agreements. Some of these customers include the City of New York, City of Phoenix, City of Atlanta, University of Colorado, and DeKalb County. Moving forward, we will continue to loop new members in to the contract and sustain the growth.

- D. Acknowledge that your company agrees to provide its company/corporate logo(s) to National IPA and agrees to provide permission for reproduction of such logo in marketing communications and promotions.

National IPA has several CDW•G logos at their disposal under our general guidelines for intended use, they are included here for ease of evaluation.

Logos & Guidelines

CDW welcomes customers, media and other entities to use our corporate logo, as needed. The core component of CDW's brand identity is its corporate logo; therefore, we ask that you carefully consider the following guidelines when using it.

When using the CDW logo, you agree to the following:

1. You may use the logo(s) only in the exact form provided by CDW and only to accurately and actively link from a website that is under your control to the home page of CDW.com (or another address provided by CDW) and for no other purpose.
 2. You may not incorporate the logo(s) into any other logo or design.
 3. You may not to use the logo(s) in a way that suggests that you or your company or products are affiliated with CDW or its products or services in any way.
 4. You may not display the logo(s) on any website that disparages CDW or its products or services, infringes any CDW intellectual property or other rights, or violates any law or regulation.
 5. No other logo or design element should appear within 0.5 inches of the CDW logo.
 6. You may not frame or alter the CDW website in any way.
 7. At CDW's direction, you will immediately remove the logo(s).
 8. Your limited right to use the logo(s) does not constitute a grant of any other right or license. All other rights are reserved by CDW.
 9. CDW disclaims all warranties, express and implied, regarding the logo(s), including warranties against infringement. You agree to indemnify CDW from and against any and all claims and liabilities arising out of your use of the logo(s).
- E. Supplier is responsible for proactive direct sales of Supplier's goods and services to Public Agencies nationwide and the timely follow up to leads established by National IPA. All sales materials are to use the National IPA logo. At a minimum, the Supplier's sales initiatives should communicate:
- I. Master Agreement was competitively solicited by a Principal Procurement Agency

- II. Best government pricing
- III. No cost to participate
- IV. Non-exclusive contract

We are happy to update our current National IPA flyer with the new contract information. We would like to further discuss the inclusion of II and IV, and will revise our marketing pieces to include mutually agreeable message that best represents the value of the contract.



NATIONAL IPA™

EXPERIENCED * FOCUSED * TRUSTED

CDW•G is YOUR Solution for Modern-Day Classrooms!

CDW•G Is Committed To Texas K-12 Education

Today's modern-day classrooms are using technologies such as mobile devices, interactive technology and engaging learning spaces to make teaching and learning more effective. CDW•G understands K-12 education and will help you discover the solutions that can help improve learning outcomes, while keeping your classrooms connected and networks secure.

CDW•G offers multiple solution sets to meet your classrooms every need. Below are some of the key suppliers that CDW•G partners with.



Platform Solution Set




Devices Solution Set





Networking Solution Set





Audio Visual Solution Set





National IPA and CDW•G are here to help.

CDW•G has a team committed to Texas K-12 education. This team is experienced in working with Texas school districts of all sizes and can help meet your technology needs while offering a competitively awarded agreement compliant with state procurement regulations.

CDW•G contracts available through National IPA have been competitively solicited and publicly awarded by Region 4 Education Service Center and City of Tucson, AZ. Click [HERE](#) for more information about both of these amazing contracts.

For additional information about National IPA in Texas click [HERE](#)

For more information on CDW•G click [HERE](#)

2. Provide a description of the product lines that can be provided by your firm.

CDW•G Response: CDW•G is offering our entire catalogue, including our complete portfolio of product offerings which includes over 100,000+ products from more than 1,100 vendors. We also offer a full suite of professional services to users of this contract. Given the landscape of the IT industry and its rapid changes, we have defined these categories broadly to easily facilitate adding new technologies and services to the resulting Agreement over the contract period. We intend to be your go-to supplier for all of your IT solution needs; so, whatever your need may be, you can be sure we have the solution that works for you. We are the largest, direct reseller in the US for many of our OEM partners which include: Adobe, Cisco, HP, Lenovo, and Panasonic. Based on the strength of our success and our product portfolio, we are able to offer our customers the newest technologies, more robust discounts, and OEM support unavailable with our competition. Additionally, as technology is constantly evolving, we are always on the lookout for new vendors and new technologies to add to our offerings. Our product line cards, organized by product category and manufacturer, follows this page.

3. Provide a description of the services that can be provided by your firm.

CDW•G Response: Our services portfolio that we bring to our customers encompasses a wide array of both standard and specialized services. With over 1,600 highly trained and certified engineers in 30 locations nationwide, we offer the City of Mesa and National IPA contract participants the most optimal services in the IT industry. Below is a sampling of the services we provide to our customers:

Cloud Computing: We know how important cloud computing is to our customer base, and are determined to lead the industry in mastering this complex, highly customizable service. Our internal cloud campaign is educating our Account Managers on how to assist our customers in determining the best-valued cloud option for their needs, while our technicians continue training to master the solution, and working with our manufacturer partners to expand our portfolio. Our Cloud offerings do require an additional Cloud Services form, but your Account Manager will walk you through the process.



CDW•G offers a cafeteria-style set of cloud solutions. Our portfolio includes public, private, community, and hybrid deployment options. Our broad cloud offering currently includes over thirty different manufacturers, and we continue investigating other manufacturer solutions to add to this portfolio. Our cloud computing solutions; Software as a Service (SaaS), Infrastructure as a Service (IaaS), and Platform as a Service (PaaS), cater to the specific needs of the span of our entire customer makeup

Consulting and Analysis: Most of our projects begin with either an assessment or planning and design session. CDW•G technical specialists and field solution architects are experts in many areas including unified communications, networking, wireless, network and physical security and server/storage solutions. CDW•G will save contract members staff time and effort because our experts have already initiated the due diligence process. We share our knowledge of the latest technologies as well as our expertise regarding the pros and cons of each potential solution. We also offer a variety of more complex consulting/analysis solutions for those customers who need a more in-depth evaluation of their systems.



Technical Support: CDW•G's Staff Augmentation services offering includes assisting customers with onsite help desk and technical support services. This service provides skilled, temporary staffing to assist with IT challenges

Trade-Ins: CDW•G coordinates with our manufacturer partners to provide trade-in services to our customers.

Repair: In addition to offering onsite repair, we have our own repair center. CDW's Repair Center offers fast turnaround time and low cost out-of-warranty repair prices, as well as great in-warranty service. Our factory certified repair technicians complete typical repairs on an average of 7-10 business days. We are an authorized Service Center for the following Manufacturers:



- | | | |
|-------------------------------|------------------------------|-----------------------------------|
| ☐ Acer | ☐ HP | ☐ Service Net |
| ☐ Apple | ☐ IBM | ☐ Sony |
| ☐ Fujitsu | ☐ Lenovo | ☐ Toshiba |

Please note: due to manufacturer policies, limitations, and agreements, CDW may not be able to service all computer models or lines made by these manufacturers.

Design: Most of our projects begin with either an assessment or planning and design session. Our architects review your needs and perform an evaluation of your existing environment to develop a comprehensive solution to meet your particular project objectives.

Configuration/System Configurations: While onsite configuration services are available, CDW•G often recommends our in-house configuration services. CDW•G builds preconfigured technology solutions in our two ISO 2008-certified configuration centers, so they arrive at their correct location(s) ready to plug and play. We have a 25,000-square-foot configuration center in our North Las Vegas distribution center and a 24,000-square-foot configuration center in our Vernon Hills, IL distribution center, including an 8,000-square-foot enclosed area for enterprise configurations. To complement this space, CDW•G has more than 150 configuration technicians, providing a spectrum of customized configuration services.



CDW•G's configuration services include:

- Hardware and software installation and configuration
- Customized imaging
- Asset tagging, custom labeling, and laser etching
- Router/switch configuration
- Server rack configuration

Implementation: Our national footprint is expansive, with over 600 engineers on staff in more than 26 service offices, complimented by a national traveling team. Additionally, we have capabilities to ship 3,000+ custom-configured systems daily; we configure over 750,000 custom solutions in our two state-of-the art distribution centers annually. Our large number of engineers, paired with our configuration capabilities, allows CDW•G to handle any rollout project that contract members may have.

Training: CDW•G's project methodology ensures technicians and project managers work with the mindset of being an extension of the customer's IT staff. Throughout the project our team not only focus on designing bullet-proof solutions, but continually engaging the IT staff; sharing knowledge, and ensuring the staff knows how to navigate the solution in which the customer vested their resources. Should a customer require training outside of this transfer of knowledge, we have a blended solution of CDW•G offerings, manufacturer standard trainings, and technology training companies.

Maintenance: CDW•G recognizes that maintenance/support contracts are of great importance to many customers because uptime is vital to their success. Our strong partnerships with the industry's top technology manufacturers, paired with our own maintenance solutions, offers a variety of viable options to our customers. Our maintenance options include the following:

- Warranty extensions and upgrades
- Post-warranty support
- Accidental damage protection
- Maintenance contract agreements (coterminous, break/fix, and retainer)
- Post-sale technical support
- Product and certification
- Help desk services

Hardware and Software Installation: Our installation services encompass the following solutions. Installation services can include installing and deploying new systems; moving existing equipment; assessing systems and testing installed equipment; and advanced IT support. We also offer staging options, should a customer need to complete their installation in numerous rollouts.

- Client Computing Installation
- Data Center Installation
- Network Installation
- Security Installation
- Microsoft Configuration and Installation
- Microsoft Accelerators
- Visual Solutions Installation

System Testing: All of CDW•G's service projects incorporate testing every aspect of the final solution, ensuring all acceptance criteria is met.

Upgrades: Many products offer a variety of system upgrades. Our dedicated Account Managers work with their customers to explain the benefits of each upgrade, and help determine if these upgrades would be a wise purchase for the customer's needs. The Account Manager then collaborates with CDW•G dedicated manufacturer partner specialists to incorporate the upgrades into the final product build. Additionally, CDW•G performs a number of upgrades, such as asset tagging and laser etching, in house in our configuration center.

Imaging: In addition to our configuration services, CDW•G performs imaging services in house in our configuration centers as well. Our A+ certified imaging technicians routinely image the following products:

- Laptops
- Desktops
- Workstations
- Flash Drives
- Servers
- Hard drives
- Apple products, including iPods and iPads

Customers can provide their own image or CDW•G can create one for them. As with all services completed in our configuration centers, each piece of equipment goes through a comprehensive quality assurance check prior to shipping to ensure the unit is function properly. CDW•G also stores images on our secure server, completely isolated from other networks, and only accessible to a few authorized individuals. Many times customers choose to have us store their images as it allows CDW•G to load custom configured images quickly on their machines.

- 4. Provide a detailed description of any programs available for Participating Agencies seeking to set and meet goals for historically underutilized businesses (e.g. minority, woman, veteran, disabled, etc.). Discuss how transaction is between offeror and tier one suppliers and Participating Agencies and tier one suppliers will be tracked and accounted for and any quality assurance measures that are in place to assure a high-performance standard for tier one suppliers.**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

5. Describe how your firm proposes to distribute the products/services nationwide.

CDW•G Response: We have access to more than 100,000 top brand-name products from more than 1,000 manufacturers. We carry over \$220 million in inventory, and ship most in-stock products the same day they are ordered. Because of our distribution centers are strategically located in Vernon Hills, IL and Las Vegas, NV; we have the capability to deliver a wide array of shipping options that best fit your needs.

Because of our position as one of the largest direct resellers in the U.S., we work closely with all of the major shipping companies to ensure you receive your orders on time. We work with UPS, FedEx, CEVA, UPS Freights, Dynamex, and Veterans Messenger service to get you what you need, when you need it. We offer overnight, same day, 2 day, 3 day, and ground shipping options to best meet your needs. On average, we ship up to



54,000 boxes per day and contract purchasers receive a shipment from CDW•G in just **3-5 days**, far surpassing our competitor's capabilities.

Our two distribution centers have a combined square footage of almost a million square feet. Every stage of our distribution process is automated, with our custom-designed sorting systems, built to optimize the shipping process. Packed boxes are sorted and weighed onto the conveyor system. Combined, our distribution centers have almost twelve miles of conveyor belts that feed the sorting system. The barcode scanner reads the shipping label and the packed box's correct loading dock is determined. Once the order shipment is ready for loading, a final scan determines the correct truck (for instance, FedEx overnight) and sends it down the designated conveyor into the truck. The automated systems even help to load the trucks in ways that optimize shipment-processing speeds. When your package reaches the correct shipping portal, the sorting system drops your package down a chute that brings your order to the door dock to be loaded onto the correct carrier's truck and then your package is on its way for delivery.

The benefits of our automated distribution systems are that the City of Mesa will receive the right products, configured to your specifications and ready to use out of the box, and delivered on time

6. Identify all subcontractors that will be involved in processing agency orders under this contract and describe their distribution/delivery processes.

CDW•G Response: CDW•G believes another important step in successful order fulfillment is utilizing shipping partners that are as focused on customer service excellence as we are. CDW•G processes all purchase orders. If our customers have customized agreement that

include a Tier 1 diversity requirement, we work with diverse supplier partners local to customers, to deliver your products and your orders on time.

Distribution Partners. Our Distribution Partner Network includes over 130 different suppliers, meaning we can provide any product National IPA members would need. Like our OEM partners, we're the largest partner for many of our Distributors. And like our manufacturer partner relationships, this results in direct benefits for CDW•G and our customers. Most send us EDI downloads or real time information on their available inventory, resulting in access to products usually in as little as a day. As another example, we are a top Ingram Micro partner and hold Elite Partner status. This partnership provides a customized and exclusive support resource to our Account Teams and customers, among other benefits. The CDW dedicated priority phone queue has an average wait time of less than two minutes.



We ship the majority of our products via UPS and FedEx, due to their extensive service capabilities, excellent record for on-time delivery and competitive pricing. In fact, both companies have employees on site at our warehouses, individuals with a long history of supporting CDW•G. We can also leverage the carrier's intermodal transport options. Additionally, we have contracts with truck load (TL) and less than truck load (LTL) carriers for large orders and heavy products. If a carrier is not meeting our on-time delivery requirements, we remove the carrier from our preferred shipper list.

Shipping Partners. We have a number of shipping partners to provide our customers their products, fast. In fact, both companies have employees on site at our warehouses. These individuals have a long history of supporting our logistics operation, ensuring efficient processing and movement of customer orders. This helps us keep our carrier goal of 99.04%, beating the industry standard of 98%. Some additional benefits of our UPS partnership includes a customized Loss Prevention Program to ensure integrity of customer packages; a collaborative tracking program with our customer relations department; and IT automation between

All contract management functions will continue to be handled by Mark Ellis and his Program Management team. When any of our partners are involved, CDW•G manages the relationship and liability involved. We do ask customers to mutually agree to and sign Statements of Work for all service engagements through CDW•G. This is to ensure we keep Members apprised of the responsibilities, timelines, and progress of the project.

In instances where customers would like to integrate their e-Pro applications with our own, CDW•G will provide the integration assistance; however, the relationship the member has

with their e-Pro application vendor is their own, any applicable vendor fees resulting from the integration will be the responsibility of the member

- 7. Provide the number, size, and location of your firm's distribution facilities, warehouses, and retail network as applicable. Provide information on the productivity of your facilities and systems as follows:**
- a. How many orders are processed daily on an average**
 - b. How many devices does your facility configure daily on an average**
 - c. What is the highest number of orders processed in a single day**
 - d. What is the highest number of devices configured in a single day from the facilities described**

CDW•G Response A: Our two distribution centers process an average of 54,000 units per day.

CDW•G Response B: Our configuration staff, which includes 200+ Technicians, Engineers, Management, and Support Staff, complete an average of 7,000 custom configurations per day.

CDW•G Response C: At peak times, our two distribution centers process a combined average of 135,000 units per day.

CDW•G Response D: During seasonal spikes, our configuration staff configures almost 12,000 devices per day.

CDW•G's two strategically located distribution centers have a combined size of almost one million square feet. Our Central Distribution Center in Vernon Hills, IL, ships primarily to customers in the eastern half of the U.S. Our Western Distribution Center, in Northern Las Vegas, NV, ships primarily to customers in the western half of the U.S. However, each distribution center serves as backup for the other. They receive inventory valued at about \$21.0 million per day, or between 78 to 80 truckloads a day, processing a combined average of 135,000 units daily. A state-of-the-art Warehouse Management System (WMS) controls both of these centers, ensuring speed and accuracy throughout the order fulfillment and distribution processes.



CDW•G's Configuration Centers, also located in Vernon Hills and Las Vegas, maintain a combined square footage of over 100,000 feet.

In addition to working with OEM partners to supplement our direct purchasing model, CDW•G has developed strong affiliations with principal distributors. Like our OEM partners, they send us daily electronic data interchange (EDI) downloads, giving us visibility to inventory at their locations. Further, our top three distribution partners provide real time inventory information. Using this multi-layered procurement structure, we secure out-of-stock product(s) within as little as 24-48 hours, depending on customer requirements.

8. State any return and restocking policy, and any fees, if applicable associated with returns.

CDW•G Response: CDW•G offers a 30-day return policy on most products sold. Of the returns we accept, a minimum 15% restocking fee applies for non-defective product returns. Please see Tab 7 "Appendix" for our full return policy.

9. Describe your invoicing process. Is electronic invoicing available? Is summary invoicing available? Are there other options on how an agency receives an invoice?

CDW•G Response: CDW•G mails invoices the day after the product(s) is shipped out of one of our distribution centers or, if you prefer an electronic invoice, you can request that invoices be sent via PDF instead. We send the PDF the same day that the system generates the invoice. When a product is drop-shipped from a vendor, CDW•G invoices the customer once we receive the invoice from the vendor. As an added convenience, you can also print copies of original invoices via your CDW•G Extranet. Our standard invoices include the information listed below.

- | | |
|-------------------------------------|---|
| • CDW•G remit to address | • CDW•G part number |
| • Invoice date | • Description of product |
| • Invoice number | • Quantity ordered/shipped |
| • PO number affiliated with invoice | • Unit price (based off of pricing structure agreed to in the contract) |
| • Payment due date | • Extended price |
| • Order date | • Ship to address |
| • Shipping method | |

All of the information pertaining to the customer's specific requirements are included on the invoice as well. CDW•G supports many EDI formats and can customize invoices to reflect customers' required data fields. For more information regarding our EDI capabilities, we encourage the City to visit www.cdwg.com/edi.

10. Describe your delivery commitment:

a. What is your fill rate guarantee?

CDW•G Response: CDW•G's same-day fill rate is between 97-99% for credit-approved orders and in-stock product, depending on the complexity of the order and this is our best effort and therefore, not a guarantee. Should an item be out of stock, it typically takes 2-10 days, after receipt of order, to receive the product (subject to availability). We receive timely notification regarding product changes, including advance notification of product shortages, and products nearing end of life. When there is a product shortage and other vendors do not have access to these products, we can often procure them from another source. Many times when CDW•G receives notification of an upcoming stock outage, we utilize our distribution center's large capacity for volume purchases, keeping stock on hand for our customer's present and future needs.

b. What are your delivery days?

CDW•G Response: CDW•G's standard delivery is M-F excluding Thanksgiving, Christmas, and New Year's Day. Arrangements can be made based on need to fulfill orders on weekends and holidays for an additional fee. Customers should provide at least a 48-hour notice in order to allow time to properly set up any weekend or holiday deliveries.

c. Do you offer next day delivery?

CDW•G Response: Yes, CDW•G can ship same day, overnight, 2nd day, 3rd day, and ground. An expedited freight charge may be added for this service.

d. How do you facilitate emergency orders?

CDW•G Response: Whenever a contract member's order requires expediting, CDW•G treats it with priority. We direct all customers to contact their dedicated Account Manager if an emergency situation arises. They focus on placing the order and arranging for expedited delivery. Due to our very large inventory at our two distribution centers, we usually have the products in stock and available for immediate shipping. Our vast distribution capabilities means that we can draw from our OEM partners to ensure that, if we do not have your item in stock, we can still procure and deliver your order.

e. Are shipping charges exempt for ALL who use this contract?

CDW•G Response: Prices include lowest ground freight for shipments/packages less than 70 pounds within the 48 contiguous United States when referencing this Agreement. All orders are subject to Seller's standard shipping policies in effect at the time of order placement. In those instances that are larger than 70 pounds or call for express or overnight delivery, shipping costs will be pre-paid by Seller and added to the customer invoice. There is no additional fee assessed for smaller orders, unlike some of our competitors.

Since inception of this contract, we have become authorized for increasingly complex technologies, including large storage arrays where freight costs must be considered in the overall quote to the customer. In separating shipping costs for heavier items, it removes the need to consider the costs in the entire category discount, and allows us to provide customers deeper discounts for all products that fall within the category

f. Describe how problems (such as a customer ordering a wrong product or a customer receiving a defective product; etc.) are resolved.

CDW•G Response: CDW•G encourages customers to contact their Account Manager to assist with any such issues. If the Account Manager evaluates the issue and if they cannot personally assist the customer, they will engage and collaborate with our Customer Relations Department to assist. Customers may also reach out to Customer Relations directly.

If a wrong product is ordered, the customer's dedicated CDW•G Account Manager will work with the customer to determine the best solution to resolve the issue. For any products returned, whether defective or incorrect item, CDW•G requires customers to provide a Return Merchandise Authorization (RMA) number before shipping back any product. This process allows us to expedite the process and helps ensure the proper action or credit,

upon processing. Customers can get the RMA request form from their Account Manager, online via their CDW•G Extranet Account, or by contacting Customer Relations.

CDW•G tracks the reason for all returns, allowing us to make appropriate changes, as necessary. For example, a high volume of returns damaged in shipment would lead us to audit the carrier and review product packaging. CDW•G also monitors how quickly and efficiently the Customer Relations staff handles RMA requests, aiming to respond to requests within 24 hours or less.

11. Describe the types of customer service available to agencies that use this contract:

CDW•G Response: Your Account Manager stands ready to assist you in any type of query you may have and is available, during business hours and beyond, to assist you and your customer service needs. Their sole goal is to ensure your complete satisfaction. If you experience any type of technical issue, your Account Manager will facilitate a timely resolution.

In the event that your Account Manager is unavailable, CDW•G's customer service team is well-equipped to help you resolve your problem. All customer support is based in the United States. All Help Desk technicians are CompTIA certified; hold at a minimum A+ and Network+ certifications, and many are accredited in various engineering and manufacturing training courses. Our customer service team assists customers to ensure the product is working as the manufacturer intended. CDW•G provides this value added support, at no charge, for up to two years or manufacturers end of life, whichever comes first.



We offer our customers Sales Support, Technical Support, and Website Support. All of our customer support options can be accessed via phone, fax, email or chat. For all of our support options and hours of operation, please visit: <https://www.cdw.com/content/contact-us/support.aspx>.

a. Is online support available?

CDW•G Response: Yes, CDW•G's online technical and customer support services include live chat and E-support, and remote support.

Live chat and E-support

To supplement our industry leading toll-free technical support, we provide access to online live chat, accessible through the customer's Extranet site. We staff this support by our

trained technicians from 6am to 5pm MST. This site also provides support case management.

Remote Login

Our technicians have access to LogMeIn, a remote login utility, which allows them to connect to the end users computer for more in-depth troubleshooting and quicker resolution.

b. Is phone support available?

CDW•G Response: Customers can use our toll free phone number 800.383.4239, Monday – Friday from 6 am – 6 pm MST, to reach our dedicated technical support team.

c. Can agencies request a dedicated service representative and/or a dedicated service team? If a dedicated customer service representative and/or team are assigned, what types of services does the representative/team provide? How do you help the customer manage our account?

CDW•G Response: With CDW•G every customer is automatically provided one single point of contact, their Account Manager, from the very first inquiry for service. Irrespective of the size of your order or what your needs might be, every CDW•G customer receives a dedicated Account Manager who will see to ensuring your satisfaction. Account Managers are assigned to customers based on a specific segment (State and Local government, Higher Education, K12, etc.), as well as a specific region in the country.

CDW•G Account Managers attend onboarding training, known as the “Account Manager Academy,” for three months before they begin interacting with customers on their own. This training program focuses on sales consulting, product training, operational systems, and customer service. This process is much longer than industry standard practices, providing a higher level of support that our customers are quick to notice. Our Account



Managers also participate in the Sales Residency Program which delivers another layer of customer-focused training to your Account Manager.

On average, our customer relationship is 11.1 years which means our Account Managers dedicate their time to getting to know our customers and what drives their purchasing decisions. This means that our customers, particularly in the public sector, choose to work with us, year after year. This is a testament to our dedication to our customers' satisfaction.

Account managers focus on learning their customers' processes, requirements, needs, and challenges. For larger, enterprise class accounts, there are multiple Account Managers assigned to those accounts. These teams work as a team to make sure you receive the highest level of customer service. This allows them to provide expertly the following services to agencies:

- o Registration assistance to participate in National IPA
- o Contacting customers and notifying them of the benefits of the contract
- o Pre-sales consultation, including providing product and system compatibility information
- o Providing industry - specific insight on technology solutions
- o Acting as a quality control check by reviewing and approving all quote requests
- o Keeping customers abreast of availability issues and assisting with any needed alternative sourcing options
- o Coordinating any special delivery requests, including emergency orders
- o Working with available CDW•G resources, and coordinating contact for any needed subject matter expert insight
- o Keeping updated and available to assist in developing a service solution
- o Facilitating communication between the customer and National IPA, as needed

CDW•G ensures Account Managers are supported by a network of subject matter experts. Account Managers utilize these resources to provide complete guidance to their customers. This network includes:

Sales Manager	Sales Managers lead a team of Account Managers and Account Specialists to provide comprehensive solutions and outstanding sales support. They visit customer site(s) for business planning and discussions of future projects, as needed. They also assist Account Managers with expedited orders and problem remediation.
Business Development Manager	Our public sector also has Business Development Managers who focus on aligning with our customers. Their main role is to work with customers' procurement teams to review current contracts, align with strategic initiatives that the procurement team is looking to roll out, act as project manager for B2B integrations and a main point of contact to help resolve issues.
Field Account Executive	Field Account Executives ("FAE") work in tandem with Account Managers and Account Specialists to provide comprehensive solutions and outstanding sales support. Each FAE is dedicated to a specific region and industry, and provide onsite visits to customers in communities across the country. Their site visits include business reviews and other meetings, as needed. FAEs also work with System Engineers to provide onsite road mapping, project development, and technical expertise.
Solution Architects	Customers also have dedicated Solution Architects (SA) for each of their service solution needs. Solution Architects are dedicated to specific Account Teams and are the expert in supporting our customers with the appropriate service resources and tools including deployment technicians, project management and implementation engineers. The Solution Architect works closely with CDW•G customers to accurately

	scope project requirements, making certain we provide the specific skills, proper staff and solution needed to fully service the customer. Upon agreement to move forward with the service offering, the Solution Architect hands off the service delivery to the customer's dedicated CDW•G Project Coordinator and/or Project Manager to ensure successful execution.
OEM Specific Resources	Account Managers utilize an integrated network of both internal and external sales force. Many OEMs have pre-sales engineers and channel account managers (often onsite at CDW•G) providing consultation and immediate support to Account Managers. CDW•G badged Brand Managers, Field Solution Architects, and Partner Business managers work with both Account Managers and the external teams mentioned, providing further support.
Program Manager	Program Managers launch and manage contracts once awarded. They are a valuable resource to Account Managers, training Account Managers in the contracts scope and guidelines, provide contract information and updates, and assist with Extranet/Premium page issues.

d. How are problems resolved?

CDW•G Response: CDW•G Account Managers assist their customers in resolving any issues and is the primary point of contact for problem resolution. Your Account Manager has extensive relationships with our OEM partners and have internal processes to escalate your problem to the appropriate resource with our partners. Your Account Manager, being your primary point of contact, will address or route to his support team issues regarding:

- Customer service requests
- Quote and order issues
- Billing problems

If your Account Manager is unavailable to assist you, he/she will escalate your issue to their Sales Manager. If for any reason their Sales Manager is unable to resolve the issue, they will escalate the problem to their Director or the segment Vice President, if needed.

You may contact CDW•G's Customer Relations department at either 866-782-4239 or CustomerRelations@web.cdw.com. A representative will be assigned to your case, based on their skills and expertise, who will then engage the resources necessary to resolve your issue. CDW•G tries to resolve all issues within 24 hours.

If a problem is in regards to an Account Manager, we encourage customers to contact the Account Managers Sales Manager.

e. What are the location and hours of your call centers?

CDW•G Response: We have call



centers in North Las Vegas, NV; Vernon Hills, IL; Phoenix, AZ; Shelton, CT; Tampa, FL; Reston, VA; and Eatontown, NJ. Their hours of operation are 6am-8pm MST.

We strive to make it easy for our customers to get in touch with us. From your dedicated Account Manager to our customer service team, we have multiple options available to our customers to address your needs. CDW•G provides post-sales customer support Monday – Friday from 6am – 6pm Mountain Standard Time. Our customer service team assists customers to ensure the product is working as the manufacturer intended and work with them in case of any issue. CDW•G provides this value added support, at no charge, for up to two years or manufacturers end of life, whichever comes first

f. What response time is guaranteed when a customer service request is made?

CDW•G Response: Response depends on the seriousness of the request made but typically CDW•G makes every effort to respond to all Customer Service Requests (CSRs) within 24 hours. CDW•G understands some requests are more urgent than others, and utilizes a detailed incident management process for critical systems. Severity level dictates the response time of this practice and employed for issues with our own network services, co-located systems, hosted solutions, websites, or our Internet services.

We constantly monitor our customer service process, ensuring we are continuing to meet the needs of our customers. The Customer Relations Supervisor reviews all CSRs at the end of the day to ensure that each CSR is being handled promptly. Additionally, Customer Relations Quality Analysts audit 30 cases per Customer Relations Representative per month to ensure representatives meet quality standards and that we provide proper training. We make adjustments and evaluate process changes as needed when we see high volumes for particular types of Customer Service Requests (CSRs).

g. Do you measure/track the success of your customer service program? If so, how do you do this, and what are your findings?

CDW•G Response: Yes, we focus continually on improving our ability to provide the best service and products in the industry to our customers. Most inquiries and issues are resolved by your Account Manager. We have an internal customer assistance network (ICAN) that supports your Account Manager in providing you with optimal customer service. Our internal network helps your Account Manager resolve issues with: purchasing, drop ship, new items, and distribution. This internal network strives to resolve issue in 3 hours or less. Beyond your Account Manager, we have a number of corrective processes in place which include:

- o Our Purchasing Department monitors return rates on purchased products to look for quality issues.
- o We aim to respond to Return Merchandise Authorization (RMA) requests within 24 hours.
- o When we see high volumes for particular types of Customer Service Requests (CSRs), or RMAs we make adjustments and evaluate process changes, as needed.
- o The Customer Relations Supervisor reviews all CSRs at the end of the day to ensure that we handle each CSR right away.

- o Customer Relations Quality Analysts audit 30 cases per Customer Relations Representative each month to ensure our representatives are meeting quality standards and that we are providing proper training.

We offer many ways for our customers to provide us with their feedback, the primary avenue being the website (www.cdwg.com/content/about/cdw-reviews.aspx). The results have been overwhelmingly positive, with customers rating their experience with CDW•G 4.6 stars out of 5. We also survey our customers to understand how we can meet their needs better. In 2016 we added three additional surveys to better respond to our customers. We've begun to specifically survey our customers' opinions in the following additional areas:

- o Sales Contact Center
- o Customer Relations
- o Advance Technology Services

CDW•G conducts monthly loyalty surveys to measure the customer's perception of CDW•G. We utilize these surveys to collect information for several internal departments including shipping, billing, and customer relations. We select customers on a random basis to participate in the surveys. If a customer ranks us "poor" or "fair", then the appropriate CDW•G department contacts the customer to determine the reason for their unsatisfactory response and offer additional action to rectify the problem. This fortunately is rare, as the majority of end-users express favorable survey comments. The positive comment that we receive most often is "*CDW•G is extremely customer focused*".

h. Describe in detail your company's ability to hold/warehouse customers' orders and if there are any costs associated.

CDW•G Response: We will work with you to hold and warehouse your products in our distribution center for a pre-arranged period of time, depending on your project needs. CDW•G will purchase your products from the OEM or distribution channel partners and perform any required configurations. At that point, we will hold your products at our distribution center until you are ready for them. With 48 hour notification, we will prepare your order for shipment and release your order based on your schedule.

Typically customers will pay upfront for this service: one charge for the space to hold your purchase and one charge for the labor. Space and labor fees are based on the factors such as the pallet space required, the amount of time you request to hold your products in our warehouse, and the timeline for your product shipments. These fees are negotiated prior to warehousing your purchases and your Account Manager can provide you with more information on our holding and warehousing capabilities

12. Describe how your company will assist customers in navigating OEM warranty process.

CDW•G Response: Your Account Manager will assist you in navigating the OEM warranty process. Products sold by CDW•G come with the manufacturer's standard warranty and the City of Mesa customers can contact our Technical Support Department for technical support on hardware purchased from CDW•G. We provide technical support on the products that we sell for up to two years from the date of purchase. If the Technical Support representative

determines the customer needs warranty support, they connect them to the manufacturer's warranty department.

CDW•G offers a number of product lifecycle support options in addition to manufacturer warranties. This suite includes:

- Warranty extensions and upgrades
- Post warranty support
- Accidental damage protection
- Maintenance contract agreements
- Post-sale technical support
- Product and certification training
- Help desk services

We send warranty expiration emails to our Account Managers, who then inform their customers when their hardware protection is about to expire. Account Managers assist their customers in determining the best warranty and coverage solutions to keep IT investments up and running, or finding a best-valued replacement.

13. Describe how your firm will notify customer of new products.

CDW•G Response: As technology is constantly evolving, there are always new products and services coming to market. Our customers depend on the latest technologies to make their enterprises run more efficiently and CDW•G prides ourselves on being on the forefront of technical development in the IT industry and our relationships with top manufacturers often results in advanced notification of upcoming releases of new products. Our website, www.cdwg.com, is constantly updating with new products and services that we offer to our customers. Our live catalogue is updated daily and you can browse our most current products and services.



As a contract customer, we deploy a number of ways to keep you informed. Via our website (www.cdwg.com) and your Premium Page, you will be able to view the latest technologies available to you and pricing options to help you make better-informed purchasing decisions. They are constantly up-to-date on the most current and emerging technologies. Be it your Account Manager, our website, or your Premium Page, you can be sure that we will work tirelessly to keep you informed of ways to improve how you do business and which solutions best fit your needs.

14. Describe how your company will assist and support customers when their standardized is reaching EOL (end of life).

CDW•G Response: We often receive advance notification from manufacturers when a product is nearing end of life, and we make every attempt to communicate these changes to customers who may be affected. Your Account Manager will be the first source of updates on products that are nearing end of life. Because we maintain a live catalogue on our website, you will also be able to see in real time which products that we offer are nearing end of life. Your Account Manager also has visibility into our distribution partners' warehouses through EDI feeds updated at least twice daily. As part of their value-added service, they assist customers in finding substitute products that will help customers achieve the same business results.

15. Describe if technical support questions are handled the same way as a customer service request? If not, describe the type(s) of technical support available, the location of technical support, and the hours of technical support. Is it the intent to use employees of your company or will this be an outsourced function?

CDW•G Response: Your Account Manager stands ready to help you navigate this process. They receive regular trainings on new products and technologies from OEMs, receiving OEM certifications as trained, certified experts which enable them to assist their customers. We encourage customers to contact their Account Manager when technical support is necessary. If the Account Manager is unable to assist, he/she determine the best next steps. They may work with the customer and dedicated manufacturer support coworker to resolve the issues, solicit assistance from their Sales Manager, or connect the customer to our help desk. CDW•G customers can also contact our technical support team directly from our website or their Extranet site, in a variety of ways including email, chat, and telephone. Our technical support team is available Monday – Friday from 6am – 6pm Mountain Standard Time. All customer support is based in the United States. All Help Desk technicians are CompTIA certified; hold at a minimum A+ and Network+ certifications, and many are accredited in various engineering and manufacturing training courses. Our customer service team assists customers to ensure the product is working as the manufacturer intended. CDW•G provides this value added support, at no charge, for up to two years or manufacturers end of life, whichever comes first.

16. Describe what other services you offer that would be applicable to this contract (e.g. cloud, services, maintenance, implementation, design, analysis, training, repair, etc.)

CDW•G Response:

Available Services	
Cloud	Our cloud services will enable you to grow as cloud solutions change and evolve over time. We have been at the forefront of the emerging virtualization technology and are well-positioned to advise you on the Cloud Solution that best fits your needs. We are vendor neutral and we currently work with over 40 cloud solution providers. We offer a range of Cloud Solutions and will work to make sure that you receive the most cost-

	effective solution. Some of our Cloud Solution services include: • Planning Services • Migration Services • Integration Services • Managed Services
Maintenance	CDW•G recognizes that maintenance/support contracts are of great importance to many customers because uptime is vital to their success. Our strong partnerships with the industry's top technology manufacturers, paired with our own maintenance solutions, offers a variety of viable options to our customers. Our maintenance options include the following: • Warranty extensions and upgrades • Post-warranty support • Accidental damage protection • Maintenance contract agreements (conterminous, break/fix, and retainer) • Post-sale technical support • Product and certification training • Help desk services
Implementation	Our national footprint is expansive, with over 600 engineers on staff in more than 15 service offices, complimented by a national traveling team. Additionally, we have capabilities to ship 3,000+ custom-configured systems daily; we configure over 750,000 custom solutions in our two state-of-the art distribution centers annually. Our large number of engineers, paired with our configuration capabilities, allows CDW•G to handle any rollout project that contract members may have.
Design	Most of our projects begin with either an assessment or planning and design session. Our architects review your needs and can perform an evaluation of your existing environment to develop a comprehensive solution to meet your particular project objectives.
Consulting and Analysis	Most of our projects begin with either an assessment or planning and design session. CDW•G technical specialists and field solution architects are experts in many areas including unified communications, networking, wireless, network and physical security and server/storage solutions. CDW•G will save contract members staff time and effort because our experts have already initiated the due diligence process. We share our knowledge of the latest technologies as well as our expertise regarding the pros and cons of each potential solution. We also offer a variety of more complex consulting/analysis solutions for those customers who need a more in-depth evaluation of their system.
Training	CDW•G's project methodology ensures technicians and project managers work with the mindset of being an extension of the customer's IT staff. Throughout the project our team not only focuses on designing bullet- proof

	solutions, but continually engaging the IT staff; sharing knowledge, and ensuring the staff knows how to navigate the solution in which the customer vested their resources. Should a customer require training outside of this transfer of knowledge, we have a blended solution of CDW•G offerings, manufacturer standard trainings, and technology training companies.
Repair	In addition to offering onsite repair, we have our own repair center. CDW's Repair Center offers fast turnaround time and low cost out-of-warranty repair prices, as well as great in-warranty service. Our factory certified repair technicians complete typical repairs on an average of 7-10 business days. We are an authorized Service Center for the following Manufacturers: • Acer • Apple • Fujitsu • HP • IBM • Lenovo • Service Net • Sony • Toshiba
Asset Tagging/ Configuration	We provide asset tagging and configuration services To better help our customers protect their assets and to ensure that you have an accurate accounting of your inventory. We provide multiple asset tagging options: From serial or part numbers, to location or manufacturer, your equipment can be asset tagged using our CDW•G asset tags or your own tags, customized to your specifications. We can configure your equipment in our Configuration Centers according to your needs so that your products come ready to use out-of-the-box. These services will save you time and increase productivity. Your Account Manager will help you determine which options are the best fit for you.

Please note: due to manufacturer policies, limitations, and agreements, CDW may not be able to service all computer models or lines made by these manufacturers.

17. Describe options for leasing and financing and the various payment methods accepted.

CDW•G Response: CDW•G has a department dedicated solely to assisting our customers with their leasing needs. We take a vendor agnostic approach and CDW•G's leasing team can work with the City to find the best leasing option that fits within any unique budget constraints the City may be experiencing.

Leasing allows the City to procure needed equipment now, so you do not have to wait years down the road when your budget allows a large- scale purchase. With leasing and financing,

the City also has the ability to bundle costs. Therefore, if you are also working with outdated software, you can purchase it with your products, and even services, all in one fell swoop. Budgeting for leasing is easier than purchasing outright, as your monthly payments are agreed upon upfront. With a lease, you can choose to add to your lease term; and once you choose to end the lease, you often have the option between purchasing and returning the equipment.

CDW•G's Leasing Team helps members navigate through all the available leasing providers to select the best option to fit the customer's needs. For members with a Master Lease Agreement established, we more than likely have a partnership in place with their provider, or can establish one, to extend their existing agreement to incorporate purchases from CDW•G. We are a recognized force with many of our leasing partners, such as our 2014 HP PartnerOne Financial Services Partner of the Year Award. Often, we are able to leverage our relationship with our partners with more advantageous rates or terms. For Members that have diversity requirements to meet, we can recommend our WBE certified leasing partner, Commonwealth Capital Corporation.

We'll incorporate leasing into our sales team trainings for the contract, so that sales can recognize opportunities where leasing would benefit the members and to be able to speak to the different lease options available.

We are also able to accept payment via the following methods: Credit Cards (American Express, Discover, MasterCard, Visa), Checks, EDI, EFT (Electronic Funds Transfer), and Procurement Cards.

Tab 3

Pricing Forms

- 1. Provide price proposal as requested on the Pricing Document (Attachment A- "National TAB") attached herein. In addition to indicating your proposed discounts on the Price Page, you must also apply those discounts to the sample items listed in the City's Market Basket listed in Attachment A.**

CDW•G Response: The central metric in a pricing structure is the index from which that price is derived. CDW•G utilizes our Nationally Advertised Price (NAP) as the starting point in our price proposal. Contrasted with traditional MSRP (Manufacturer's Suggested Retail Pricelists) which does not reflect market conditions and therefore does not change, our NAP pricing is scaled and adjusted to remain competitive in the marketplace. Our customers can be sure that the pricing quoted is the most up-to-date and competitive available.

To provide National IPA with a complete catalog offering, CDW•G is proposing contractual pricing to be factored by applying discounts to CDW•G's product taxonomy. This approach ensures a complete catalog offering, provides the greatest breadth of product offering, as well as an easy "on-ramping" as new product and technologies are introduced. For ease of evaluation and to be compliant with the RFP requirements, CDW•G has conformed to the City of Mesa's product taxonomy in the market basket as well as the National Discount sections of the price proposal, however the resultant contract will be managed utilizing the CDW•G Category table listed below:

CDW•G Categories	Discount
Accessories	6.75%
Power, Cooling & Racks	5.00%
Desktop Computers	3.00%
PC Compatible Desktop Computer	2.10%
Data Storage / Drives	5.50%
Enterprise Storage	5.00%
Point of Sale/Data Capture	4.25%
Servers & Server Management	4.00%
Services (CDW Delivered)	0.00%
Notebook/Mobile Devices	2.50%
Notebook Computers	2.10%
Convertible PCs/Slate PCs/iPAD	2.25%
Chromebooks	0.00%
Netcomm Products	5.50%
Gigabit Switch	6.00%
Modular Switch Chassis	6.00%

Modular Switches	5.50%
Carts and Furniture	5.00%
Printing & Document Scanning	3.00%
Services (3rd Party Delivered)	0.00%
Warranties-Product Protection	3.50%
Software	4.00%
Collaboration Hardware	4.25%
Memory/System Components	13.00%
Video-Projection-Pro Audio	3.50%
Cables	15.00%
CDW Configuration Services	5.00%
Apple Products for Eligible Entities	.50%

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

2. Propose and provide details of additional discounts or rebates for volume orders, special manufacturers' offers, free goods program, the total annual spend, etc.

CDW•G Response: Under the contract, individual clients who purchase significantly larger amounts may qualify for an additional discount on individual purchases. Additionally, as a partner on the contract, CDW-G will be leveraging its influence on manufacturer partners for additional cost saving programs based on contract spend.

With our dedicated Account manager model, CDW•G Account Managers are tasked with providing exceptional customer service and excellent value to each customer who purchases from National IPA. With that goal in mind, if a customer were to forecast larger quantities, the Account manager will work with manufacturer partners on behalf of his/her customer to achieve greater than contract discounts. The discounts and effective savings will be dependent on manufacturer support as well as the size and volume of the order. Depending on the product type the discounts can be anywhere from 2- 20% additional savings.

Per the requirements of the solicitation, Attachment A- Pricing Forms is included and attached in Excel format.

Tab 4

Qualifications (Abilities, Experience, and Expertise)

1. Provide a brief history and description of your firm. Discuss firm's national presence in the IT solutions industry.

CDW•G Response: In 1982, 28-year-old, strapped-for-cash Michael Krasny placed a \$3 classified ad in the Chicago Tribune for his IBM personal computer. After a flood of offers and a \$200 profit, he had an idea. Krasny formed MPK Computers and he became a computer broker. This company later became CDW. Krasny's goal was to make CDW the most successful seller of IT products in the U.S. Some of his first tasks to solve customers' problems include establishing a computerized database of product and customer info, creating algorithms to gauge product sales and demand, and a hand-operated warehouse roller to fill backlogged orders.

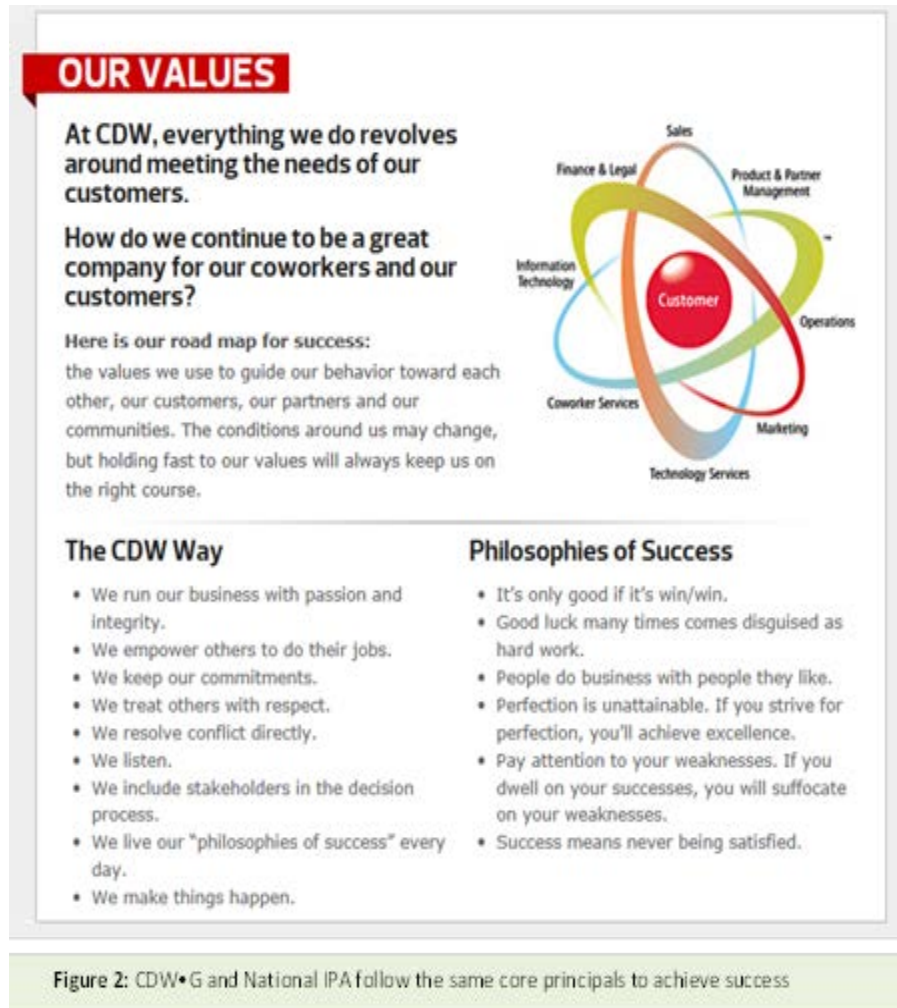


Michael Krasny compiled a list of guiding principles—principles that remain at the core of every decision CDW makes today. We believe the reason the National IPA/CDW•G relationship is so successful is because our values and philosophies practically mirror the values that make up the National IPA Way.

Our values begin with the belief that “People do business with people they like.” This is why we recruit top IT graduates, hire the industry's most experienced technology experts, partner with business entrepreneurs and educators, and engage military veterans with battlefield experience. It's because we want to support our customers with talented people who have not only walked a mile in their shoes but are committed to providing solutions that work.

CDW's way of business hasn't changed much since '82. We are still recognized by the hybrid business model developed by Krasny, a perfect blend of distribution and IT solutions provider in one knowledgeable force. We still practice a healthy dose of self and competitor evaluation, going from area to area looking for our weakest links and turning them into strengths. In fact, it is from this idea that CDW•G was born. We realized that neither we, nor our competitors, we're doing a great job of providing the segment-specific support to our public customers that they needed, or deserved. So in 1998, CDW•G was established, providing our government and education customers insight and expertise that fit their specific needs. In 2005, we incorporated healthcare segment into this mix.

We continue to use our innovative tools and our deep relationships with our customers and vendor partners to evolve our business as our customer needs dictate, such as our



expansive cloud portfolio. Proof this approach is working is our \$13.9 billion in sales for 2016 and our growing customer base of over 350,000 valued organizations.

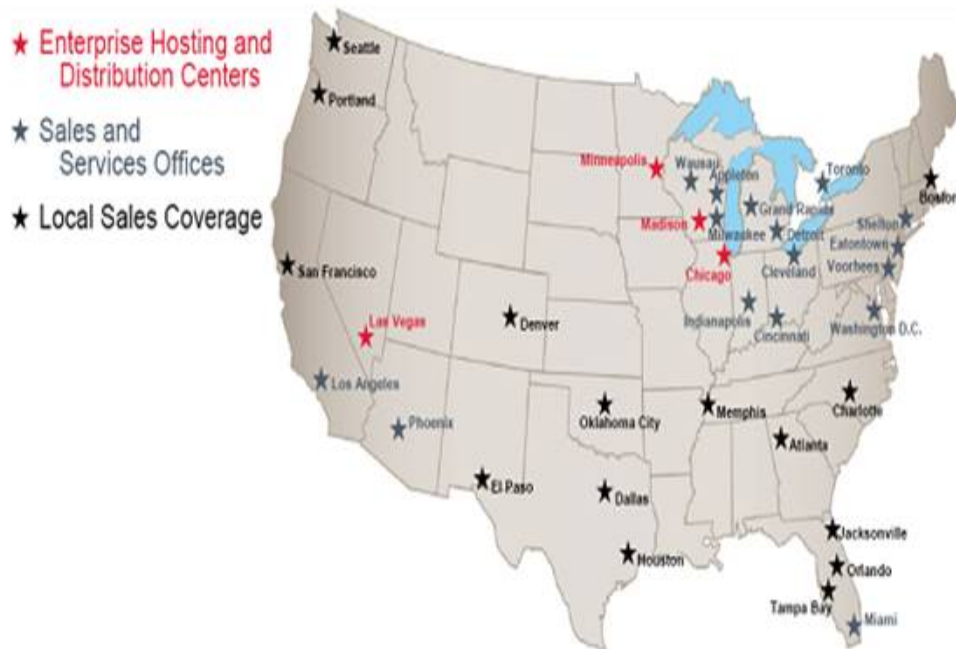
Many customers have remained loyal to CDW•G for decades because they know we aren't satisfied with past successes. Instead, we've been focusing on providing advanced solutions and service in areas like cloud computing, mobility, security, virtualization and networking.

2. Provide the total number and location of sales persons employed by your firm.

CDW•G Response: CDW•G currently employees 1456 coworkers in 43 different locations nationwide. Over 840 of our CDW•G sales force are Account Manager, with an additional 65 Field Account Executives dispersed throughout the country.

3. Provide the number and location of support centers (if applicable).

CDW•G Response: Currently, we have 43 separate locations. Speaking specifically to the benefit of this contract, seven of the states with new locations are also in the ten states with the highest historical spend on the contract.



4. Provide public sector sales figures for 2014, 2015, and 2016 and the percentage mix of hardware, software, and services.

CDW•G Response: Below you can see evidence of National IPA Contract sales growth. The growth rates of National IPA exceed the standard rate for CDW•G, verifying our good faith effort to promote the contract within our existing client base.

National IPA Contract Sales		
Year	Sales In Millions	% of Growth
2008	\$4	N/A
2009	\$21.7	442.50%
2010	\$44.1	103.20%
2011	\$83.3	88.90%
2012	\$99.4	19.30%
2013	\$113	13.68%
2014	\$160.1	41.68%

2015	\$253.7	58.46%
2016	\$390	53.72%

5. Please submit you FEIN and Dun & Bradstreet report.

CDW•G Response: CDW•G FEIN: 36-4230110.

Dun & Bradstreet numbers:

CDW LLC: 10-762-7952; CDW Government LLC: 02-615-7235

CDW•G cannot supply a Dun & Bradstreet report, as it violates our contract with Dun and Bradstreet. The City of Mesa can obtain a report for CDW•G from Dun & Bradstreet.

6. Provide a summarization of your experience in performing work similar to that outlined in this solicitation.

CDW•G Response: CDW•G holds a number of similarly structured contracts. Since 2008, we have grown our contract with National IPA, as evidenced in the chart above, and have demonstrated success in broadening and promoting the National IPA contract. Over the past eight years, National IPA contract sales have consistently grown, year after year, most recently reaching \$390M.

For our references we provide customers that can attest to our abilities of both managing this contract, and to addressing and meeting their needs as our customer. We provide contact information for these customers in a separate, confidential file.

7. Provide a minimum of three references for which your firm has provided the same solution (please include company name, address, contact person, phone number, email address and dates of service). References from other public agencies, particularly municipal governments are preferred.

CDW•G Response:

Kern High School District- Business Services	
Contact	[REDACTED]
Address	5801 Sundale Avenue, Bakersfield CA 93309
Phone	[REDACTED]
[REDACTED]	[REDACTED]
Date of Service	2014-today
Culpeper School District	
Contact	[REDACTED]
Address	450 Radio Lane, Culpeper VA 22701-1521
Phone	[REDACTED]
Email	[REDACTED]
Date of Service	2005-today
Los Angeles Superior Court	
Contact	[REDACTED]
Address	111 North Hill Street, RM 105D Los Angeles, CA 90012-3219
Phone	[REDACTED]
Email	[REDACTED]
Date of Service	2013-today

- 8. Provide resumes and three references (preferably from the public sector) for the primary customer service representative(s). Resume(s) shall include their title within the organization, a description of the type of work they would perform, the individuals' credentials, background, years of experience and relevant experience, etc. References should include the contact's name, phone number, email, position, organization, and the work which the Offeror performed for the reference.**

CDW•G Response: The City's two primary customer service representatives' resumes can be found in Tab 7 "Appendix." Below are the references for each:

References	
Mark Ellis, Manager- Program Management	Pat O'Brien, Field Sales Manager
Ohio Council of Educational Purchasing Consortium Elmo Kallner- Contact ekallner@mail.mecdc.org 614-579-2669	City of Tucson Marcheta Gillespie- Contact Marcheta.Gillespie@tucsonaz.gov 520-791-4217
Green River Regional Educational Cooperative Ann Burden- Contact Ann.burden@grrec.org 270-563-2113	National IPA Ken Heckman- Contact Ken.heckman@nationalipa.org 615-289-8561
National Joint Powers Alliance David Duhn- Contact David.duhn@njpacoop.org 218-894-5469	City of Jacksonville/Jacksonville Transit Authority Bursey Armstrong- Contact bjarmstrong@jtafla.com 904-630-3167

- 9. Provide information regarding if your organization ever failed to complete any work awarded.**

CDW•G Response: At the time of submission and to the best of our knowledge, CDW•G has never had a contract terminated for cause

- 10. Provide information regarding if your firm, either presently or in the past, has been involved in any litigation, bankruptcy, or reorganization.**

CDW•G Response: Though CDW•G has been involved in litigation, it has not nor is it expected to impact our ability to provide products and services on this agreement. We have not filed any bankruptcies.

Tab 5

Technology

1. Describe your website and the ease-of-use for customers to perform the following types of tasks:
 - a. to search for products
 - b. to find alternate products (if a certain product is not available)
 - c. to perform side-by-side price comparison of products
 - d. to order products
 - e. to track order status, to include backordered items
 - f. to determine when an item was received and who received it
 - g. to restrict/block the ordering of certain line items and to restrict/block the ordering of groups
 - h. to create approval paths/levels for orders, to include creating an approval path for restricted items
 - i. to create “favorites” list or subscribed purchases other personalized list of frequently ordered items
 - j. to create a “shared” list for an agency to use
 - k. to obtain online customer service
 - l. to receive online training
 - m. to accept credit card payment (and describe the level of data offered; also describe your security measure for credit card orders)
 - n. to track their budget for purchases
 - o. to generate reports

CDW•G Response: Each Agency utilizing the contract has their own customized Extranet that is available to users 24 hours per day, seven days a week. This value-added tool makes working with CDW•G easy, convenient and efficient. We have been the pioneers in tapping the power of the web – and we continue to develop enhancements based on customer feedback. Our extensive suite of extranet tools is provided to contract users at no additional cost. We have enabled more interactive information about updates to the website via <http://www.cdwsiteinfo.com/>.

Our web capabilities provide an extra level of convenience, customization, and efficiency for all users. Our award-winning e-Procurement tool brings customers:



Speed — Customers can research, purchase and track technology easier and faster than ever. CDW•G makes the buying process simple and more efficient. With one click, authorized purchasers can procure the best solutions at the best price from one of the industry's largest inventories of brand-name products. Consolidating purchases through our "one-stop shop" saves customers both time and money.

Information — Our extranets provide the industry's most comprehensive suite of e-Procurement tools to gather the breadth and depth of detail to help make the right purchasing decisions. The site puts customers in direct contact with their Account Manager who can personally guide with suggestions and recommendations to help make informed purchase decisions.

Reporting — As a rich source of detail on purchase history, license agreements, and asset tracking, your Extranet site lightens the burden of report generation. This customizable extranet is a productivity-enhancing tool, giving the exact detail customers require whenever they need it. As detailed in Question #10 of this section, customers can also download reports into a variety of formats, including Microsoft Excel, CSV and tab-delimited files. The value-added benefit of a customized extranet is the ability to manage data and information that will enable customers to make more cost-effective decisions. It also reduces the administrative and purchasing costs involved in procurement.

Extranet Features

We provide specific features of a customized extranet below:

Contract Pricing — View Negotiated Contracts in Real-Time, Receive Bids Quickly

Agencies can view the City's contract pricing, right from their extranet. City of Tucson contract users can view all eligible contract pricing as they shop. Their extranet automatically provides their special prequalified pricing and discounts on tens of thousands of products. Authorized users can access contract and/or special pricing in real-time, as the site is constantly updated to reflect the latest status. Buyers from any location can view approved contract pricing to ensure this pricing structure holds true throughout the entire organization.

Account Team — Access Expert Support with a Personal Touch

Your extranet page allows customers to work directly with your dedicated Account Manager and team of sales support, as well as customer service professionals and certified technicians during every step of the purchasing cycle. The page displays pictures of the customer's Account Team, view their contact information and check their availability in and out of the office.

Online Quotes — Create, Review and Place Orders in Minutes

Purchasers can review quotes online just moments after their Account Manager create it. From here, users can print it, forward it to colleagues or manager for pre-authorization, or convert it to a live order. This feature also lets customers create their own quote right from their shopping cart, in addition to viewing contracts, volume and bid pricing online.

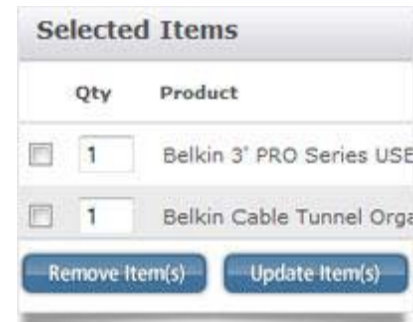
Company Solutions — Compare and Buy Single or Bundled Products with One Click

This capability enables agencies to customize their extranet home page to show the products and configurations their organization uses, and to streamline standard product orders. They can choose a variety of formats to view products individually, in bundles, by manufacturer or even in side-by-side comparisons. By grouping products into bundles, there is no guesswork when making repeat purchases on your standardized solutions. The

extranet page also allows customers to perform quick product searches and to “comparison shop” by viewing side-by-side, detailed product descriptions before they even place an order. This takes the hassle out of downloading data from multiple manufacturer websites.

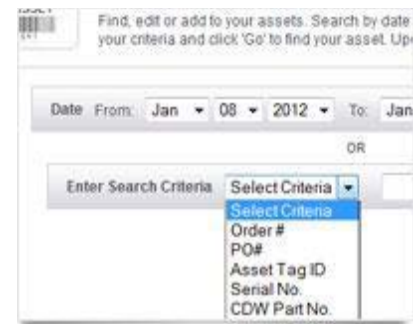
Catalogs and Custom Catalogs – Limit Product Purchase Rights

The catalog feature allows agencies to create customized catalogs. Customized catalogs can be used to limit the purchasing ability of end-users based on: Purchase History, Corporate Solutions, Contract(s), Manufacturer Part Number, the CDW•G EDC, and through the Search function. The same engine and keywords that drive the Search Engine are also available to search for product. This allows purchasers to refine items listed before making them a part of their agency’s custom catalog for one or multiple users. These rules can be used to add product to a catalog or exclude items from one as well. Once applied to a group or PAS workflow, they can really help control the spending habits of end users and help keep IT budgets on only the standard of items approved.



Asset Management — Follow Asset-Tagged Hardware throughout Agencies

Your extranet page provides an online asset management tool to track asset tagged products. Products are searchable by serial number, order number, date of purchase, product description, warranty length, invoice number, or location. Users can even create their own custom fields and add or enter products purchased from other vendors. This extranet feature also allows customers to modify their records to reflect the transfer of equipment from one location to another, a real plus for customers with multiple locations. Asset Management then lets the user create and download a detailed report of their hardware assets.



Account Linking — View, Place and Track Orders from Multiple Addresses

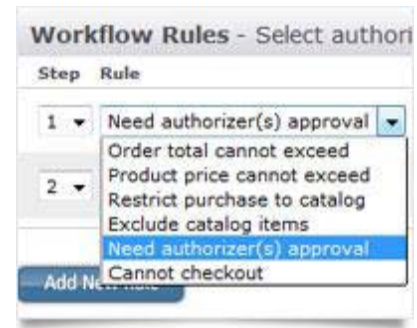
Account Linking lets customers view, place and track orders, including historical purchases across multiple bill-to addresses. A single login gives authorized users a way to efficiently access their order status from across the enterprise to anywhere in the world. This eases the challenge of multiple purchases from disparate locations by centralizing the purchasing process, yet offering the flexibility to place and track orders by address and location.

My Purchases — Track Order Status and Purchasing History Instantly

This feature offers a full breadth of tools to track order status, purchasing history and financing options. Original invoices can be printed; giving a view into outstanding balances and invoices, credits, adjustments and/or payments. Agencies can download their purchasing history in preferred time increments (such as month-to date, last six months, prior year, etc.) in any number of formats. The system lets users automatically save this data in spreadsheet or database applications. Authorized users can readily search their order, get a tracking number, check shipping status, and request a Return Merchandise Authorization (RMA).

Purchasing Authorization System (PAS) — Streamline Purchasing Approvals

The extranet page also automates the approval process. PAS enables customers to restrict their employees' purchasing power and to automate required approvals before they place any order. PAS bypasses the laborious step of having a purchasing administrator personally place each order. This process allows for multiple levels of approval, as well as multiple approval systems, which can all function independently for many departments/locations within the procurement process. This system also allows for reporting that is specific to orders which have moved through the requisition process setup through PAS. All reporting is as dynamic and editable as the other tools on their extranet.



Product Finders — Easily Find the Right Accessories and Supplies

CDWG.com now offer Product Finders to make it even easier to find supplies for printers, fax machines, copiers, multi-functions, and other devices. Customers can also search for desktops and notebooks. Product Finders guides to the technology solutions that fit agencies needs and will even help find information for discontinued models. These Finders were designed to ensure

compatibility for product categories including cables, desktops, ink and toner, memory, notebooks, power protection, and cases and bags.

2. Describe additional functionality offered by your website. Provide screenshots, a demo “CD/jump drive,” demo URL, a manual, etc., or any other format that will aid the City in our evaluation of your website.

CDW•G Response: The City can review the current contract's CDW•G Premium Page at www.cdwg.com/nationalipasolutions. When placing an order, agency members log into their own personal CDW•G Extranet to complete the procurement. This account is available twenty-four hours a day, seven days a week. On this site, agencies can compare products, quickly find compatible accessories, and select from a number of shipping options. However, this account offers more than just ordering functions. Agencies can track spend history, manage assets, and create customized reports. If they are in need of customer service assistance, they can reach their account manager, chat with or email a representative, and even place an RMA request. For an Extranet tour, visit <http://www.cdwsiteinfo.com/extranet-video/>.

The Extranet is not the only site we offer helpful tools to our customers, our main page, [cdwg.com](http://www.cdwg.com) has a plethora as well. For a tour of this site's functionalities, visit <http://www.cdwsiteinfo.com/cdw-site-tour/>.

CDW•G will continue to build new e-Procurement solutions and feature enhancements based on customer feedback. We strive to regularly incorporate new features and capabilities that ease inventory headaches.

3. Describe any national awards and/or other recognition that your website has received.

CDW•G Response: In October 2015 CDW•G was ranked No. 8 on the list of America's 500 largest e-retailers by Internet Retailer's Top 500 Retail Web Sites Guide.

4. Describe the hours your website is available? What are your hours of downtime, such as for system maintenance?

CDW•G Response: CDW•G does not have any scheduled extranet down time. Our website's availability is above 99.95%. We are constantly imaging and activating revisions while the site is fully operational. CDW•G works to ensure that there is redundancy in place to minimize any risk of downtime for contract purchasers.

We typically inform our customers of scheduled extranet outages 24-48 hours in advance. When these outages must occur, which is not often, we tend to schedule them on weekends when there is the least impact on the customer. We advise our customers on any significant changes 45 days ahead of the scheduled change. Customers can let their Account team know if they would like to be added to this notification list.

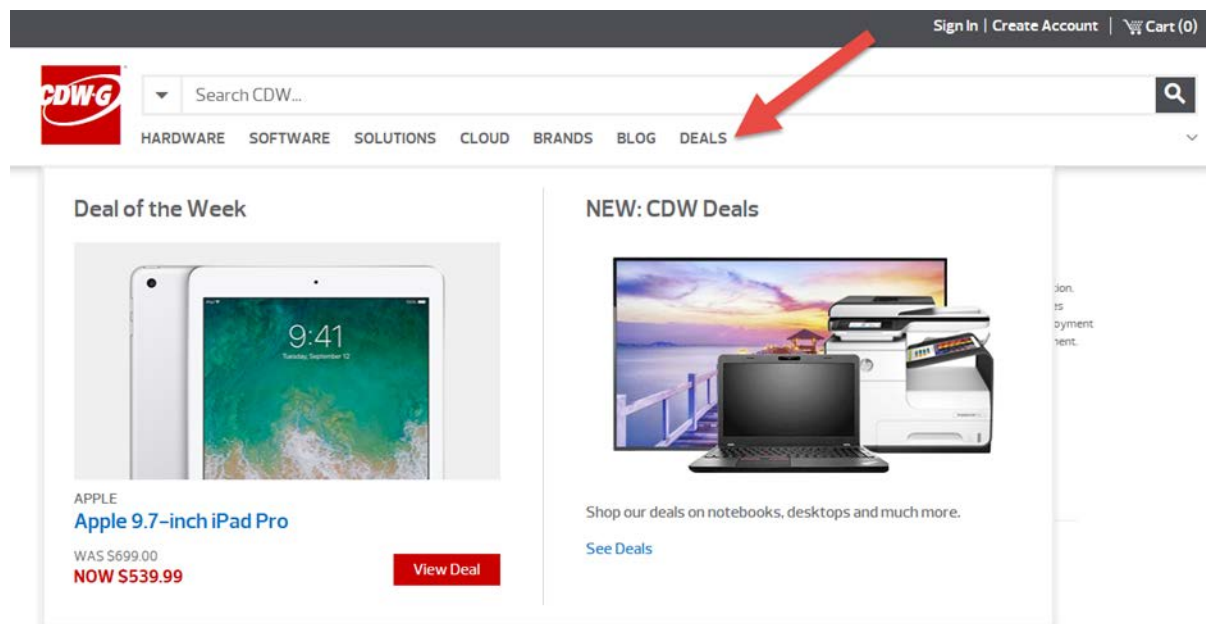
5. Does your website offer real time product availability?

CDW•G Response: Yes, most manufacturers send us daily Electronic Data Interchange (EDI) downloads with pricing and product availability information. Our channel distributor partners send us daily EDI downloads, which allows us visibility to inventory items and pricing broken down by local or remote facilities. Furthermore, our top three distribution partners provide real time inventory information.

Using a Just-In-Time inventory management system, our purchasing department excels at keeping a one-to-four-week supply of products in our distribution centers (depending on current sales volume trends for each product). We scan inventory as it enters the distribution center, as it moves through the fulfillment process, and before it leaves the centers. This allows us to maintain near perfect inventory accuracy. The system processes and transmits each scan in real-time, providing immediate inventory updates.

6. How does your company leverage your website to inform customers of the additional savings that may be available?

CDW•G Response: Our website has a dedicated tab for informing our customers of additional savings and deals that are available to them. Under the "Deals" header, as shown below, we advertise discounted products and pass this on to our customers. Deals span all product categories and manufacturers, and we inform our customers if a specific OEM is running a particular deal. We strive to pass on value and savings to our customers, and this is another way our website keeps our customers updated and apprised of our latest offerings.



7. Describe the types of email confirmations that your website generates. What events trigger an email going to the customer?

CDW•G Response: CDW•G's website generates a number of customer email confirmations including quote and order confirmations, notification of back orders, and shipment notifications. National IPA members can enroll in paperless billing to receive credit card invoices via email, and reminders to order frequently used products. Order status information is available 24 hours a day on our Quick Order Status tool.

8. Describe the registration process to set up new customers for you online ordering process. Is self-registration available? If an agency does not want self-registration, are you available to assist in the registration process?

CDW•G Response: Yes, self-registration is available. Additionally, your Account Manager will be happy to walk you through the registration process and ensure that you're properly entered into the system. Your Account Manager are trained to enroll new customers to access the National IPA contract, should our customers need immediate access. A confirmation number is generated and sent to your Account Manager who will then then provide this confirmation and the customer's CDW•G account number to your dedicated Program Manager, who immediately adds them to the system for contract access. Jumana DiHu, your Program Manager, adds new members to the contract typically within a week of receiving a new member list from National IPA.

If the agency does not already have an Extranet account, there are a few short steps for them to create an account. Once the customer creates their account, they simply log on to access the contract. Account Managers will provide any registration assistance.

9. Describe if your website can be customized for an agency's specific needs, such as placing our logo on your website, associating an agency blanket purchase order number on all orders, creating a bulletin board or other place to display customized messages, displaying approved configurations, naming certain fields (i.e., user defined fields, ability to include budget information), etc.

CDW•G Response: Your Extranet account can be customized to your exact specifications. We can include your favorite items, frequently purchased products, bundled items. Your site will be tailored to your needs. The site currently displays the National IPA logo, displays a customized message, highlights appropriate products, and has fields named as specified by the City. Agencies customized extranet home page will provide authorized users with quick and easy access to the following features:

Quick Cart – Enables users to add items directly to their cart by typing in the CDW part number.

Account Team – Displays the "In/Out" status of your dedicated Account Manager and provides immediate and direct access to your dedicated Account Manager via phone fax and email. Also, provides a link to your entire dedicated Account Team.

News – Provides additional information on extranet tools and enhanced features.

Promotions and Updates - Shows current promotions and updates to technology solutions.

Featured Products – Highlights specific products and solutions.

Recent Orders – Displays information for orders for the past 45 days including order status, purchase date, purchase order number, purchaser, and sub-total.

Contracts – Provides details of pricing contracts for your organization and enables you to download pricing for your contracts.

Bundles – Takes the guesswork out of repeat purchases. Administrators can create custom bundles containing their company's standardized solutions.

Individual Products – Allows administrators to highlight products for quick and easy access.

Comparison Charts – Helps users to compare the features and prices of multiple products during the shopping process and save those comparisons for future reference.

Links – Lets users maintain easy access to manufacturer websites and other helpful online destinations. There are links to additional extranet features that are only a click away. These features include:

My Purchases – Offers a full breadth of tools to track order status, purchase history, and financial information.

Security Settings – Enables administrators to restrict users' access to specific functions.

Asset Management – Enables you to create and download a detailed report of your organization's hardware assets that have been asset tagged.

Software License Tracker – Simplifies software license management and reduces the risk of noncompliance.

Quotes – Enables you to create your own quote right from your shopping cart, forward it for preauthorization, and convert it to a live order.

Purchase Authorization – Automates approval process and manages users' purchasing power.

Custom Catalogs – Displays only products approved for purchase by your organization.

Online Chat – Puts users in direct contact with customer relations, technical support, and e-support team representatives.

10. Describe the types of online reporting that are available. Is customized reporting available?

CDW•G Response: CDW•G's reporting capabilities are extremely flexible and comprehensive. CDW•G Extranet provides access to real-time information in a way that is convenient and easy to use.

The City of Mesa authorized users have access to your extranet 24 hours per day, 7 days per week. Authorized users have the ability to generate a variety of reports via their agency's extranet. Data fields include, but are not limited to:

- Product name
- Item description
- Part number
- Cost per unit
- Order quantity
- Delivery location
- Date ordered

- Purchase Order#
- Purchased by

Agencies can view standard reports, and create and save custom reports. Reports can also be generated for a variety of timeframes; differentiated by site, division, department, buyer, city, state, product, etc. Users can select from Microsoft Excel, CSV and tab-delimited files for report downloading.

11. Describe your online return process (if available).

CDW•G Response: In order to return any product to CDW•G, including damaged or defective products, contract users must request a Return Merchandise Authorization (RMA) number. The most efficient way to request an RMA number is via the customer's CDW•G Extranet. When an RMA request is entered, the system automatically checks several factors to see if the RMA can be automatically approved. If the return meets these factors, the RMA number is emailed directly to the customer. Should the auto-approval criteria not be met, the RMA will route to Customer Relations for processing. The benefit of our automated system is faster turnaround time on most RMA approvals. Once CDW•G has processed the request, the customer receives an email with the RMA number. The approved RMA number must be clearly noted on the shipping label of each box.

CDW•G carries many more highly customizable products than what we have historically carried on this contract. A uniquely customized product is not as simple to return as an off-the-shelf product. Once a product has been customized, we are unable to return it to the OEM ourselves; that activity must be handled directly between the purchaser and the OEM. Therefore, CDW•G proposes the following return policy:

- o Except for certain products that are uniquely customized to City specifications, which shall be indicated at the time of Quote, all defective products shall be identified within thirty (30) days of receipt and will then be replaced and exchanged by the Contractor. The cost of transportation, unpacking, inspection, re-packing, re-shipping or other like expenses shall be paid by the Contractor. All replacement products must be received by the City within seven (7) days of initial notification.
- o Uniquely customized products are typically indicated by the inclusion of the designation "CTO," "BTO" or "Customer's Name" in the product description of the item. When providing a quote for products that are uniquely customized to City specifications, Contractor shall include the following statement on the quote: *"This quote contains a custom item, this item may not be able to be returned, depending on manufacturer restrictions."*

More often than not, we are able to find a return remedy - even in the case of customized products. To ensure customer clarity around returning customized items, we will instruct our Account Managers to discuss the return policy with the customer during the building process for customized solutions, if they are not already doing so.

12. Describe any third-party integration that you have successfully implemented. For example, is your website integrated with any third-party procurement, financial, or purchasing/credit card systems? Is there a cost for these services?

CDW•G Response: CDW•G has implemented eCommerce solutions with over 72 eProcurement partners, for over five thousand customers on most of the major purchasing platforms. There is no charge for integration support, unlike some of our competitors.

CDW•G has overseen cXML and OCI Punch-Out solutions since 2001, with over 8,000 integrations to date. These integrations make up a quarter of our web business. There are three teams that span the eCommerce/IT/Sales departments that are solely dedicated to eProcurement integration projects.

We likewise provide level III/tier 3 credit card reporting and provide financial reports (invoices and histories) in different automated formats for compatibility with financial systems. While our website is compatible with third party e-commerce solutions, the CDW•G is owned and managed in-house without reliance on third party support for our key web systems. There is no additional charge for these services.

Below are examples of ecommerce methods CDW•G currently supports with our customers:

FTP (File Transfer Protocol)

CDW•G's FTP processing is flexible; we can exchange fixed length, wrapped or unwrapped files, with or without CR/LF. We can also exchange stream files – one continuous stream of data (variable length). Naming conventions for files and the number of files exchanged are flexible.

CDW•G or the customer can host the FTP site. UserID and Password are required to access our FTP site. CDW can delete files that have been retrieved. Partners will be expected to delete files after they are retrieved.

CDW•G uses PGP to encrypt data exchanged FTP. PGP (Pretty Good Privacy) is widely available and uses public-key cryptography to exchange files, with both privacy and authentication, over all kinds of networks. CDW•G can also support FTP using SSH or SSL session encryption.

EDIINT-AS1

This communication method uses the e-mail system to transfer encrypted data over the internet. The partner needs to have an AS1 compliant software package that can encrypt and decrypt EDIINT AS1 data.

EDIINT-AS2

This method uses the internet to exchange data. This communication method uses an HTTP post (language of web sites) to transfer encrypted data over the internet. The partner needs to have an AS2 compliant software package that can encrypt and decrypt EDIINT AS2 data.

HTTPS (HyperText Transmission Protocol, Secure)

This method allows CDW to send and receive data through a Web Server using HTTP/S. HTTP is traditionally used for displaying interactive Web pages, but can also be used as a communication method.

VAN (Value Added Network)

A VAN is the least desirable method due to the fees incurred for this third-party service. CDW•G will be happy to work with you in any capacity to eliminate the use of VANs as a communication method. If necessary, we can establish a secure connection to a VAN and the VAN should exchange in a secure fashion as well.

13. Describe your strategic vision for your website – i.e., Is new functionality expected to be added? If so, describe the functionality and the timeline for implementation. How often is the web redesigned? As technology evolves (for example, new search engines are more robust), does your website evolve, too? Etc.

CDW•G Response: The CDW•G website is the 10th largest website in the world measured by revenue volume. While we no longer release specific website sales numbers, past numbers indicate that our website is now processing over \$2 billion per year in transactions. Additionally, the website is estimated to assist with another \$4 billion in sales that are finalized on the phone or via purchase order.

The extreme volume and business-critical nature of the CDW•G website means we must focus on usability and uptime at all times. CDW•G employs over 200 in house IT personnel to keep the website accurate and running; their success is reflected in the less than 6 minutes of unplanned downtime last year - an uptime exceeding 99.997%.

Because the website processes such volume, new functionality is constantly in the works but never fully implemented until we have conducted rigorous testing for usability, compatibility and perceived value to our customers. We have also added a new Solutions & Services section, which contains streaming content and white papers that cover all the comprehensive categories where our software and hardware solutions pair with best in class support and advanced technology services.

As a world-leading website, the CDW•G site has the functionality to be compatible with our most advanced customer needs, including advanced security, multi-level approvals, asset tracking and others. Our staff of 200 will always be expanding these capabilities as advancements in technology and customer needs dictate.

Tab 6

Other Forms

The following forms should be completed and signed:

1. Vendor Information Form
2. Exceptions & Confidential Information Form
3. General Questionnaire Form
4. Lawful Presence Affidavit
5. Respondent Certification Form (Offer and Acceptance)
6. Respondent Questionnaire
7. W-9 Form. All responses should include a fully completed, current W-9 form. Failure to include the W-9 will not disqualify your response, however the W-9 must be submitted to the City prior to the execution of any contract pursuant to this Solicitation.

CDW•G Response: CDW•G's response to these forms follow this page.

REQUIRED RESPONSE FORMS**VENDOR INFORMATION**Company Legal/Corporate Name: CDW Government LLC

Doing Business As (if different than above): _____

Address: 230 North Milwaukee AvenueCity: Vernon Hills State: IL Zip: 60061-9740Phone: 800-808-4239 Fax: 847-419-6200E-Mail Address: _____ Website: www.cdwg.comDUNS # 02-615-7235 State Where Business Entity Was Formed: Illinois

Remit to Address (if different than above): _____ Order from Address (if different from above): _____

Address: 75 Remittance Drive, Ste #1515 Address: _____City: Chicago City: _____State: IL Zip: 60675-1515 State: _____ Zip: _____Contact for Questions about this bid:Name: Cale LaSalata Title: Proposal SpecialistPhone: 203-851-7211 E-Mail Address: calelas@cdw.comDay-to-Day Project Contact (if awarded):Name: Pat O'Brien Title: Field Sales ManagerPhone: 847-371-5584 E-Mail Address: patobri@cdwg.comSales/Use Tax Information (check one).☐ Respondent is located outside Arizona and does NOT collect Arizona State Sales/Use Tax. (The City will pay use tax directly to the Arizona Department of Revenue.)☐ Respondent is located outside Arizona, but is authorized to collect Arizona Sales/Use Taxes. (Respondent will invoice the City the applicable sales tax and remit the tax to the appropriate taxing authorities.)State Sales Tax Number: _____ City of: _____ AZ
City Sales Tax Number: _____
Applicable Tax Rate: _____ %☒ Respondent is located in Arizona. (Respondent will invoice the City the applicable sales tax and remit the tax to the appropriate taxing authorities)State Sales Tax Number: 07637419- State of Arizona
City Sales Tax Number: _____ City of: _____ AZ
Applicable Tax Rate: _____ %

EXCEPTIONS & CONFIDENTIAL INFORMATION

Exceptions (mark one).

Respondents shall indicate any and all exceptions taken to the provisions or specifications in this Solicitation. Exceptions that surface elsewhere in the Response and that do not also appear under this section shall be considered rejected by the City, invalid and of no contractual significance.

Other Forms or Documents: If the City is required by the awarded Respondent to complete and execute any other forms or documents in relation to this Solicitation, the terms, conditions, and requirements in this Solicitation shall take precedence to any and all conflicting or modifying terms, conditions or requirements of the Respondents forms or documents.

***Special Note – Any material exceptions taken to the City's Specifications and/or Standard Terms and Conditions may render a Bid Non-responsive.**

☐

No exceptions

☒

Exceptions Taken: Please describe exact sections to which exception is taken. If proposing new or modified language, your firm shall identify the requested language below or provide as additional attachment. The City reserves the right to accept or reject any requested exceptions listed in the below section or attached to the solicitation.

Confidential/Proprietary Information (mark one).

☐

No confidential/proprietary materials have been included with this Response.

☒

Confidential/Proprietary materials included with Response. Respondent must identify below any portion of their Response deemed confidential or proprietary and attach additional pages if necessary (See Mesa Standard Terms and Conditions related to Public Records). Requests to deem the entire bid as confidential will not be considered. The disclosure by the City of information deemed by Respondent as confidential or proprietary is governed by City of Mesa Procurement Rules.

Exceptions

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
9 / Scope of Work page 16	DEFECTIVE PRODUCT. All defective products shall be replaced and exchanged by the Supplier. The cost of transportation, unpacking, inspection, re-packing, re-shipping or other like expenses shall be paid by the Supplier. All replacement products must be received by the City within seven (7) days of initial notification.	CDW•G seeks the following alternate language: All defective products shall be replaced and exchanged by the Supplier. The cost of transportation, unpacking, inspection, re-packing, re-shipping or other like expenses shall be paid by the Supplier. All replacement products must be received by the City within seven (7) days of initial notification, <u>when such products are in Supplier stock.</u>	☐
1.2/ Attachment D, National IPA Requirements for Cooperative Contract, Exhibit A, page 3	Suppliers are required to pay an administrative fee of 3.0 % of the greater of the Contract Sales under the Master Agreement and Guaranteed Contract Sales under this Request for Proposal. Supplier will be required to execute the National IPA Administration Agreement (refer to Exhibit B).	CDW•G seeks the following alternate language: Suppliers are required to pay an administrative fee of 3.02 % (<u>Administrative Fee Percentage hereinafter defined</u>) of the greater of the Contract Sales under the Master Agreement and Guaranteed Contract Sales under this Request for Proposal. . . .	☐
2.2/ Attachment D, National IPA Requirements for Cooperative Contract, Exhibit B, page 5	Pricing Commitment Supplier commits the not-to-exceed pricing provided under the Master Agreement pricing is its lowest available (net to buyer) to Public Agencies nationwide and further commits that if a Participating Public Agency is eligible for lower pricing through a national, state, regional or local or cooperative contract, that the Supplier will match such lower pricing to that Participating Public Agency under the Master Agreement.	CDW•G seeks the following alternate language for this section: Supplier commits the not-to-exceed pricing provided under the Master Agreement pricing is its lowest available (net to buyer) to Public Agencies nationwide and further commits that if a Participating Public Agency is eligible for lower pricing through a national, state, regional or local or cooperative contract, that the Supplier will match such lower pricing to that Participating Public Agency under the Master Agreement.	☐
2.3/ Attachment D, National IPA Requirements for Cooperative Contract, Exhibit A, page 5	Sales Commitment Supplier commits to aggressively market the Master Agreement as its go to market strategy in this defined sector and that its sales force will be trained, engaged and committed to offering the Master Agreement to Public Agencies through National IPA nationwide. Supplier commits that all Master Agreement sales will be accurately and timely reported to National IPA in accordance with the National IPA Administration	CDW•G seeks the following alternate language for this first sentence: Supplier commits to aggressively market the Master Agreement as its go to market strategy in this defined sector and that its sales force will be trained, engaged and committed to offering the Master Agreement to Public Agencies through National IPA nationwide.	☐

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
	Agreement. Supplier also commits that its sales force will be compensated, including sales incentives, for sales to Public Agencies under the Master Agreement in a consistent or better manner compared to sales to Public Agencies if the Supplier were not awarded the Master Agreement.		
3.3. E / Attachment D, National IPA Requirements for Cooperative Contract, Exhibit A, page 7	E. Supplier is responsible for proactive direct sales of Supplier's goods and services to Public Agencies nationwide and the timely follow up to leads established by National IPA. All sales materials are to use the National IPA logo. At a minimum, the Supplier's sales initiatives should communicate: i. Master Agreement was competitively solicited and publicly awarded by a Principal Procurement Agency ii. Best government pricing iii. No cost to participate iv. Non-exclusive contract	CDW•G seeks the following alternate language: Supplier is responsible for proactive direct sales of Supplier's goods and services to Public Agencies nationwide and the timely follow up to leads established by National IPA. All sales materials are to use the National IPA logo. At a minimum, the Supplier's sales initiatives should communicate: i. Master Agreement was competitively solicited and publicly awarded by a Principal Procurement Agency ii. No cost to participate iii. Non-exclusive contract	
7 / Attachment D, National IPA Requirements for Cooperative Contract, Exhibit B, page 10	WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, NATIONAL IPA EXPRESSLY DISCLAIMS ALL EXPRESS OR IMPLIED REPRESENTATIONS AND WARRANTIES REGARDING NATIONAL IPA'S PERFORMANCE AS A CONTRACT ADMINISTRATOR OF THE MASTER AGREEMENT. NATIONAL IPA SHALL NOT BE LIABLE IN ANY WAY FOR ANY SPECIAL, INCIDENTAL, INDIRECT, CONSEQUENTIAL, EXEMPLARY, PUNITIVE, OR RELIANCE DAMAGES, EVEN IF NATIONAL IPA IS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.	CDW•G Seeks the following alternative language to replace existing language: Each Party ("Indemnifying Party") shall defend the other party and the other party's officers, directors and employees (each, an "Indemnified Party") from and against any claims, demands, actions, lawsuits, and proceedings asserted or made against the Indemnified Party (each, a "Claim") and shall indemnify and hold harmless the Indemnified Party from and against any loss, damage, cost, and expense (including reasonable attorneys' fees) finally awarded by a court of competent jurisdiction or included as part of a final settlement to the extent that the Claim is proximately caused by the gross negligence or willful misconduct of the Indemnifying Party during the performance of the Services and that the Claim arises either from an action brought by an unaffiliated third party for death or personal physical injury, or from damage to tangible personal property suffered or incurred by the Indemnified Party. Claims do not include any damages or liability that are otherwise excluded from this Agreement or that arise from the good(s) or software or from the data processed thereby. The obligation of the Indemnifying Party under this Section is	

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
		contingent upon the Indemnified Party providing the Indemnifying Party with: (i) sole authority in any Claim's defense or settlement; (ii) all reasonable assistance, at the Indemnifying Party's expense, in any such defense; and (iii) prompt written notice of and description of each Claim; provided, however, that the Indemnified Party's failure to provide prompt notice will relieve the Indemnifying Party of its obligations only if and to the extent that the Indemnifying Party is materially prejudiced by such delay. In no event shall the Indemnifying Party settle any Claim that involves a remedy other than the payment of money without the prior consent of the Indemnified Party. NEITHER CONTRACTOR, ITS AFFILIATES OR ITS OR THEIR SUPPLIERS, SUBCONTRACTORS OR AGENTS SHALL BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES. IN THE EVENT OF ANY LIABILITY INCURRED BY CONTRACTOR OR ANY OF ITS AFFILIATES HEREUNDER, THE ENTIRE LIABILITY OF CONTRACTOR AND ITS AFFILIATES FOR DAMAGES FROM ANY CAUSE WHATSOEVER WILL NOT EXCEED THE LESSER OF: (A) THE DOLLAR AMOUNT PAID BY CITY FOR EITHER THE SPECIFIC PURCHASED ITEM(S) GIVING RISE TO THE CLAIM; OR (B) \$1,000,000.00 OVER THE ENTIRE TERM OF THE AGREEMENT.	
12/ Attachment D, National IPA Requirements for Cooperative Contract, Exhibit B, page 11	An "Administrative Fee" shall be defined and due to National IPA from Supplier in the amount of __ percent (__) ("Administrative Fee Percentage") multiplied by the total purchase amount paid to Supplier, less refunds, credits on returns, rebates and discounts, for the sale of products and/or services to Principal Procurement Agency and Participating Public Agencies pursuant to the Master Agreement (as amended from time to time and including any renewal thereof) ("Contract Sales"). From time to time the parties may mutually agree in writing to a lower Administrative Fee Percentage for a specifically identified Participating Public	CDW•G Seeks the following alternative language to replace existing language: <u>All sales shall be subject to a</u> An "Administrative Fee" shall be defined and due to National IPA from Supplier in the amount of <u>two—</u> percent (—%)-(2%) , <u>except Software and Chromebook product categories which will incur no fee</u> ("Administrative Fee Percentage"), <u>—</u> , multiplied by the total purchase amount paid to Supplier, less refunds, credits on returns, rebates and discounts, for the sale of products and/or services to Principal Procurement Agency and Participating Public Agencies pursuant to the Master Agreement (as amended from time to time and including any renewal thereof) ("Contract Sales"). From time to time the parties may mutually agree in writing to a lower Administrative Fee Percentage for a specifically	

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
	Agency's Contract Sales.	identified Participating Public Agency's Contract Sales.	
13/ Attachment D, National IPA Requirements for Cooperative Contract, Exhibit B, page 12	13. Supplier shall provide National IPA with an electronic accounting report monthly, in the format prescribed by National IPA, summarizing all Contract Sales for each calendar month. The Contract Sales reporting format is provided as <u>Exhibit C</u> ("Contract Sales Report"), attached hereto and incorporated herein by reference. Contract Sales Reports for each calendar month shall be provided by Supplier to National IPA by the 10 th day of the following month. Failure to provide a Contract Sales Report within the time and manner specified herein shall constitute a material breach of this Agreement and if not cured within thirty (30) days of written notice to Supplier shall be deemed a cause for termination of the Master Agreement, at Principal Procurement Agency's sole discretion, and/or this Agreement, at National IPA's sole discretion	Due to the high volume of transactions anticipated on this program, CDW respectfully requests 15 business days to produce reporting and payment of any Administrative Fees, and therefore seeks the following alternative language to replace existing language: Supplier shall provide National IPA with an electronic accounting report monthly, in the format prescribed by National IPA, summarizing all Contract Sales for each calendar month. The Contract Sales reporting format is provided as Exhibit C ("Contract Sales Report"), attached hereto and incorporated herein by reference. Contract Sales Reports for each calendar month shall be provided by Supplier to National IPA by the 10th <u>15th business</u> day of the following month. . . .	
15/ Attachment D, National IPA Requirements for Cooperative Contract, Exhibit B, page 12	Supplier shall maintain an accounting of all purchases made by Participating Public Agencies under the Master Agreement. National IPA, or its designee, in National IPA's sole discretion, reserves the right to compare Participating Public Agency records with Contract Sales Reports submitted by Supplier for a period of four (4) years from the date National IPA receives such report. In addition, National IPA may engage a third party to conduct an independent audit of Supplier's monthly reports. In the event of such an audit, Supplier shall provide all materials reasonably requested relating to such audit by National IPA at the location designated by National IPA. In the event an underreporting of Contract Sales and a resulting underpayment of Administrative Fees is revealed,	CDW•G Seeks the following alternative language to replace existing language: Supplier shall maintain an accounting of all purchases made by Participating Public Agencies under the Master Agreement. National IPA, or its designee, in National IPA's sole discretion, reserves the right to compare Participating Public Agency records with Contract Sales Reports submitted by Supplier for a period of four (4) years from the date National IPA receives such report. <u>Auditing is solely for the purpose of verifying Supplier's compliance with this Agreement. The audit must be pursuant to a signed Supplier's Confidentiality Agreement. An audit can be done only once a year and no auditing can be done for the same time period more than once. No audit may be conducted for any period which begins more than twelve months prior to the date the audit is requested. Supplier is not required to keep original documents and copies of relevant documents will suffice for the purposes of this provision. The sole right for damages determined by the audit is</u>	

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
	National IPA will notify the Supplier in writing. Supplier will have thirty (30) days from the date of such notice to resolve the discrepancy to National IPA's reasonable satisfaction, including payment of any Administrative Fees due and owing, together with interest thereon in accordance with Section 13, and reimbursement of National IPA's costs and expenses related to such audit.	<u>limited to the actual discrepancies. The audit must be conducted during regular business hours at a mutually agreeable time and upon reasonable advanced notice.</u> In addition, National IPA may engage a third party to conduct an independent audit of Supplier's monthly reports. In the event of such an audit, Supplier shall provide all materials reasonably requested relating to such audit by National IPA at the location designated by National IPA Supplier . In the event an underreporting of Contract Sales and a resulting underpayment of Administrative Fees is revealed, National IPA will notify the Supplier in writing. Supplier will have thirty (30) days from the date of such notice to resolve the discrepancy to National IPA's reasonable satisfaction, including payment of any Administrative Fees due and owing, together with interest thereon in accordance with Section 13, and reimbursement of National IPA's costs and expenses related to such audit.	
16/ Attachment D, National IPA Requirements for Cooperative Contract, Exhibit B, page 12	This Agreement, the Master Agreement and the exhibits referenced herein supersede any and all other agreements, either oral or in writing, between the parties hereto with respect to the subject matter hereto and no other agreement, statement, or promise relating to the subject matter of this Agreement which is not contained or incorporated herein shall be valid or binding. In the event of any conflict between the provisions of this Agreement and the Master Agreement, as between National IPA and Supplier, the provisions of this Agreement shall prevail.	CDW•G Seeks the following alternative language to replace existing language: This Agreement, the Master Agreement and the exhibits referenced herein supersede any and all other agreements, either oral or in writing, between the parties hereto with respect to the subject matter hereto and no other agreement, statement, or promise relating to the subject matter of this Agreement which is not contained or incorporated herein shall be valid or binding. In the event of any conflict between the provisions of <u>the CSO (hereinafter defined)</u> , this Agreement, and the Master Agreement , as between National IPA and Supplier, the provisions of <u>the documents will control in the following order: the CSO, this Agreement, and the Master Agreement shall prevail.</u> <u>With regard to third party cloud computing and storage services, the Third Party Cloud Computing and Storage Services terms, as set forth in Attachment B shall govern. CDW Government LLC ("CDW") acts as a rebiller only and has no control over the delivery of the cloud computing and storage services.</u>	
10/ Attachment D, National IPA	WITHOUT LIMITING THE GENERALITY OF THE	CDW•G Seeks to add the following sentence to the end of this paragraph: Notwithstanding the	

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
Requirements for Cooperative Contract, Exhibit C, page 16	FOREGOING, THE NATIONAL IPA PARTIES EXPRESSLY DISCLAIM ALL EXPRESS OR IMPLIED REPRESENTATIONS AND WARRANTIES REGARDING ANY PRODUCT, MASTER AGREEMENT AND GPO CONTRACT. THE NATIONAL IPA PARTIES SHALL NOT BE LIABLE IN ANY WAY FOR ANY SPECIAL, INCIDENTAL, INDIRECT, CONSEQUENTIAL, EXEMPLARY, PUNITIVE, OR RELIANCE DAMAGES, EVEN IF THE NATIONAL IPA PARTIES ARE ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. FURTHER, THE PROCURING PARTY ACKNOWLEDGES AND AGREES THAT THE NATIONAL IPA PARTIES SHALL HAVE NO LIABILITY FOR ANY ACT OR OMISSION BY A SUPPLIER OR OTHER PARTY UNDER A MASTER AGREEMENT OR GPO CONTRACT.	foregoing, CDW Government LLC is not a party to this Agreement nor is it a third-party beneficiary thereto. <u>Furthermore, it is the express intent of the National IPA Parties that the Agreement shall not establish any third party beneficiaries or third party rights and that the Agreement shall only benefit the National IPA Parties (and the Affiliates thereof).</u>	
4/ Exhibit 1, Draft Agreement, City of Mesa Agreement Pursuant to Solicitation, page 25	In the event of any inconsistency between the terms of the body of the Agreement, the Exhibits, the Solicitation, and Response, the language of the documents will control in the following order: 1. Agreement (Master Agreement or City of Mesa Agreement Pursuant to Solicitation); 2. Exhibits: a. Mesa Standard Terms & Conditions (Exhibit C); b. National IPA Agreement (Exhibit D); c. Scope of Work (Exhibit A); d. Other Exhibits not listed above; 3. Solicitation including any addenda; and 4. Contractor Response	CDW•G Seeks the following alternative language to replace existing language: In the event of any inconsistency between the terms of the body of the Agreement, the Exhibits, the Solicitation, and Response, the language of the documents will control in the following order: 1. Contractor Response 2. Agreement (Master Agreement or City of Mesa Agreement Pursuant to Solicitation); 3. Exhibits: a. Mesa Standard Terms & Conditions (Exhibit C); b. National IPA Agreement (Exhibit D); c. Scope of Work (Exhibit A); d. Other Exhibits not listed above; 4. Solicitation including any addenda; and	
8/ Exhibit 1, Draft Agreement, City of Mesa Agreement Pursuant to	8. Requirements Contract. Contractor acknowledges and agrees the Agreement is a requirements contract; the Agreement does not guarantee any purchases will be made (minimum	CDW•G Seeks to add the following sentence to the end of this paragraph: For purposes of this Section, a “reasonable period of time” shall mean 24-48 hours after Supplier receives a purchase order.	

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
Solicitation, page 28	or maximum). Orders will only be placed when the City identifies a need and issues a purchase order or a written notice to proceed. The City reserves the right to cancel purchase orders or a notice to proceed within a reasonable period of time of issuance; any such cancellation will be in writing. Should a purchase order or notice to proceed be canceled, the City agrees to reimburse Contractor for any actual and documented costs incurred by Contractor. The City will not reimburse Contractor for any avoidable costs incurred after receipt of cancellation including, but not limited to, lost profits, shipment of product, or performance of services. The City reserves the right to purchase contracted items through other sources if determined in the best interests of the City to do so.		
9.c.iv/ Exhibit 1, Draft Agreement, Exhibit C, Mesa Terms & Conditions, page 33	The City may, at its sole discretion, conduct random verification of the employment records of Contractor and any subcontractor to ensure compliance with the Contractor Immigration Warranty. Contractor agrees to assist the City in regard to any random verification performed.	CDW•G Seeks to add the following sentence to the end of this paragraph: Notwithstanding the foregoing, any Contract audits must be pursuant to a signed Contractor's Confidentiality Agreement. An audit can be done only once a year and no auditing can be done for the same time period more than once. No audit may be conducted for any period which begins more than twelve months prior to the date the audit is requested. Contractor is not required to keep original documents and copies of relevant documents will suffice for the purposes of this provision. The sole right for damages determined by the audit is limited to the actual discrepancies. The audit must be conducted during regular business hours at a mutually agreeable time and upon reasonable advanced notice.	
13/ Exhibit 1, Draft Agreement, Exhibit C, Mesa Terms & Conditions, page 34	AUDITS AND RECORDS. Contractor must preserve the records related to this Agreement for six (6) years after completion of the Agreement. The City or its authorized agent reserves the right to inspect any records related to the performance of work specified herein. In addition, the City may inspect any and all payroll, billing or other relevant records kept by	CDW•G Seeks to add the additional language proposed in Section 9.c.iv above to the end of this paragraph.	

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
	Contractor in relation to the Agreement. Contractor will permit such inspections and audits during normal business hours and upon reasonable notice by the City. The audit of records may occur at Contractor's place of business or at City offices, as determined by the City		
24/ Exhibit 1, Draft Agreement, Exhibit C, Mesa Terms & Conditions, page 36	INDEMNIFICATION/LIABILITY. a. To the fullest extent permitted by law, Contractor agrees to defend, indemnify, and hold the City, its officers, agents, and employees, harmless from and against any and all third party liabilities, demands, claims, suits, losses, damages, causes of action, fines or judgments, including costs, attorneys', witnesses', and expert witnesses' fees, and expenses incident thereto, relating to, arising out of, or resulting from: (i) the services provided by Contractor personnel under this Agreement; (ii) any negligent acts, errors, mistakes or omissions by Contractor or Contractor personnel; and (iii) Contractor or Contractor personnel's failure to comply with or fulfill the obligations established by this Agreement. b. Contractor will update the City during the course of the litigation to timely notify the City of any issues that may involve the independent negligence of the City that is not covered by this indemnification. c. The City assumes no liability for actions of Contractor and will not indemnify or hold Contractor or any third party harmless for claims based on this Agreement or use of Contractor-provided supplies or services.	Notwithstanding what is stated in this section, CDWG proposes that the terms and conditions proposed above in Section 7 / Attachment D, National IPA Requirements for Cooperative Contract, Exhibit B, page 10.	
25/ Exhibit 1, Draft Agreement, Exhibit C, Mesa Terms & Conditions, page 36	WARRANTY. Contractor warrants that the services and materials will conform to the requirements of the Agreement. Additionally, Contractor warrants that all services will be performed in a good, workman-like and	CDW•G Seeks the following alternative language to replace existing language: The City understands that the Contractor is not the manufacturer of the products purchased by the City hereunder and the only warranties offered are those of the manufacturer, not the Contractor	

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
	professional manner. The City's acceptance of service or materials provided by Contractor will not relieve Contractor from its obligations under this warranty. If any materials or services are of a substandard or unsatisfactory manner as determined by the City, Contractor, at no additional charge to the City, will provide materials or redo such services until in accordance with this Agreement and to the City's reasonable satisfaction. Unless otherwise agreed, Contractor warrants that materials will be new, unused, of most current manufacture and not discontinued, will be free of defects in materials and workmanship, will be provided in accordance with manufacturer's standard warranty for at least one (1) year unless otherwise specified, and will perform in accordance with manufacturer's published specifications.	or its affiliates. In purchasing the products, the City is relying on the manufacturer's specifications only and is not relying on any statements, specifications, photographs or other illustrations representing the products that may be provided by the Contractor or its affiliates. THE CONTRACTOR AND ITS AFFILIATES HEREBY EXPRESSLY DISCLAIM ALL WARRANTIES EITHER EXPRESS OR IMPLIED, RELATED TO PRODUCTS, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF TITLE, ACCURACY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WARRANTY OF NONINFRINGEMENT, OR ANY WARRANTY RELATING TO THIRD PARTY SERVICES. THE DISCLAIMER CONTAINED IN THIS PARAGRAPH DOES NOT AFFECT THE TERMS OF ANY MANUFACTURER'S WARRANTY. The City expressly waives any claim that it may have against the Contractor or its affiliates based on any product liability or infringement or alleged infringement of any patent, copyright, trade secret or other intellectual property rights (each a "Claim") with respect to any product and also waives any right to indemnification from the Contractor or its affiliates against any such Claim made against the City by a third party. The City acknowledges that no employee of the Contractor or its affiliates is authorized to make any representation or warranty on behalf of the Contractor or any of its affiliates that is not in this Contract. In connection with the products, certain services, such as extended warranty service by manufacturers, are sold by the Contractor as a distributor or sales agent ("Third Party Services"). In the case of Third Party Services, the third party will be the party responsible for providing the services to the City and the City will look solely to the third party for any loss, claims or damages arising from or related to the provision of such Third Party Services. The City hereby releases the Contractor and its affiliates from any and all claims arising from or relating to the purchase or provision of any such Third Party Services. Any amounts, including, but not limited to, taxes, associated with Third Party Services which may be collected by the Contractor will be collected	

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
		solely in the capacity as an independent sales agent. If in connection with the provision of products, the City desires to have the Contractor provide installation of custom software images, the City will be required to execute an Installation Indemnity Agreement, a form of which is provided at http://www.cdw.com/forms/indemnity/app.asp.	
32/ Exhibit 1, Draft Agreement, Exhibit C, Mesa Terms & Conditions, page 37	RISK OF LOSS. Contractor agrees to bear all risks of loss, injury, or destruction of goods or equipment incidental to providing these services and such loss, injury, or destruction will not release Contractor from any obligation hereunder.	CDW•G seeks the following alternate language for this section: Title to Products and risk of loss or damage during shipment pass from Contractor to City upon delivery to the destination specified on the applicable purchase order (F.O.B. Destination, freight prepaid and added).	

Exceptions			
Section/Page	Term, Condition, or Specification	Exception/Deviation	City Accepts
35/Exhibit 1, Draft Agreement, Exhibit C, Mesa Terms & Conditions, page 37	PROPRIETARY RIGHTS INDEMNIFICATION. Without limiting the foregoing, Contractor will without limitation, at its expense defend the City against all claims asserted by any person that anything provided by Contractor infringes a patent, copyright, trade secret or other intellectual property right and must, without limitation, pay the costs, damages and attorneys' fees awarded against the City in any such action, or pay any settlement of such action or claim. Each party agrees to notify the other promptly of any matters to which this provision may apply and to cooperate with each other in connection with such defense or settlement. If a preliminary or final judgment is obtained against the City's use or operation of the items provided by Contractor hereunder or any part thereof by reason of any alleged infringement, Contractor will, at its expense and without limitation, either: (a) modify the item so that it becomes non-infringing; (b) procure for the City the right to continue to use the item; (c) substitute for the infringing item other item(s) having at least equivalent capability; or (d) refund to the City an amount equal to the price paid, less reasonable usage, from the time of installation acceptance through cessation of use, which amount will be calculated on a useful life not less than five (5) years, plus any additional costs the City may incur to acquire substitute supplies or services.	The City's sole rights to the work product, materials and other deliverables to be provided or created (individually or jointly) in connection with the services, including but not limited to, all inventions, discoveries, methods, processes, formulae, ideas, concepts, techniques, know-how, data, designs, models, prototypes, works of authorship, computer programs, proprietary tools, methods of analysis and other information (whether or not capable of protection by patent, copyright, trade secret, confidentiality, or other proprietary rights) or discovered in the course of performance of this Contract that are embodied in such work or materials ("Work Product") will be, upon payment in full, a non-transferable, non-exclusive, royalty-free license to use such Work Product solely for the City's internal use. The City will have no ownership or other property rights thereto, and the City shall have no right to use any such Work Product for any other purpose whatsoever. The City acknowledges that the Contractor may incorporate intellectual property created by third parties into the Work Product ("Third Party Intellectual Property"). The City agrees that its right to use Work Product containing Third Party Intellectual Property may be subject to the rights of third parties and limited by agreements with such third parties.	



Confidential Information

The following parts of our response are exempt from public disclosure. Subject to applicable state law, we request that the information detailed below be treated as confidential.

Exemptions from Public Disclosure Confidential Information		
Page	Lines	Reasoning
Tab #2 Pages 23-24	Page #: Requirement #4, p. 23 -24 Starting at "CDW-G's Supplier" Page #: p. 23 (Requirement #4) Ending at "Reporting Capabilities," p. 24	Per Arizona Revised Statutes § 44-405, the following information is confidential and proprietary and it might contain trade secrets therefore not subject to disclosure in case there is a request.

GENERAL QUESTIONNAIRE

1. Compliance with Applicable Laws. Respondent complies with Exhibit 1, Draft Agreement, Exhibit C, Mesa Standard Terms & Conditions, 9. "Compliance with Applicable Laws"? ☒ Yes ☐ No
2. Delivery. Delivery, as stated in Detailed Specifications, can be met. ☒ Yes ☐ No
If no, specify number of days for delivery _____
3. Payment terms. Payment Due (Not less than net 30 days): 30 days
Payment Discount of _____% if invoices are paid within _____ days of receipt.
4. Procurement Card. Does Respondent allow payment of invoices using a Procurement Card?
☒ Yes ☐ No (Marking a "no" answer will not disqualify your Response.)
Discount for Procurement Card Purchases? _____%
5. Cooperative Purchasing. The use of this Agreement as a cooperative purchasing agreement available to other governmental agencies is described in the Mesa Standard Terms and Conditions. The use of this Agreement as a cooperative purchasing agreement is subject to approval by the Respondent as designated below.
6. Does Respondent agree to extend the prices, terms and conditions of the Agreement to other agencies as specified in the Standard Terms and Conditions?
☒ Yes ☐ No (Marking a "no" answer will not disqualify your Response.)

Addenda.

Respondents are responsible for verifying receipt of any addenda issued by checking the City's website at www.mesaaz.gov/business/purchasing or the Vendor Self Service portal prior to the Response Due date and time. Failure to acknowledge any addenda issued may result in a response being deemed non-responsive. Failure to review addenda does not negate Respondent's initial offer and holds Respondent for any changes prior to Response Due date and time.

Acknowledgement of Receipt and Consideration of Addenda (if applicable):

Addenda # 1 ☒ 2 ☒ 3 ☐ 4 ☐

LAWFUL PRESENCE AFFIDAVIT

☒ **CHECK HERE AND SKIP THIS AFFIDAVIT IF:** Respondent is an **LLC, a Corporation or a Partnership** as indicated on your W-9. (Please include a copy of your W-9)

COMPLETE THIS AFFIDAVIT IF: Respondent is an **Individual (Natural Person) or a Sole Proprietor** as indicated on your W-9. (Please include a copy of your W-9)

ARS § 1-502 requires any person who applies to the City for a Local Public Benefit (defined as a Grant, Contract or Loan) must demonstrate through the presentation of one (1) of the following documents that he/she is lawfully present in the United States (See the Solicitation Instructions for more information).

Please place a check mark next to the applicable document and present the document to the City employee. If mailing the response, attach a copy of the document to this Affidavit. (If the document says on its face that it may not be copied or you know for reasons of confidentiality that it cannot be copied, you will need to present the document in person to the City for review and signing of the affidavit.)

- ☐ 1. **Arizona driver license issued after 1996.**
Print first 4 numbers/letters from license: _____
- ☐ 2. **Arizona non-operating identification license.**
Print first 4 numbers/letters: _____
- ☐ 3. **Birth certificate or delayed birth certificate issued in any state, territory or possession of the United States.**
Year of birth: _____ Place of birth: _____
- ☐ 4. **United States Certificate of Birth abroad.**
Year of birth: _____ Place of birth: _____
- ☐ 5. **United States passport.**
Print first 4 numbers/letters on Passport: _____
- ☐ 6. **Foreign passport with a United States Visa.**
Print first 4 numbers/letters on Passport: _____
Print first 4 numbers/letters on Visa: _____
- ☐ 7. **I-94 form with a photograph.**
Print first 4 numbers on I-94: _____
- ☐ 8. **United States Citizenship & Immigration Services Employment Authorization Document (EAD).**
Print first 4 numbers/letters on EAD: _____
- ☐ 9. **Refugee travel document.**
Date of Issuance: _____ Refugee Country: _____
- ☐ 10. **United States Certificate of Naturalization.**
Print first 4 digits of CIS Reg. No.: _____
- ☐ 11. **United States Certificate of Citizenship.**
Date of Issuance: _____ Place of Issuance: _____
- ☐ 12. **Tribal Certificate of Indian Blood.**
Date of Issuance: _____ Name of Tribe: _____
- ☐ 13. **Tribal or Bureau of Indian Affairs Affidavit of Birth.**
Year of Birth: _____ Place of Birth: _____

In accordance with the requirements of Arizona law, I do swear or affirm under penalty of perjury that I am lawfully present in the United States and that the document I presented to establish this presence is true.



Signature

Christina V. Rother

Print Name

10/17/17

Date

CDW Government LLC

Business/Company Name

Verification of Attachment by City Staff:

Signature Date

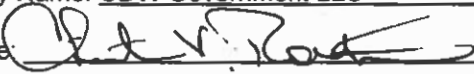
RESPONDENT CERTIFICATION

By submitting the Response and signing this Certification, the Respondent understands and certifies to all of the following:

- a) The information provided in Respondent's Response is true and accurate to the best of Respondent's knowledge.
- b) Respondent is under no legal prohibition that would prevent Respondent from contracting with the City of Mesa.
- c) Respondent has read and understands the Solicitation packet as a whole (including attachments, exhibits, and referenced documents) and: (i) can attest that Respondent is in compliance with the requirements of the Solicitation packet; and (ii) is capable of fully carrying out the requirements of the Solicitation as set forth in Respondent's Response.
- d) To Respondent's knowledge, Respondent and Respondent's employees have no known, undisclosed conflicts of interest as defined by applicable law or City of Mesa Procurement Rules. If Respondent or Respondent employees have a known conflict of interest, Respondent has disclosed the conflict in its Response.
- e) Respondent did not engage in any anti-competitive practices related to its Response or the Solicitation. The prices offered by Respondent were independently developed without consultation or collusion with any other Respondents or potential Respondents.
- f) No gifts, payments or other consideration were made to any City employee, officer, elected official, agent, or consultant who has or may have a role in the procurement process for the services/materials covered by the Solicitation.
- g) Respondent grants the City of Mesa permission to copy all parts of its Response including, without limitation, any documents and materials copyrighted by Respondent: (i) for the City's use in evaluating the Response; and (ii) to be disclosed in response to a public records request under Arizona's public records law (A.R.S. § 39-121 et. seq.) or other applicable law, subpoena, or other judicial process provided such disclosure is in accordance with City of Mesa Procurement Rule 6.13.
- h) If a contract is awarded to Respondent as a result of the Response submitted to the Solicitation Respondent will:
 - i. Provide the materials or services specified in the Response in compliance with all applicable federal, state, and local statutes, rules and policies;
 - ii. Honor all elements of the Response submitted by Respondent to the City including, but not limited to, the price and the materials/services to be provided; and
 - iii. Enter into an agreement with the City based on the terms and conditions of the Solicitation and the Response, subject to any negotiated exceptions and terms.
- i) Respondent is current in all obligations due to the City including any amounts owed the City and any licenses/permits required for the general lawful conduct of business. Respondent shall acquire all licenses/permits necessary to lawfully conduct business specific to the Solicitation prior to the execution of a contract with the City pertaining to the Solicitation.
- j) The signatory of this Certification is an officer or duly authorized agent of Respondent with full power and authority to submit binding offers for the goods/services specified herein. Respondent intends by the submission of this Certification to be bound by the terms of the Certification, Solicitation, and Response, subject to any negotiated terms/exceptions.

ACCEPTED AND AGREED TO BY RESPONDENT:

Company Name: CDW Government LLC

Signature: 

Printed Name: Christina V. Rother

Title: President, CDW•G

Date: 10/17/17

ATTACHMENT C
RESPONDENT QUESTIONNAIRE

Respondent Company Name/ DBA: CDW Government LLC	
Years in business providing similar services: 33 years	
Contractor's License No(s): N/A Type: (Submit a copy with the Response)	
Number of employees at location that would serve under a contract from the Solicitation: N/A	
Provide names, contact and telephone numbers of three (3) organizations that have received similar services from your company. At least one reference should be comparable in size to the City's proposed contract.	
Firm/Government Agency Name: Kern High School District- Business Services	
Contact Person: Sandy Castorena	Phone: 661-827-3321
Address: 5801 Sundale Avenue Bakersfield, CA 93309	Fax:
	E-Mail Address: Sandy_Castorena@kernhigh.org
\$ Value of Work, Supplies/Services and Dates Provided: CDW•G respects the privacy of our customers and therefore cannot disclose the value of the work, supplies/services provided. Dates provided: 2014-today.	
Firm/Government Agency Name: Culpeper School District	
Contact Person: Maria Weiss	Phone: 540-829-2120
Address: 450 Radio Lane Culpeper, VA 22701-1521	Fax:
	E-Mail Address: mweiss@culpeperschools.org
\$ Value of Work, Supplies/Services and Dates Provided: CDW•G respects the privacy of our customers and therefore cannot disclose the value of the work, supplies/services provided. Dates provided- 2005-today	
Firm/Government Agency Name: Los Angeles Superior Court	
Contact Person: Rachel Cavazos	Phone: 213-633-0136
Address: 111 North Hill Street, RM 105D Los Angeles, CA 90012-3219	Fax:
	E-Mail Address: RCavazos@lacourt.org
\$ Value of Work, Supplies/Services and Dates Provided: CDW•G respects the privacy of our customers and therefore cannot disclose the value of the work, supplies/services provided. Dates provided- 2005-today	
List any other information which may be helpful in determining your qualifications for a potential contract:	



75 Tri-State International
Lincolnshire, IL 60069

CDW.com

January 1, 2017

To CDW Government LLC Customers:

CDW Government LLC is your supplier/vendor. CDW Government LLC's FEIN is 36-4230110. This is the number displayed on our invoices.

CDW Government LLC is treated as a disregarded entity for federal income tax purposes. The Internal Revenue Service requires the W-9 to be completed by an entity that is not a disregarded entity for federal tax purposes. For CDW Government LLC, that entity is the parent corporation, CDW LLC, FEIN 36-3310735. Consequently, CDW Government LLC's W-9 lists CDW LLC as the "Name (as shown on the income tax return)" and the "Business name" as CDW Government LLC.

The address on our W-9, (230 N. Milwaukee Ave. Vernon Hills, IL 60061), is our mailing address registered with the IRS. CDW Government LLC requests your payments to be mailed to another address, (75 Remittance Dr, Suite 1515, Chicago, IL 60675). This is merely for payment processing and is not a CDW Government LLC physical location.

We apologize for any confusion our organizational structure may cause you; however, we have completed the W-9 as required by the Internal Revenue Service.

Please feel free to contact us at taxteam@cdw.com should you have any questions or require additional documentation.

Thank you,

CDW Tax Department

Tab 7

Appendix

Mark A. Ellis

Work Experience CDW•G

CDW•G Manager, Program Management

October 2016 - Present

- Manages a team of 15 people responsible for State & Local, Higher Education and K-12 Contracts
- Responsible for Program Manager deliverables below as well as signature authority on behalf of the Program Management team

CDW•G Program Manager

March 2005 – September 2016

- Manages a contract portfolio and team that includes; Healthcare, Higher Education, K-12 and State & Local Segments.
- Provides Program Management support for contract vehicles to ensure compliance, minimize risk, and maximize contract revenue and profitability.
- Manages and develops direct reports to include: Deputy Program Managers and Contract Analyst.
- Responsible for a full range of contracts which face customers and/or partners (E.g., Master Purchase Agreements, Subcontractor Agreements, Stretch Agreements, and others.)
- Initiates and responds to requests for contract changes, product substitutions and/or technical refreshments.
- Drafts or reviews completed drafts of appropriate amendments and other contract documents throughout the contract life-cycle.
- Facilitates preliminary dispute resolution and coordinates with the CDW Legal department as necessary, to maintain customer satisfaction and bring prompt closure to certain contract disputes.
- Takes hands-on, developmental roles in all facets of proposal development, making bid/no-bid suggestions/determinations.
- Ensured contract deliverables reports are prepared, keeps abreast of contractual terms and conditions.
- Managed contracts to ensure maximum contract revenue and profitability
- Made contract modifications including price reductions, additions, discontinued products, replacements as well as version changes.
- Ensured price and supply agreements are in place from award through completion.
- Ensured that CDW•G is in compliance with government regulations, as applicable.

CDW•G Proposal Specialist

March 2003 – March 2005

- Delegated tasks among account managers, sales managers, systems engineers, field reps, vendors, service partners etc. throughout the proposal process.
- Analyzed RFPs and document potential gains, liabilities, terms and conditions
- Prepared a written response, articulating company capabilities, thoroughly addressing explicit and implicit customer needs.
- Crafted professionally written responses to proposal documents that specifically address customer requirements while positioning CDW•G for success
- Managed proposal schedule to meet deadlines
- Researched the customer to understand their environment, politics, limitations, hot points and other factors that will translate to a response that wins
- Reviewed and flags Proposal Documents for opportunities, liabilities, terms and conditions
- Reviewed responses for compliance, accuracy, content and impact to business; participates in review sessions with teammates to ensure the integrity of all documents and solutions
- Oversaw completion of pricing and non-cost items in the cost proposal, such as representations and certifications

CDW•G Account Manager

October 2001 – March 2003

- Handled and grew account portfolio that included all SLED customers in CDW•G Ohio Valley
- Served as lead Account Manager for Warren County, Ohio a \$1.7M account per year

Education

Indiana University - Bloomington

Bachelor of Arts – History

Minor – Business

Major Projects

CDW Emerging Leaders Program Participant

October 2015 – July 2016

- Participated and won the 2015-2016 Emerging Leaders Program with my team where we covered how we can better serve our CDW customers by providing a better experience with DCS Services.
- Worked with 4 other people, all in different locations collaborating on our goal of delivering a presentation to CDW's Executives on our final solution.

Patrick T. O'Brien

Education University of Illinois 1990-1995

Bachelor of Science – Sports Management

Florida Gulf Coast University 1997

Secondary Education Mathematics Accreditation

Work Experience CDW•G Vernon Hills, IL 2001-Present

Field Sales Manager, Government 2014-Present

- Responsible for customer relationships, territory strategy, partner alignment, and Coworker Development for all State and Local Field Sellers in Eastern US.
- Assist in developing short- and long-term performance goals, strategic direction, and business initiatives of our East State and Local Sales Team.

Regional Sales Manager, Government 2007-2014

- Driving force in successful awards to CDW•G of several state contracts including Ohio, Florida, and California.
- Manage a team of State and Local account managers in the Pacific region
- Responsible for Government sales across all technologies in the region
- Work with account managers to ensure customers are being properly serviced

Strategic Accounts Sales Manager, Healthcare 2006-2007

- Founding member of CDW Healthcare Division
- Lead Subject Matter Expert for contract proposal resulting in then largest contract in company history
- Responsible for developing, coaching, and supervising National Field and Inside Sales Staff

Sales Manager, Education 2004-2006

- Driving force in regionalization of Education sales team.
- Consistently managed highest percent of goal sales team in the division.

Account Manager, Government & Education 2001-2004

- Assisted in the development of new Account Managers
- Focused on helping customers with their technology purchases
- Focused on building relationships with customers to ensure they met their technology goals
- Developed new relationships within existing customers to bring them the value and benefits of CDW

CDW PRODUCT RETURN POLICY

Seller offers a 30-day return policy on most products sold. Manufacturer restrictions apply to certain merchandise, as detailed below and as updated from time to time. Customer may obtain additional details and any applicable updates from the dedicated Seller account manager and may obtain manufacturer contact information by contacting CDW Customer Relations, which may be reached by calling 866.SVC.4CDW or by emailing returns@cdw.com.

1. Return Restrictions.

- Defective Product Returns. Customer may return most *defective* Products directly to Seller within fifteen (15) days of invoice date and receive, at Seller's option, credit, replacement, exchange, or repair. After fifteen (15) days, only the manufacturer warranty applies.
- Non-Defective Product Returns. Customer may return most *non-defective* Products directly to Seller within thirty (30) days of invoice date and receive, at Customer's option, credit or exchange, except that an automatic Seller restocking charge will reduce the value of any such credit or exchange by a minimum of fifteen percent (15%).
- Restricted, Repair-Only Returns. Certain Products can only be returned for repair—not for exchange, replacement or credit—based on current manufacturer requirements. Such Products should be returned to Seller, shipped directly to the manufacturer, or taken to an authorized service center in Customer's vicinity. More information may be provided by the dedicated Seller account manager or by CDW Customer Relations.
- Restricted, Manufacturer-Only Assistance. Certain Products cannot be returned to Seller for any reason—without exception—and Customer must contact the manufacturer directly for any needed assistance. More information may be provided by the dedicated Seller account manager or by CDW Customer Relations.
- Special Orders. Products that are specially ordered may be non-returnable or may have unique return restrictions provided at the time of sale. More information may be provided by the dedicated Seller account manager or by CDW Customer Relations.

- Return of Software or DVDs. Seller offers refunds only for unopened, undamaged software and DVD movies that are returned within 30 days of invoice date. Seller offers *only replacement* for software products and DVD movies that either: (i) are defective but are returned *within* thirty (30) days of invoice date; or (ii) are unopened and undamaged, but are returned *more than* 30 days after invoice date; such replaceable merchandise may be exchanged only for the same software or DVD movie title. Multiple software licenses may be returned for refund or exchange *only* (i) if specifically authorized in advance by the manufacturer; *and* (ii) if returned *within* thirty (30) days of invoice date.

2. Customer Shipment of Returned Merchandise.

- Return Merchandise Authorization (RMA) Number. No returns of any type will be accepted by Seller unless accompanied by a unique RMA number, which Customer may obtain by providing the following information to CDW Customer Relations: customer name, applicable invoice number, product serial number, and details of Customer's issue with the product. Customer has five (5) days to return a Product after the applicable RMA is issued. CDW reserves the right to refuse any UNAUTHORIZED returns: those that occur after the five (5) day period or those involving Products that are unaccompanied by valid RMA's.
- Returned Products Must Be Complete. All Products *MUST BE* returned one hundred percent (100%) complete, including all original boxes, packing materials, manuals, blank warranty cards, and other accessories provided by the manufacturer. CDW reserves the right to refuse the return of incomplete Products. In addition, CDW will charge a minimum fifteen percent (15%) restocking fee for returns that are accepted.
- Responsibility for Shipping Costs. Customer is responsible for the cost of shipping returned items; Seller is responsible for the cost of shipping replacements or exchanges of returned items and will match Customer's shipping method.
- Customer Shipping Insurance. Customer is strongly advised to purchase full insurance to cover loss and damage in transit for shipments of returned items and to use a carrier and shipping method that provide proof of delivery. Seller is not responsible for loss during such shipment.

3. Merchandise Damaged in Transit.

- Refusal/Receipt of Damaged Products. If a package containing items purchased from Seller arrives at Customer's address *DAMAGED*, Customer should *REFUSE* to accept delivery from the carrier. If Customer *does* accept delivery of such a package, Customer must: (i) note the damage on the carrier's delivery record so that Seller may file a claim; (ii) save, as is, the merchandise *AND* the original box and packaging it arrived in; and (iii) promptly notify Seller either by calling CDW Customer Relations or by contacting the Seller account manager to arrange for carrier's inspection and pickup of the damaged merchandise. If Customer does not so note the damage and save the received merchandise and does not so notify Seller within fifteen (15) days of delivery acceptance, Customer will be deemed to have accepted the merchandise as if it had arrived undamaged, and Seller's regular return policy, as described in sections 1 and 2 above, and all current manufacturer warranties and restrictions will apply.

4. Credits

Any credit issued by Seller to Customer under this return policy must be used within two (2) years from the date that the credit was issued and may only be used for future purchases of Product and/or Services. Any credit or portion thereof not used within the two (2) year period will automatically expire.





COUNCIL COMMUNICATION

CC #: 0867
File #: 0800-05

Title: ProofID Software Configuration and Support Services - Professional Services Agreement Amendment
Contact: Pete McLemore 916-774-5431 pmclemore@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.7.

RECOMMENDATION TO COUNCIL

Recommend Council adopt a resolution to approve a First Amendment to Professional Services Agreement with PEGRight, Inc., dba ProofID, to move forward with the Single Sign-On (SSO) and Multi-Factor Authentication (MFA) project which is needed to ensure the City can work in a safe and secure manner.

BACKGROUND

SSO and MFA provide services that will greatly impact the City and the ability to ensure proper security measures are being taken while also improving user experience. SSO provides the ability for someone to sign-in once and then have access to other applications without the need to sign-in again; this helps users by decreasing the number of passwords needed for various systems and applications. MFA provides added security around accounts by requiring people to authenticate with a second factor, via app or phone call, after entering their credentials to ensure security. This functionality has already been deployed for Office 365 (Outlook, SharePoint, etc.) and Citrix; and is currently being tested for Oracle ERP and Global Protect - Virtual Private Network (VPN) connection.

FISCAL IMPACT

This will be a one-time purchase of \$8,000 for additional support hours utilizing the purchasing contract we have in place with PEGRight, Inc, dba ProofID, funded by the IT Operations Fund budget.

ENVIRONMENTAL REVIEW

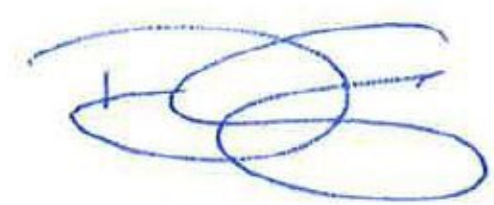
The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines

§15060(c)(3) and §15378. An amendment to a professional services agreement meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Pete McLemore, IT-Business Systems Analyst

Hong Sae, Chief Information Officer



Dominick Casey, City Manager

ATTACHMENTS:

Description

Resolution No. 20-265

Signed PSA Amendment

Statement of Work

RESOLUTION NO. 20-265

APPROVING A FIRST AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT, BY
AND BETWEEN THE CITY OF ROSEVILLE AND PEGRIGHT, INC. DBA PROOFID, AND
AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF
THE CITY OF ROSEVILLE

WHEREAS, a first amendment to professional services agreement for ProofID software configuration and support services, by and between the City of Roseville and PEGRight, Inc. dba ProofID, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said first amendment is hereby approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**FIRST AMENDMENT TO
PROFESSIONAL SERVICES AGREEMENT**

ProofID Software Configuration and Support Services

THIS FIRST AMENDMENT TO AGREEMENT is made and entered into this 27 day of June, 2020, by and between the City of Roseville, a municipal corporation ("CITY"), and PEGRight, Inc. dba ProofID, a Colorado corporation ("CONSULTANT"); and

W I T N E S S E T H:

WHEREAS, CITY and CONSULTANT previously entered into a Professional Services Agreement dated July 10, 2019 ("Agreement") regarding ProofID software configuration and support services ("Project"); and

WHEREAS, CITY desires to amend the Agreement to include additional services as described in CONSULTANT's letter/proposal dated April 27, 2020, which is attached hereto as Exhibit "A-2" and incorporated herein by reference; and

WHEREAS, CONSULTANT is willing and able to provide such additional services.

NOW, THEREFORE, the parties agree as follows:

1. CONSULTANT shall provide additional services as described in Exhibit "A-2" of this First Amendment to Agreement.
2. Section 2 of the Agreement is amended by adding an additional paragraph to read as follows:

"CITY shall pay eight thousand dollars (\$8,000), in consideration of the additional services as set forth in Exhibit "A-2" to the First Amendment to Agreement. This brings the total not to exceed contract amount to forty thousand, eight hundred and ten dollars (\$40,810)."

3. All other provisions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this First Amendment to Agreement in duplicate by its City Manager and attested to by its City Clerk under the authority of Resolution No. _____, adopted by the Council of the City of Roseville on the ____ day of _____, 20____, and CONSULTANT has caused this First Amendment to Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation

PEGRIGHT, INC. dba PROOFID, a
Colorado corporation

BY: _____
DOMINICK CASEY
City Manager

BY:  _____
its: Vice President

ATTEST:

and

BY: _____
SONIA OROZCO
City Clerk

BY:  _____
its: Treasurer

[SIGNATURES CONTINUED ON FOLLOWING PAGE]

APPROVED AS TO FORM:

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:


BY: _____
HONG SAE
Chief Information Officer

EXHIBIT "A-2"

Exhibit A-2

Statement of Work ("SOW")

This Statement of Work ("**SOW**") is executed under the terms and conditions of Independent Contractor Agreement dated June 19, 2019 (the "**Agreement**") between PEGRight, Inc. dba ProofID ("**Company**") and City of Roseville ("**Client**"). Company and Client may be referred to individually as a "**Party**" and collectively as the "**Parties**". This SOW describes the Services and Deliverables to be performed and provided by Company to Client. In the event of any conflict or inconsistency between the terms of this SOW and the terms of the Agreement, the terms of this SOW shall govern and prevail. This SOW is effective as of April 27, 2020 ("**Effective Date**").

1. Company Contact

Cody Cook, Director Professional Services
1755 Telstar Drive, Suite 206
Colorado Springs, CO 80920
Telephone Number: (719) 310-7124
E-mail address: cody.cook@pegright.com

2. Customer Contact

Pete McLemore
316 Vernon Street
Roseville, CA 95678
Telephone Number: (916) 774-5431
Email: pmclemore@roseville.ca.us

3. Scope

3.1. Overview

This SOW is focused on providing support to the Customer IAM Team as part of their IAM Modernization effort, specifically supporting the PingFederate product. This SOW outlines the activities and parameters for the engagement.

3.2. Description of Services

Company will provide engineering labor hours to the Client in order to perform Services within the Not-To-Exceed (NTE) resource hours and cost specified in Section 6 of this SOW. Services are related to development and delivery of the following:

- **Service #1: Ping Identity Product Integration Support**

Provide engineering labor to act as an extension of the Customer IAM Team, assisting the team with their IAM and Ping Identity product implementation project, specifically the PingFederate product. Tasking for the work will be provided by the Customer Contact. Support can be requested by email or telephone. Contractor and Customer will determine schedule, milestones, and deliverables for each requested support task, which will be confirmed via email.

3.3. Description of Deliverables

The following is the list of Deliverables that will be provided by Company to Client pursuant to this SOW.

None

3.4. Project Prerequisites

The following project prerequisites and/or dependencies must be completed by Customer prior to project kickoff.

- Create/Maintain appropriate accounts for Company consultants with remote VPN access
- Provide appropriate privileged access to Company consultants upon Ping Identity product servers including PingOne instance

3.5. Project Assumptions

The following assumptions were made to create this SOW. Should any of these project assumptions prove to be incorrect or incomplete, then the Parties may modify the Fees and Terms, Scope, and/or Period of Performance by mutual agreement. Should any of these project assumptions not be provided in a timely manner, then the Parties may modify the Fees and Terms, Scope, and/or Period of Performance. Timely is defined as a reasonable amount of time for a service request to be completed, e.g. five (5) working days from the time of a reasonable request by a Party or from a date agreed upon in writing, such as in a project plan signed by both Parties.

- It is assumed that Client will provide and coordinate access to necessary staff in order to complete the Services and Deliverables defined within this SOW.
- It is assumed that Company will perform Services remotely and that Client will provide high-speed remote access to Company for hardware and software resources required to complete the Services and Deliverables defined within this SOW.
- It is assumed that any existing issues that would preclude successful implementation, whether performance or functional, are disclosed and are not included in the scope of this Description of Services.
- It is assumed all environments required for completion of this work effort are stable, consistent, and accessible.
- It is assumed that Client will own and manage all change management and communications efforts required for this implementation and rollout.
- It is assumed that Client will provide test accounts to Company for testing PingFederate SAML-based SSO to applications

3.6. Project Out of Scope Items

The following items are considered out of scope for the project:

- Dev-Ops activities or development of any custom deployment automation software
- Configuration/support/etc. of any Ops user management tools
- Formal Ping Identity product training
- Development/execution of automated testing scripts
- Custom development
- Implementation of any Ping Identity product outside of PingFederate
- Outbound Provisioning for any Service Provider Connections

4. Acceptance Procedure

Each Deliverable, as defined in this SOW, will be approved in accordance with the following procedure:

- a. Within five (5) business days, Client will either accept the Deliverable or provide the Company Project Manager a written list of requested changes. If no written response (either accepting or requesting changes) is received from Client within five (5) business days, the Deliverable shall be deemed accepted;
- b. If a written list of requested changes is received within five (5) business days,

Company will make the agreed upon revisions in order to satisfy requirements based upon the scope of the Services, Deliverables, and the Acceptance Criteria, and Company will, within five (5) business days, re-submit the updated version to Client;

- c. At that time, Client has five (5) business days to review and request changes for the final Deliverable. If no written response (either accepting or requesting changes) is received from Client within five (5) business days, the Deliverable shall be deemed accepted. Upon acceptance of the final Deliverable from Company to the Client, the Client accepts responsibility for the final Deliverable such that the Company Warranty Period is complete. The Warranty Period is defined as the period of time from when a Deliverable is provided to the Client for review until acceptance of the final Deliverable, based on the Acceptance Criteria, by the Client.

5. Period of Performance

This agreement shall expire as of April 6, 2021.

6. Fees and Terms

Contract Type: Time and Materials

Company will provide "best effort," consistent with all assumptions being satisfied toward providing the Services and Deliverables defined in the SOW within the *not to exceed* (NTE) cost specified in the table below. In the event Company reasonably anticipates that the NTE will be exceeded, it shall provide notice thereof to Client as far in advance as reasonably practicable and shall not exceed the NTE without Client's written authorization. For the avoidance of doubt, the NTE cost below shall not be construed as a minimum payment requirement.

Project Role	Rate	Hours	Cost
Solutions Engineer	USD 200.00	40	USD 8,000.00
TOTAL			USD 8,000.00

Company will assign only duly qualified persons to the Project who have the skills and experience commensurate with their respective role in the process.

If Client requests additional effort that requires additional labor hours, whether to complete Services and Deliverables defined in the SOW, or to add additional Services and Deliverables, then Company and the Client will define the labor rate and estimated number of labor hours via a supplemental agreement in the form of a Change Order consistent with this SOW.

6.1. Working Hours

Company resources will work normal business hours (8am to 5pm, Monday to Friday). For onsite activities this will be in the time zone where the Client is physically located otherwise it will be in the Mountain Time zone.

6.2. Invoicing/Billing Information

Client agrees to pay Company for the full amount of hours specified in section 7, which will be invoiced upon SOW execution.

Invoices will be submitted/mailed to: [accountspayable@ roseville.ca.us](mailto:accountspayable@roseville.ca.us)

7. Estimated Travel Expenses

Within the period of performance (PoP) as stated in Section 5 of this SOW, travel expenses pre-approved by Client that are incurred by Company will be billed to Client. Client agrees to pay any and all actual and reasonable travel and other business-related expenses. Actual and reasonable travel expenses may include airfare (coach class for domestic United States), lodging, local transportation, meals, parking, and miscellaneous expenses as required.

If Company is approved to travel to provide Services, then in the event that the Client cancels the travel, regardless of the advance written notice given, Client is required to reimburse Company for all non-refundable travel expenses that Company incurred as of the date of cancellation.

8. Pre-Existing Intellectual Property

Pursuant to Section 7 of the Agreement, and for the avoidance of doubt, Company will continue to own all of its Pre-Existing Intellectual Property, which Company grants to Client a non-exclusive, royalty-free, perpetual, irrevocable and world-wide right to use, modify, and reproduce the Deliverables solely for Client's business use in conjunction with Client's use of the Pre-Existing Intellectual Property. All Company Pre-Existing Intellectual Property utilized in the performance of this SOW are specifically described below. In the event of a conflict between Section 7 of the Agreement and Section 8 of this SOW, Section 8 of this SOW shall control with respect to such conflict.

None

9. Signatures

IN WITNESS WHEREOF, the parties have caused this SOW to be signed by a duly authorized representative on the dates below



ProofID, North America
1755 Telstar Drive, Suite 206
Colorado Springs, CO 80920

PEGRight, Inc. dba ProofID

By: [Signature]
Name: Benjamin Spertel
Title: Treasurer
Date: 6-23-20

City of Roseville

By: _____
Name: _____
Title: _____
Date: _____

Exhibit A-2

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1. Company Contact

Cody Cook, Director Professional Services
1755 Telstar Drive, Suite 206
Colorado Springs, CO 80920
Telephone Number: (719) 310-7124
E-mail address: cody.cook@pegtright.com

2. Customer Contact

Pete McLemore
316 Vernon Street
Roseville, CA 95678
Telephone Number: (916) 774-5431
Email: pmclemore@roseville.ca.us

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The following assumptions were made to create this SOW. Should any of these project assumptions prove to be incorrect or incomplete, then the Parties may modify the Fees and Terms, Scope, and/or Period of Performance by mutual agreement. Should any of these project assumptions not be provided in a timely manner, then the Parties may modify the Fees and Terms, Scope, and/or Period of Performance. Timely is defined as a reasonable amount of time for a service request to be completed, e.g. five (5) working days from the time of a reasonable request by a Party or from a date agreed upon in writing, such as in a project plan signed by both Parties.

- It is assumed that Client will provide and coordinate access to necessary staff in order to complete the Services and Deliverables defined within this SOW.
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Company will make the agreed upon revisions in order to satisfy requirements based upon the scope of the Services, Deliverables, and the Acceptance Criteria, and Company will, within five (5) business days, re-submit the updated version to Client;

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5. Period of Performance

This agreement shall expire as of April 6, 2021.

6. Fees and Terms

Contract Type: Time and Materials

Company will provide "best effort," consistent with all assumptions being satisfied toward providing the Services and Deliverables defined in the SOW within the *not to exceed* (NTE) cost specified in the table below. In the event Company reasonably anticipates that the NTE will be exceeded, it shall provide notice thereof to Client as far in advance as reasonably practicable and shall not exceed the NTE without Client's written authorization. For the avoidance of doubt, the NTE cost below shall not be construed as a minimum payment requirement.

Project Role	Rate	Hours	Cost
Solutions Engineer	USD 200.00	40	USD 8,000.00
TOTAL			USD 8,000.00

Company will assign only duly qualified persons to the Project who have the skills and experience commensurate with their respective role in the process.

If Client requests additional effort that requires additional labor hours, whether to complete Services and Deliverables defined in the SOW, or to add additional Services and Deliverables, then Company and the Client will define the labor rate and estimated number of labor hours via a supplemental agreement in the form of a Change Order consistent with this SOW.

6.1. Working Hours

Company resources will work normal business hours (8am to 5pm, Monday to Friday). For onsite activities this will be in the time zone where the Client is physically located otherwise it will be in the Mountain Time zone.

6.2. Invoicing/Billing Information

Client agrees to pay Company for the full amount of hours specified in section 7, which will be invoiced upon SOW execution.

Invoices will be submitted/mailed to: [accountspayable@ roseville.ca.us](mailto:accountspayable@roseville.ca.us)

7. Estimated Travel Expenses

Within the period of performance (PoP) as stated in Section 5 of this SOW, travel expenses pre-approved by Client that are incurred by Company will be billed to Client. Client agrees to pay any and all actual and reasonable travel and other business-related expenses. Actual and reasonable travel expenses may include airfare (coach class for domestic United States), lodging, local transportation, meals, parking, and miscellaneous expenses as required.

If Company is approved to travel to provide Services, then in the event that the Client cancels the travel, regardless of the advance written notice given, Client is required to reimburse Company for all non-refundable travel expenses that Company incurred as of the date of cancellation.

8. Pre-Existing Intellectual Property

Pursuant to Section 7 of the Agreement, and for the avoidance of doubt, Company will continue to own all of its Pre-Existing Intellectual Property, which Company grants to Client a non-exclusive, royalty-free, perpetual, irrevocable and world-wide right to use, modify, and reproduce the Deliverables solely for Client's business use in conjunction with Client's use of the Pre-Existing Intellectual Property. All Company Pre-Existing Intellectual Property utilized in the performance of this SOW are specifically described below. In the event of a conflict between Section 7 of the Agreement and Section 8 of this SOW, Section 8 of this SOW shall control with respect to such conflict.

None

9. Signatures

IN WITNESS WHEREOF, the parties have caused this SOW to be signed by a duly authorized representative on the dates below

PEGRight, Inc. dba ProofID

By: _____

Name: _____

Title: _____

Date: _____

City of Roseville

By: _____

Name: _____

Title: _____

Date: _____



COUNCIL COMMUNICATION

CC #: 0855

File #: 0400-04-12-1 & 0400-07

Title: Sierra Vista KT-2A - Final Map and Subdivision Agreement

Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 7.8.

RECOMMENDATION TO COUNCIL

Staff recommends that the City Council take the following actions:

1. Approve the final map on file with the City Clerk and accept on behalf of the public, subject to improvement, Lots A and B and the rights of way and the easements offered thereon.
2. Adopt the attached resolution approving the Subdivision Agreement and authorize the City Manager to execute the agreement on behalf of the City.

BACKGROUND

The Development Services, Engineering section, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 70 residential lots, 2 public Landscape lots and 1 Designated Remainder lot for future development.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

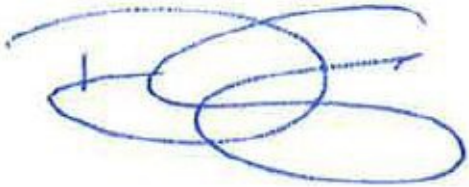
Approval of the Sierra Vista KT 2A final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Sierra Vista KT-2A final map was accomplished with preparation of the Sierra Vista Specific Plan EIR (Adopted: May 5, 2010) (SCH#2008032017) and the Mitigated Negative Declaration (MND) and associated Mitigation Monitoring Program approved by the City of Roseville on June 6, 2012. Because the Sierra Vista KT-2A final map is consistent with the project evaluated in the Sierra Vista Specific Plan Environmental Impact Report (EIR), no new effects would be expected to occur and all applicable mitigation measures from the Sierra Vista Specific Plan EIR will be implemented. As such, no

additional CEQA action is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director

A handwritten signature in blue ink, consisting of several overlapping loops and a horizontal line, positioned above a horizontal line.

Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

Resolution No. 20-266

Subdivision Agreement

OWNER'S STATEMENT

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTEREST IN THE REAL PROPERTY INCLUDED WITHIN THE SUBDIVISION SHOWN UPON THIS FINAL MAP OF "SIERRA VISTA-KT-2A" AND THEY HEREBY CONSENT TO THE PREPARATION AND RECORDATION OF THIS FINAL MAP AND HEREBY OFFER FOR DEDICATION AND DO HEREBY DEDICATE FOR SPECIFIC PURPOSES THE FOLLOWING:

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS EASEMENT FOR PUBLIC PURPOSES:

(A) PUBLIC EASEMENT FOR THE INSTALLATION AND MAINTENANCE OF, BUT NOT LIMITED TO ELECTROLIERS, WATER AND GAS PIPES, SEWER AND DRAINAGE PIPES, AND FOR UNDERGROUND WIRE AND CONDUITS FOR ELECTRIC, TELEPHONE AND TELEVISION SERVICES AND TRAFFIC CONTROL APPURTENANCES TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER AND ACROSS LOTS 'A' AND 'B' AND THOSE STRIPS OF LAND LYING CONTIGUOUS TO THE RIGHT OF WAY AS SHOWN HEREON AND DESIGNATED "P.U.E." (PUBLIC UTILITY EASEMENT).

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED IN FEE FOR PUBLIC PURPOSES:

(A) AS PUBLIC RIGHT OF WAY (INCLUDING ALL IMPROVEMENTS THEREON) LOT 'A', LOT 'B' AND THE STREETS SHOWN HEREON AS POLKA WAY, MINUET WAY, FANDANGO LOOP, PACHANGA COURT, MERENGUE COURT.

SIERRA VISTA COMMUNITIES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

BY: AKT INVESTMENTS, INC., A CALIFORNIA CORPORATION

BY: _____
NAME: _____
ITS: _____

BY: _____
NAME: _____
ITS: _____

BY: LENNAR HOMES OF CALIFORNIA INC. A CALIFORNIA CORPORATION

BY: _____
NAME: _____
ITS: _____

BY: _____
NAME: _____
ITS: _____

NOTARY’S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY

APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

SIERRA VISTA – KT-2A
SUBDIVISION NUMBER PL13-0096

BEING A PORTION OF LOT 5 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
M U R R A Y S M I T H & A S S O C I A T E S
SHEET 1 OF 7

NOTARY’S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY

APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

NOTARY’S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY

APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

NOTARY’S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY

APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

SIERRA VISTA – KT-2A
SUBDIVISION NUMBER PL13-0096
BEING A PORTION OF LOT 5 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES
LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL
RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF
SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
M U R R A Y S M I T H & A S S O C I A T E S

SURVEYOR'S STATEMENT

THIS FINAL MAP OF "SIERRA VISTA-KT-2A" WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS
BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP
ACT AND LOCAL ORDINANCE AT THE REQUEST OF SIERRA VISTA COMMUNITIES, LLC ON DECEMBER
2018. I HEREBY STATE THAT ALL THE MONUMENTS ARE OF THE CHARACTER AND OCCUPY THE
POSITIONS INDICATED OR THAT THEY WILL BE SET IN THOSE POSITIONS BEFORE DECEMBER 31, 2021,
AND THAT THE MONUMENTS ARE, OR WILL BE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED,
AND THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE CONDITIONALLY APPROVED TENTATIVE
MAP.

MICHAEL S. COSTA LS 6600
EXPIRATION DATE: 12-31-21

DATE



CITY ENGINEER'S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS FINAL MAP OF "SIERRA VISTA-KT-2A" AND FIND IT TO BE
SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS
THEREOF, THAT ALL PROVISION OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES
HAVE BEEN COMPLIED WITH.

MARC STOUT R.C.E. 69879
CITY ENGINEER, CITY OF ROSEVILLE
LICENSE EXPIRES SEPTEMBER 30, 2020

DATE

I HEREBY STATE THAT I AM SATISFIED THAT THIS FINAL MAP OF "SIERRA VISTA-KT-2A" IS TECHNICALLY
CORRECT.

FOR MARC STOUT CITY ENGINEER, CITY OF ROSEVILLE

TIMOTHY G. BLAIR, PLS 8278
EXPIRES DECEMBER 31, 2021

DATE



CITY CLERK'S STATEMENT

I HEREBY CERTIFY THAT THE CITY COUNCIL, CITY OF ROSEVILLE, HAS APPROVED THIS FINAL MAP OF
"SIERRA VISTA-KT-2A" AND HAS ACCEPTED ON BEHALF OF THE PUBLIC SUBJECT TO IMPROVEMENT, LOTS
'A' AND 'B' AND THE RIGHTS OF WAYS AND THE EASEMENTS OFFERED HEREON FOR DEDICATION.

CITY CLERK, CITY OF ROSEVILLE

DATE

BY: _____
ASSISTANT CITY CLERK

RECORDER'S STATEMENT

FILED THIS ____ DAY OF _____, 20__ AT _____.M. IN BOOK ____ OF MAPS, AT PAGE _____, IN
THE OFFICE OF THE PLACER COUNTY RECORDER, AT THE REQUEST OF MSA ENGINEERING, INC.

RECORDER OF PLACER COUNTY
STATE OF CALIFORNIA

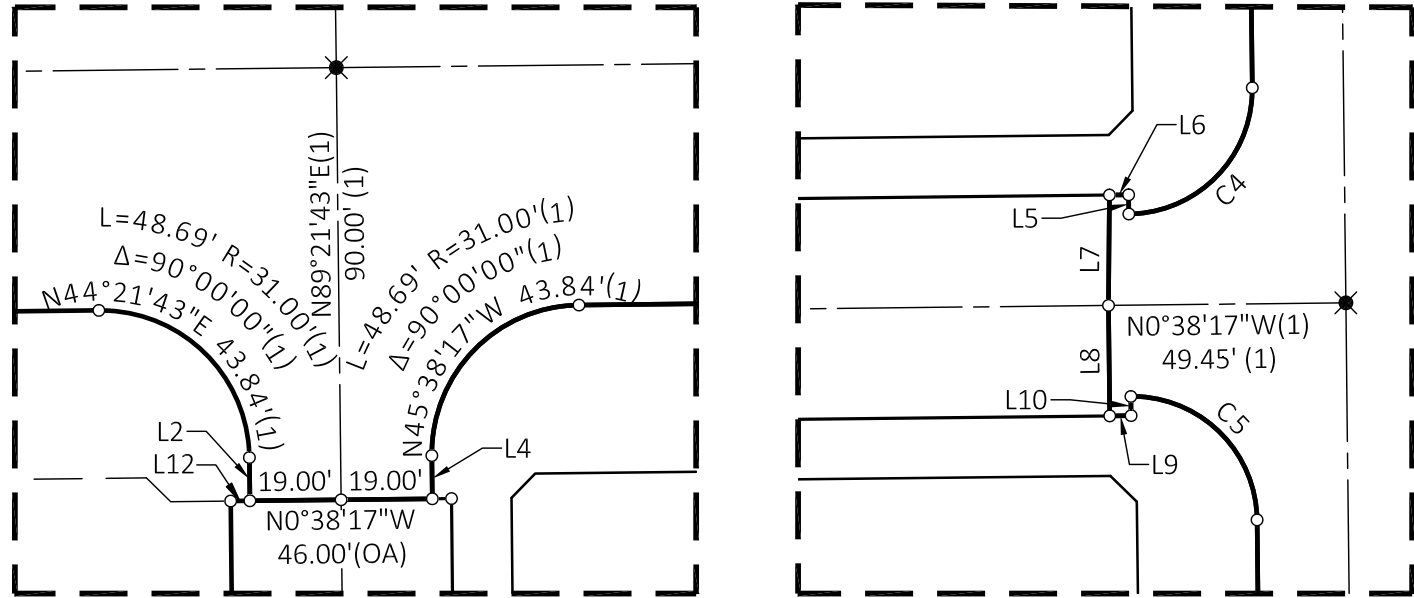
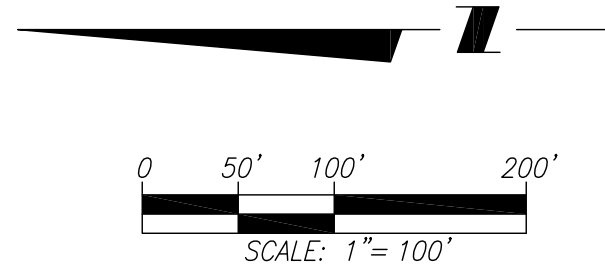
DOCUMENT NO.: _____

BY: _____
DEPUTY

FEE \$ _____

SIERRA VISTA – KT-2A
SUBDIVISION NUMBER PL13-0096

BEING A PORTION OF LOT 5 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
MURRAY SMITH & ASSOCIATES



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	48.69' (1)	31.00' (1)	90°00'00" (1)	N44°21'43"E (1)	43.84' (1)
C2	48.69' (1)	31.00' (1)	90°00'00" (1)	N45°38'17"W (1)	43.84' (1)
C3	48.69' (1)	31.00' (1)	90°00'00" (1)	N44°21'43"E (1)	43.84' (1)
C4	40.84' (1)	26.00' (1)	90°00'00" (1)	N45°38'17"W (1)	36.77' (1)
C5	40.84' (1)	26.00' (1)	90°00'00" (1)	N44°21'43"E (1)	36.77' (1)
C6	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N0°38'17"W (1)	72.59' (1)
L2	N89°21'43"E (1)	9.00' (1)
L3	N0°38'17"W (1)	38.00' (1)
L4	N89°21'43"E (1)	9.00' (1)
L5	N89°21'43"E (1)	4.00' (1)
L6	N0°38'17"W (1)	4.00' (1)
L7	N89°31'15"W (1)	23.00' (1)
L8	N89°21'43"E (1)	23.00' (1)
L9	N0°38'17"W (1)	4.45' (1)
L10	N89°21'43"E (1)	4.00' (1)
L11	N0°38'17"W	13.22'
L12	N0°38'17"W	4.00'

SIERRA VISTA-KT
PROPERTIES VILLAGE 3A

SIERRA VISTA-KT
PROPERTIES VILLAGE 3B

LEGEND

- ...MONUMENT TO BE SET PER THAT FINAL MAP OF "SIERRA VISTA-FEDERICO LARGE LOT SUBDIVISION, SUBDIVISION NO. PL 15-0192" RECORDED IN BOOK EE OF MAPS, AT PAGE 6, OFFICIAL RECORDS OF PLACER COUNTY
- ...5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600" TO BE SET PER THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION, SUBDIVISION NUMBER: PL 15-0192" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY
- ...COPPERWELD SURVEY MONUMENT WITH CENTER PUNCH IN MONUMENT WELL STAMPED "LS 6600" TO BE SET PER THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION, SUBDIVISION NUMBER PL 15-0192" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY
- ...SET 5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600"
- ...SET COPPERWELD SURVEY MONUMENT WITH CENTER PUNCH IN MONUMENT WELL STAMPED "LS 6600"
- ...DIMENSION POINT
- B.M. ...BOOK OF MAPS
- (R) ...RADIAL
- (OA) ...OVERALL
- P.U.E. ...PUBLIC UTILITY EASEMENT
- P.E. ...PASEO EASEMENT
- D.N. ...DOCUMENT NUMBER

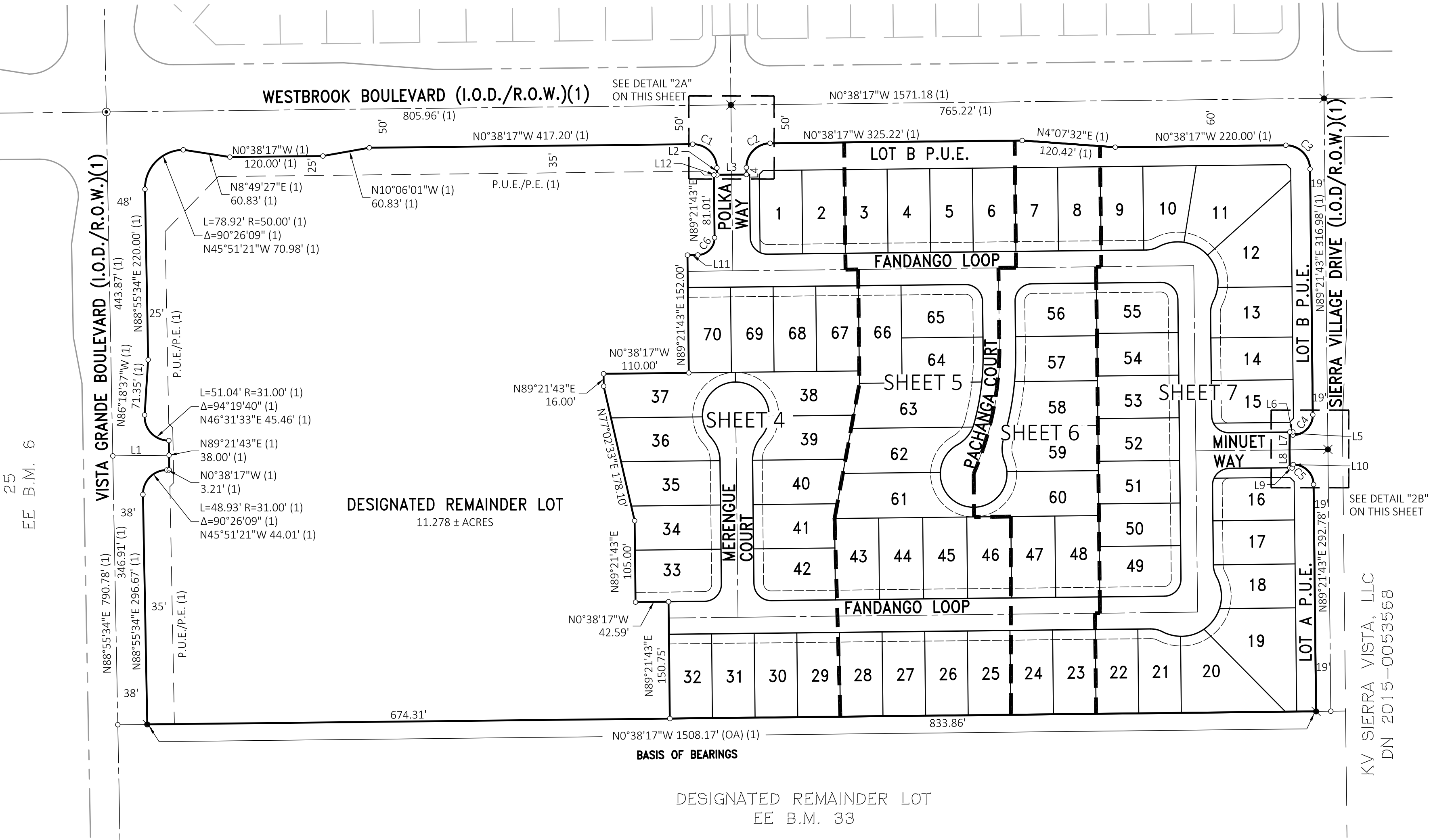
REFERENCES

- (1) PER BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY

SEE SHEET 4 FOR NOTES

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS MAP IS THE WESTERLY LINE OF LOT 5 AS SHOWN IN BOOK EE OF MAPS, PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY AND ESTABLISHED BY THE MONUMENTS SHOWN HEREON. THE BEARING IS N0°38'17"W.



KV SIERRA VISTA, LLC
DN 2015-0053568

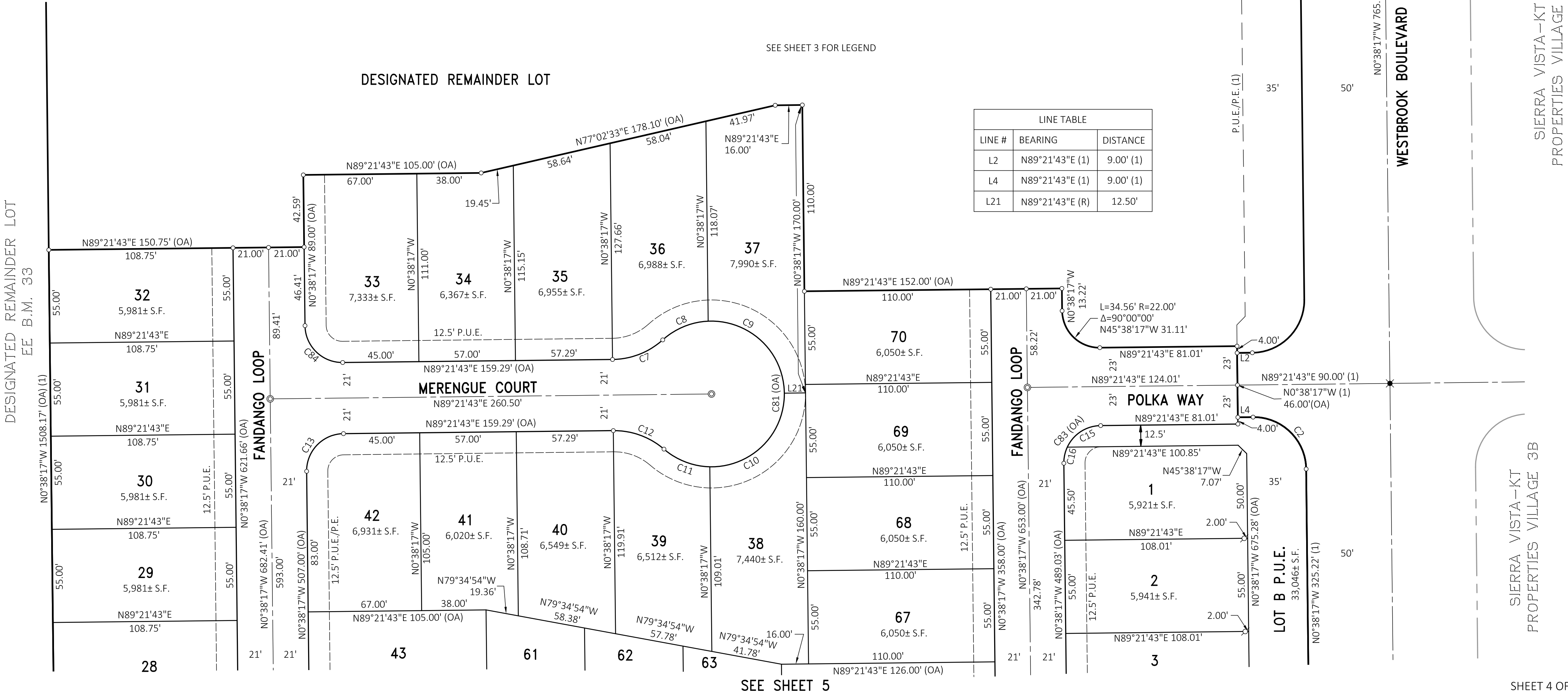
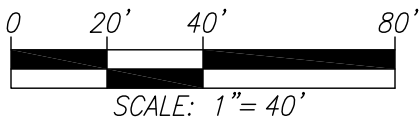
CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C2	48.69' (1)	31.00' (1)	90°00'00" (1)	N45°38'17"W (1)	43.84' (1)
C7	32.52'	45.00'	41°24'35"	N68°39'26"E	31.82'
C8	29.58'	43.00'	39°24'38"	N67°39'27"E	29.00'
C9	69.04'	43.00'	91°59'57"	N46°38'15"W	61.86'
C10	69.04'	43.00'	91°59'57"	N45°21'41"E	61.86'
C11	29.58'	43.00'	39°24'38"	N68°56'01"W	29.00'
C12	32.52'	45.00'	41°24'35"	N69°56'00"W	31.82'
C13	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C15	24.73'	22.00'	64°25'01"	N57°09'12"E	23.45'
C16	9.82'	22.00'	25°34'59"	N12°09'12"E	9.74'
C81 (OA)	197.24'	43.00'	262°49'09"	N0°38'17"W	64.50'
C83 (OA)	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C84	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'

- NOTES
- ALL CURVES DIMENSIONED WITH LENGTH, RADIUS, DELTA, CHORD BEARING AND CHORD DISTANCE.
 - ALL DISTANCES SHOWN HEREON ARE EXPRESSED IN FEET AND DECIMALS THEREOF.
 - DUE TO ROUNDING, THE SUM OF THE INDIVIDUAL DIMENSIONS MAY NOT EQUAL THE OVERALL DIMENSION.
 - TOTAL AREA FOR THIS "SIERRA VISTA-KT-2A" SUBDIVISION IS 25.371± AC. GROSS, CONSISTING OF 70 RESIDENTIAL DEVELOPMENT LOTS , 2 LANDSCAPE LOTS AND 1 DESIGNATED REMAINDER LOT.
 - ALL REAR LOT CORNERS WILL BE SET WITH A 5/8" REBAR WITH A PLASTIC PLUG STAMPED "LS 6600", WHERE MONUMENTS FALL ADJACENT TO A RETAINING WALL, SOUNDWALL OR CONCRETE FOOTING A 5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600" WILL BE SET ON THE SIDE LOT LINE 2.00' OFFSET TO THE REAR LOT CORNER AS SHOWN.
 - A 1-5/32" BRASS DISK STAMPED "LS 6600" WILL BE SET IN THE SIDEWALK ON THE PROJECTION OF THE SIDE LOT LINES 1.00 FOOT FROM THE FRONT PROPERTY CORNER.
 - A SOUNDWALL IS ADJACENT TO LOTS: 1 THROUGH 19, LOT 'A' AND LOT 'B'.
 - A GEOTECHNICAL ENGINEERING REPORT ENTITLED "SIERRA VISTA RESIDENTIAL DEVELOPMENT" WAS PREPARED BY WALLACE KUHLM & ASSOCIATES, WKA NO. 11712.01, DATED JANUARY 10, 2018. A COPY OF THIS REPORT IS AVAILABLE FOR PUBLIC INSPECTION AT THE CITY OF ROSEVILLE ENGINEERING DEPARTMENT, FILE NO. 308-879 .
 - CONDITIONS, COVENANTS AND RESTRICTIONS (CC&R'S) ARE BEING RECORDED CONCURRENTLY WITH THIS FINAL MAP IN DOCUMENT NO.: 2020-0042952.

SIERRA VISTA – KT-2A
SUBDIVISION NUMBER PL13-0096

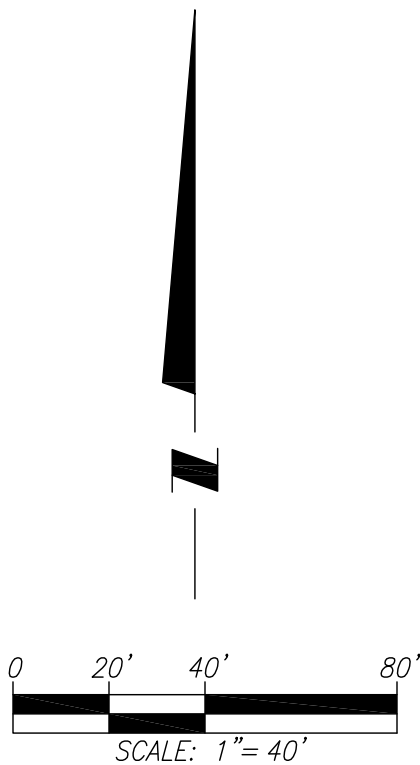
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JULY, 2020

MURRAY SMITH & ASSOCIATES



SIERRA VISTA – KT-2A
SUBDIVISION NUMBER PL13-0096
BEING A PORTION OF LOT 5 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES
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CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
M U R R A Y S M I T H & A S S O C I A T E S

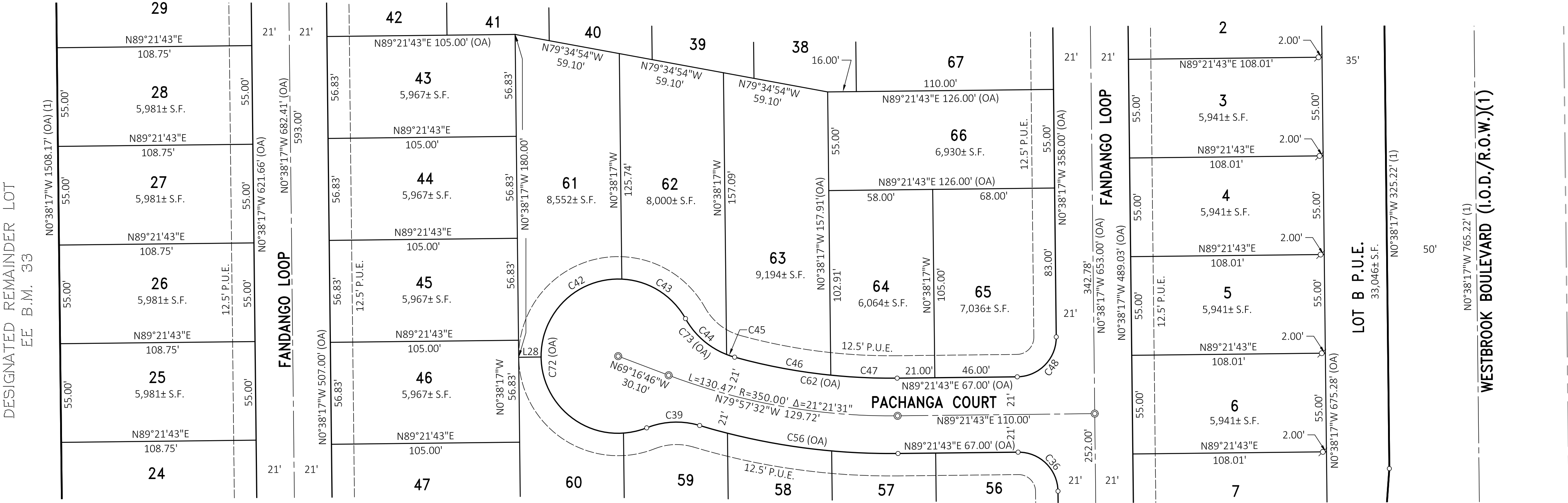
SEE SHEET 3 FOR LEGEND
SEE SHEET 4 FOR NOTES



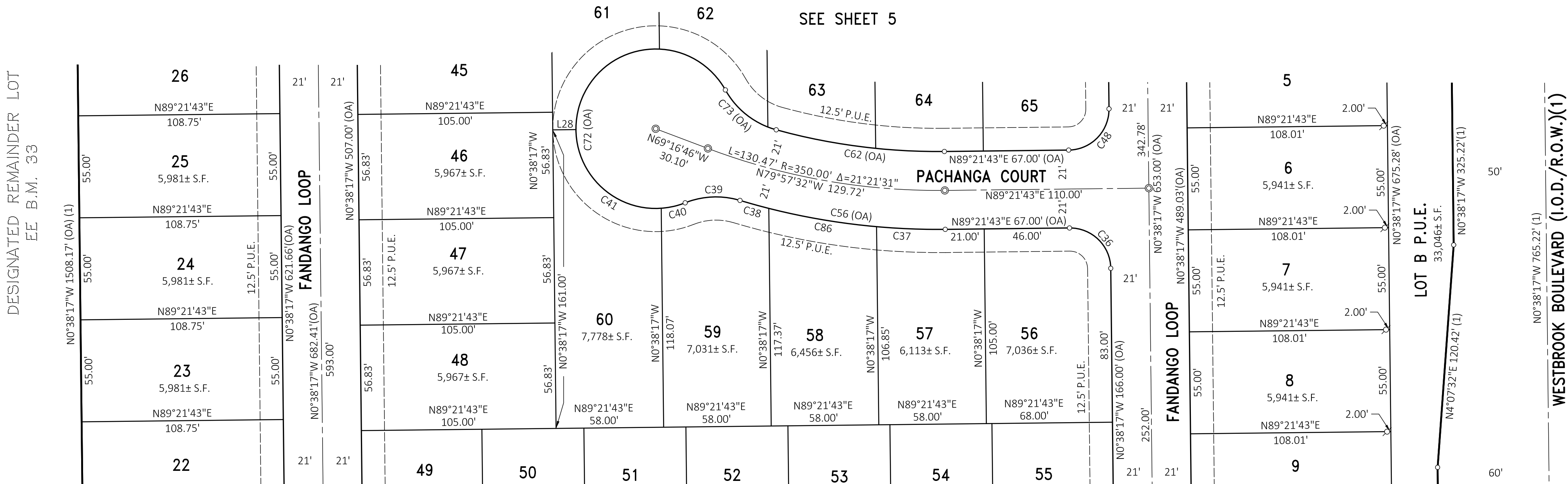
LINE TABLE		
LINE #	BEARING	DISTANCE
L28	N89°21'43"E (R)	12.50'

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C36	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C39	30.14'	45.00'	38°22'51"	N87°29'50"E	29.58'
C42	70.05'	43.00'	93°19'59"	N46°01'43"E	62.55'
C43	43.67'	43.00'	58°11'08"	N58°12'44"W	41.82'
C44	31.05'	45.00'	39°31'45"	N48°53'03"W	30.43'
C45	4.73'	45.00'	6°00'59"	N71°39'25"W	4.72'
C46	54.64'	329.00'	9°30'56"	N79°25'22"W	54.58'
C47	37.08'	329.00'	6°27'27"	N87°24'33"W	37.06'
C48	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C56 (OA)	112.19'	371.00'	17°19'33"	N81°58'30"W	111.76'
C62 (OA)	91.72'	329.00'	15°58'23"	N82°39'05"W	91.42'
C72 (OA)	197.06'	43.00'	262°34'25"	N19°35'37"E	64.62'
C73 (OA)	35.77'	45.00'	45°32'44"	N51°53'32"W	34.84'

SEE SHEET 4



SEE SHEET 6

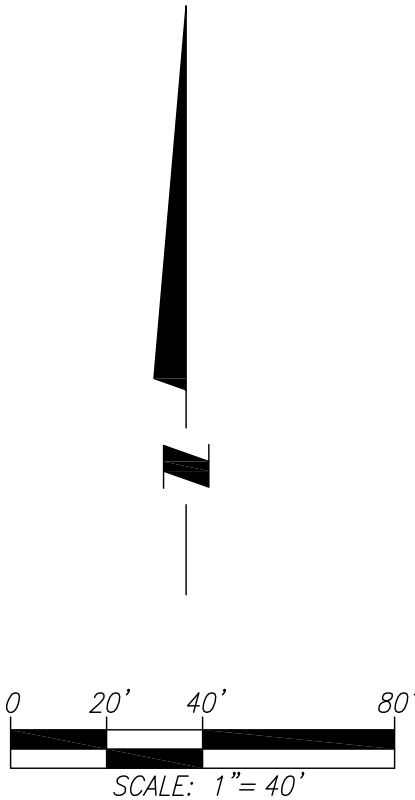


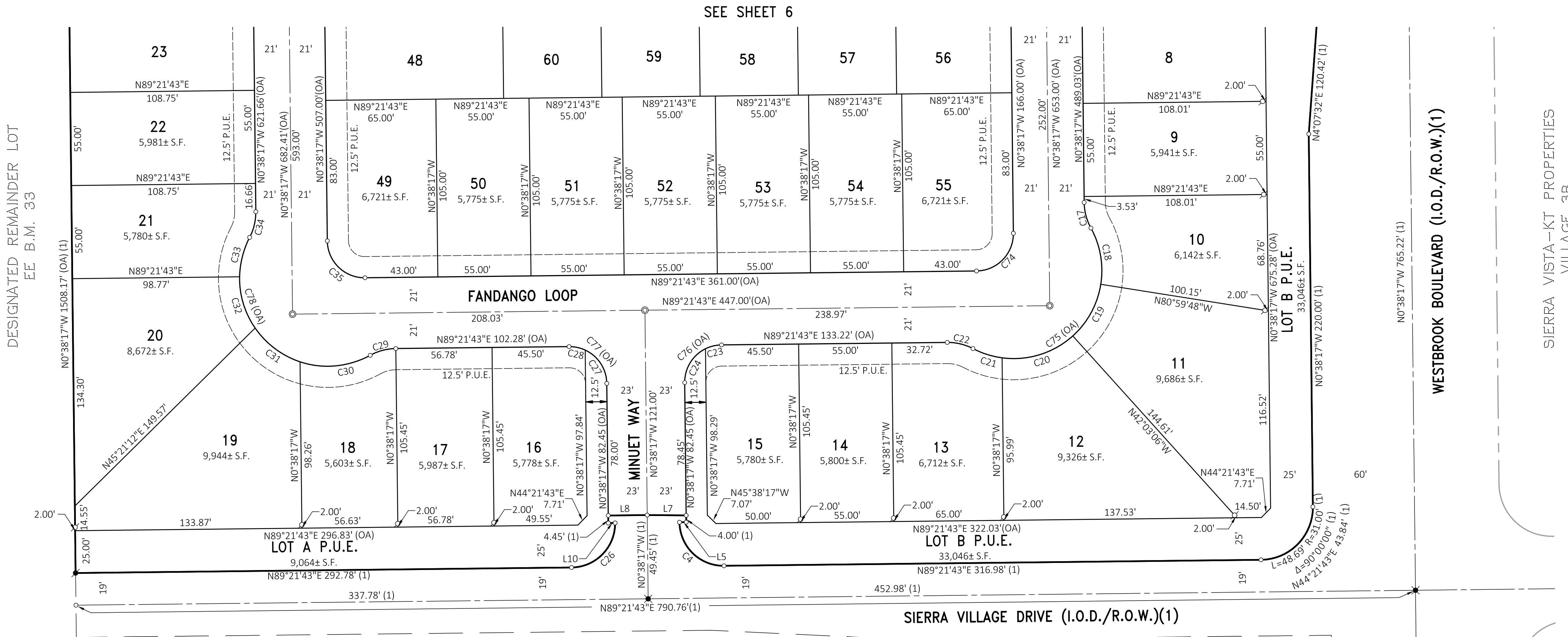
CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C36	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C37	37.06'	371.00'	5°43'26"	N87°46'34"W	37.05'
C38	16.12'	371.00'	2°29'20"	N74°33'24"W	16.11'
C39	30.14'	45.00'	38°22'51"	N87°29'50"E	29.58'
C40	13.30'	43.00'	17°43'19"	N77°10'05"E	13.25'
C41	70.05'	43.00'	93°19'59"	N47°18'16"W	62.55'
C48	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C56(OA)	112.19'	371.00'	17°19'33"	N81°58'30"W	111.76'
C62(OA)	91.72'	329.00'	15°58'23"	N82°39'05"W	91.42'
C72(OA)	197.06'	43.00'	262°34'25"	N19°35'37"E	64.62'
C73(OA)	35.77'	45.00'	45°32'44"	N51°53'32"W	34.84'
C86	59.01'	371.00'	9°06'47"	N80°21'27"W	58.95'

LINE TABLE		
LINE #	BEARING	DISTANCE
L28	N89°21'43"E (R)	12.50'

SEE SHEET 3 FOR LEGEND
SEE SHEET 4 FOR NOTES

SIERRA VISTA – KT-2A
SUBDIVISION NUMBER PL13-0096
BEING A PORTION OF LOT 5 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES
LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL
RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF
SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
M U R R A Y S M I T H & A S S O C I A T E S





KV SIERRA VISTA, LLC
DN 2015-0053568

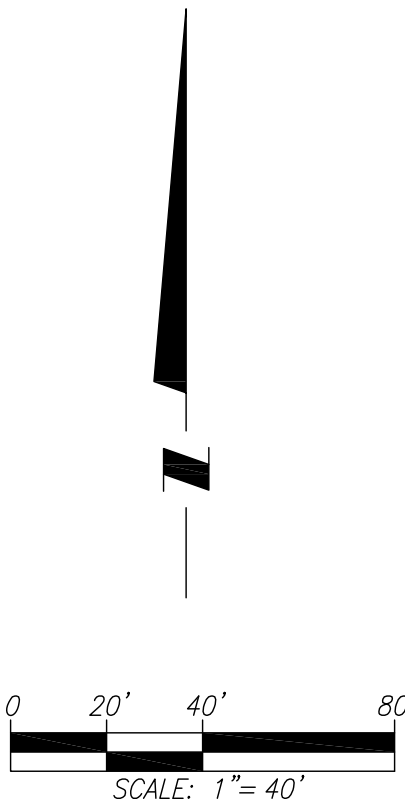
LINE TABLE		
LINE #	BEARING	DISTANCE
L5	N89°21'43"E (1)	4.00' (1)
L7	N89°31'15"W (1)	23.00' (1)
L8	N89°21'43"E (1)	23.00' (1)
L10	N89°21'43"E (1)	4.00' (1)

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C4	40.84' (1)	26.00' (1)	90°00'00" (1)	N45°38'17"W (1)	36.77' (1)
C17	15.77'	32.00'	28°14'33"	N14°45'34"W	15.61'
C18	34.38'	52.00'	37°53'03"	N9°56'19"W	33.76'
C19	35.35'	52.00'	38°56'41"	N28°28'33"E	34.67'
C20	45.08'	52.00'	49°40'35"	N72°47'11"E	43.69'
C21	18.13'	52.00'	19°58'47"	N72°23'07"W	18.04'
C22	15.77'	32.00'	28°14'33"	N76°31'00"W	15.61'
C23	9.82'	22.00'	25°34'59"	S76°34'14"W	9.74'
C24	24.73'	22.00'	64°25'01"	N31°34'14"E	23.45'
C26	40.84'	26.00'	90°00'00"	N44°21'43"E	36.77'
C27	24.73'	22.00'	64°25'01"	N32°50'48"W	23.45'
C28	9.82'	22.00'	25°34'59"	N77°50'48"W	9.74'
C29	15.77'	32.00'	28°14'33"	N75°14'26"E	15.61'

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C30	42.82'	52.00'	47°10'56"	N84°42'38"E	41.62'
C31	33.75'	52.00'	37°11'18"	N53°06'15"W	33.16'
C32	32.15'	52.00'	35°25'22"	N16°47'55"W	31.64'
C33	24.22'	52.00'	26°41'30"	N14°15'31"E	24.01'
C34	15.77'	32.00'	28°14'33"	N13°29'00"E	15.61'
C35	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C74	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C75 (OA)	132.95'	52.00'	146°29'06"	N44°21'43"E	99.58'
C76 (OA)	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C77 (OA)	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C78 (OA)	132.95'	52.00'	146°29'06"	N45°38'17"W	99.58'

SEE SHEET 3 FOR LEGEND
SEE SHEET 4 FOR NOTES

SIERRA VISTA - KT-2A
SUBDIVISION NUMBER PL13-0096
BEING A PORTION OF LOT 5 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
MURRAY SMITH & ASSOCIATES



RESOLUTION NO. 20-266

APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND SIERRA VISTA COMMUNITIES, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a subdivision agreement, by and between the City of Roseville and Sierra Vista Communities, LLC, for the Sierra Vista KT-2A subdivision, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said agreement is approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**RECORDING REQUESTED BY AND WHEN
RECORDED, PLEASE RETURN TO:**

**City Clerk
CITY OF ROSEVILLE
311 Vernon Street
Roseville, CA 95678**

SUBDIVISION AGREEMENT

SIERRA VISTA -KT - 2A SUBDIVISION

THIS AGREEMENT, made and entered into this ____ day of _____,
20__, by and between the CITY OF ROSEVILLE, a municipal corporation ("CITY"), and
SIERRA VISTA COMMUNITIES, LLC,
a CALIFORNIA LIMITED LIABILITY COMPANY, ("SUBDIVIDER"),

W I T N E S S E T H:

WHEREAS, SUBDIVIDER is possessed of a tract of land lying in the City of Roseville,
County of Placer, known as "SIERRA VISTA - KT-2A Subdivision" (Subdivision
no. PL17-0305 ; "the Subdivision"); and

WHEREAS, a tentative map of the Subdivision was approved by the City Planning
Commission on the 10 day of December, 2015, and the final map of the Subdivision
has been approved subject to the execution of this Agreement; and

WHEREAS, the final map has been filed on the ____ day of _____, 20__ in
Book _____ of Parcel/Subdivision Maps at Page _____ in the Official Records, Placer
County Recorder, file no. _____; and

WHEREAS, Section 18.20.110 of the Roseville Municipal Code, regulating the subdivision of land in the City, requires that SUBDIVIDER shall execute and file an agreement between itself and CITY relating to the improvements to be made in a subdivision, prior to the approval by the City Council of the final map.

NOW, THEREFORE, the parties agree as follows:

1. Rights-of-Way. Except as otherwise provided by this Agreement, CITY rejects all lands, right-of-ways, and easements offered for dedication on the final map of the Subdivision. All such offers shall, however, remain open, and shall constitute irrevocable offers of dedication in accordance with Government Code Section 66477.2. All such offers may be accepted by CITY in its sole discretion at any later date without further notice to SUBDIVIDER as provided by law.

By way of explanation only, it is the current intention of CITY to accept all or part of such irrevocable offers to dedicate upon acceptance of the improvements called for in this Agreement.

2. Improvements - Time Limit. SUBDIVIDER agrees to cause all improvements to be made and constructed in the Subdivision to fully comply with the requirements of the Roseville Municipal Code and the Subdivision Map Act of the State of California according to the improvement plans for the Subdivision prepared by MSA Engineering, Inc., dated June 11, 2019 and approved by the City Engineer and including any changes or alterations to such improvements required by the City Engineer, and to install, on or before December 31, 2021, such survey monuments as may be required by the City Engineer ("the Work"). SUBDIVIDER agrees to pay for any materials, provisions or other supplies used in, upon, for or about the performance of the Work, or for any work or labor of any kind done in

connection with the Work, or for any amounts due under the Unemployment Insurance Act with respect to such work or labor.

SUBDIVIDER agrees to complete all of the Work on or before twenty-four (24) months from the date of this Agreement. If in the opinion of the City Engineer of CITY, an extension of this Agreement is not detrimental to the public welfare, he or she is, in his or her sole discretion, hereby authorized to extend the time within which the Work shall be completed for a period not to exceed twelve (12) months. Upon a written application made by SUBDIVIDER, further extensions, not to exceed an additional six (6) months, shall be reviewed and approved at the discretion of the City Engineer of CITY. Any such application extension request by SUBDIVIDER shall fully state the grounds and facts relied upon for the granting of additional extensions.

In the event that SUBDIVIDER shall fail to complete the Work within the time provided by this Agreement, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, enter upon the Subdivision and complete the Work and recover the full cost and expense of such construction from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

If at anytime prior to the expiration of the time provided by this Agreement the City Engineer of CITY determines that a safety hazard exists within an existing public right-of-way, the City Engineer shall give written notice to SUBDIVIDER to eliminate the safety hazard. If SUBDIVIDER fails to eliminate the safety hazard within five (5) calendar days of the written notice, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, eliminate the safety hazard and recover the full cost and expense of such work from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

3. Acquisition and Dedication of Easements or Rights-of-Ways. If any of the Work is to be constructed or installed on land not within the Subdivision or already existing public right-of-way, no construction or installation shall be commenced before:

a. The irrevocable offer of dedication or conveyance to CITY of appropriate right-of-ways, easements or other interest in real property, and appropriate authorization from the property owner to allow construction or installation of the improvements or work; or

b. The issuance of an order of possession by a court of competent jurisdiction pursuant to the State Eminent Domain Law. SUBDIVIDER shall comply in all respects with any such order of possession.

Nothing in this Section 3 shall be construed as authorizing or granting an extension of time to SUBDIVIDER for completion of the Work.

4. Inspection Fees and Costs. The City Engineer shall inspect all of the Work improvements made in the Subdivision to see that they comply with CITY's subdivision regulations and specifications. SUBDIVIDER shall deposit the estimated inspection fee and reimburse CITY for the cost of such inspections in accordance with Roseville Municipal Code section 18.20.070.

5. Securities.

a. SUBDIVIDER shall file with this Agreement two (2) improvement securities as set forth in Roseville Municipal Code Sections 18.20.150 and 18.20.160. Each security shall be in the amount of one hundred percent (100%) of the total estimated cost of the Work as determined by the City Engineer which amount is the sum of \$ 1,540,385.70. One improvement security shall secure faithful performance of this Agreement as required by Section 66499.3(a) of the Government Code of the State of California (the "faithful performance" security). The second improvement security shall, as required by Section 66499.3(b) of the Government Code of the State of California, secure the obligations set forth in Title 15

(commencing with Section 3082) of Part 4 of Division 3 of the Civil Code of the State of California for payment to the contractor, his subcontractors and to persons renting equipment or furnishing labor or materials to them for the Work (the "payment security"). The improvement securities required under this paragraph shall also secure placement of monumentation and guarantee payment therefor as provided by California Government Code section 66496.

b. SUBDIVIDER shall also file with this Agreement a "guarantee and warranty security" in the amount of ten percent (10%) of the City Engineer's estimated cost of the Work as set forth in Section 18.20.170 of the Roseville Municipal Code to guarantee and warrant the Work for a period of one year following its completion and acceptance against any defective work or labor done, or defective materials furnished, as required by Section 66499(a)(5) of the Government Code of the State of California. The guarantee and warranty security shall be released upon SUBDIVIDER's request following expiration of the warranty period and subject to the reasonable determination of the City Engineer that SUBDIVIDER's warranty obligations have been satisfied.

c. Any bonds submitted as security pursuant to this section shall be executed by a surety company authorized to transact a surety business in the State of California. All required securities shall be in a form approved by the City Attorney of CITY.

6. Successors and Assigns – Covenant Running with the Land. This Agreement shall inure to the benefit of, and be binding upon, the successors and assigns of the respective parties. It shall be recorded in the Office of the Recorder of Placer County concurrently with the final map of the Subdivision, and shall constitute a covenant running with the land and an equitable servitude upon the real property within the Subdivision.

7. Acceptance of Improvements Upon Completion. Upon satisfactory completion of the Work, in accordance with this Agreement, CITY agrees to accept the Work and its

improvements and the offers of dedication described in paragraph 1, subject to the provisions of paragraphs 1 and 10 of this Agreement.

8. Notice Regarding Construction. SUBDIVIDER shall notify the City Engineer of CITY in writing three (3) days prior to the commencement of construction of the Work.

9. Subdivider's Obligation to Warn Public During Construction. Until final acceptance of the Work, SUBDIVIDER shall give good and adequate warning to the public of each and every dangerous condition which may exist in the Work, and will take all reasonable actions to protect the public from any such dangerous condition.

10. Warranty.

a. SUBDIVIDER guarantees and warrants the public improvements which constitute the Work required by this Agreement, and agrees to remedy any defects in the improvements or the Work arising from faulty or defective materials or construction of said improvements or the Work occurring within twelve (12) months after their acceptance by CITY. SUBDIVIDER agrees to permit inspection of all improvements in the Subdivision by the City Engineer of CITY for such period, and to reimburse CITY for the cost of such inspections.

b. If, within the warranty period, the Work or improvement or any part of the Work done, furnished, installed, or constructed fails to fulfill any of the requirements of this Agreement or the improvement plans and specifications, SUBDIVIDER shall, without delay or cost to CITY, repair, replace or reconstruct any defective or otherwise unsatisfactory part or parts of the Work. CITY may, at its sole option, perform such repair or replacement itself if SUBDIVIDER has failed to commence such repair within twenty (20) days after CITY has mailed written notice of default to SUBDIVIDER and to SUBDIVIDER'S Surety. In such event, SUBDIVIDER agrees to pay the cost of such repair and replacement by CITY and CITY may, at its option, recover such cost as a lien against the Subdivision should the cost exceed the inspection fee deposited pursuant to paragraph 4 of this Agreement.

Should CITY determine that the public safety requires repairs or replacements to be made before SUBDIVIDER can be notified, CITY may, in its sole discretion, make the necessary repairs or replacement or perform the necessary work. SUBDIVIDER shall pay to CITY the cost of such repairs and CITY may at its option recover such cost as a lien against the Subdivision.

11. Indemnification. To the fullest extent allowed by law, SUBDIVIDER shall defend, indemnify, and save and hold harmless CITY, its officers, agents, employees and volunteers from any claims, suits or actions of every name, kind and description brought forth, or on account of, injuries to or death of any person (including but not limited to workers and the public), or damage to property, resulting from or arising out of SUBDIVIDER's willful misconduct or negligent act or omission while engaged in the performance of obligations or exercise of rights created by this Agreement, except those matters arising from CITY's sole or active negligence or willful misconduct. The parties intend that this provision shall be broadly construed.

SUBDIVIDER's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law. The defense and indemnity obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.

12. Insurance. SUBDIVIDER agrees to continuously maintain, in full force and effect, at a minimum the following policies of insurance during the term of this Agreement.

COVERAGE

LIMITS OF LIABILITY

General Liability

\$2,000,000 per occurrence

\$4,000,000 aggregate

Personal Injury:

\$2,000,000 per occurrence

\$4,000,000 aggregate

Automobile Liability

\$1,000,000 combined single limit

a. Form. SUBDIVIDER shall submit a certificate evidencing such coverage for the period covered by this Agreement in a form satisfactory to Risk Management and the City Attorney, prior to undertaking any work hereunder. Any insurance written on a claims made basis is subject to the approval of Risk Management and the City Attorney.

b. Additional Insureds. SUBDIVIDER shall also provide a separate endorsement form or section of the policy showing CITY, its officers, agents, employees and volunteers as additional insureds for each type of coverage, except for Workers' Compensation, for ongoing and completed operations. Such insurance shall specifically cover the contractual liability of SUBDIVIDER. The additional insured coverage under the SUBDIVIDER's policy shall be primary and noncontributory, as evidenced by a separate endorsement or section of the policy, and shall not seek contribution from CITY's insurance or self-insurance. In addition, the additional insured coverage shall be at least as broad as the Insurance Services Office ("ISO") CG 20 01 Endorsement. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

c. Cancellation/Modification. SUBDIVIDER shall provide ten (10) days written notice to CITY prior to cancellation or modification of any insurance required by this Agreement.

d. Umbrella/Excess Insurance. The limits of insurance required in this Agreement may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply

on a primary and noncontributory basis for the benefit of CITY (if agreed to in a written contract) before CITY's own insurance shall be called upon to protect it as a named insured.

e. Self-Insured Retentions. All self-insured retentions ("SIR") must be disclosed to Risk Management for approval and shall not reduce the limits of liability. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or CITY. CITY reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

f. Waiver of Subrogation. SUBDIVIDER hereby agrees to waive subrogation which any insurer of SUBDIVIDER may acquire from SUBDIVIDER by virtue of the payment of any loss under a Workers Compensation, Commercial General Liability or Automobile Liability policy. All Workers Compensation, Commercial General Liability and Automobile Liability policies shall be endorsed with a waiver of subrogation in favor of CITY, its officers, agents, employees and volunteers for all work performed by SUBDIVIDER, its employees, agents and subcontractors.

g. Liability/Remedies. Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve SUBDIVIDER of liability in excess of such coverage, nor shall it preclude CITY from taking such other actions as are available to it under any other provisions of this Agreement or law.

13. Irrevocability of Security. The improvement securities furnished pursuant to paragraph 5 shall be irrevocable, shall not be limited as to time (except as to the one-year guarantee and warranty period specified in paragraph 10) and shall provide that they may be released, in whole or part, only upon the written approval of the City Engineer of CITY.

14. Attorney's Fees; Venue; Governing Law. Any action by any party to this Agreement, or any action concerning a security furnished pursuant to paragraph 5, shall be

brought in the appropriate court of competent jurisdiction within the County of Placer, State of California, notwithstanding any other provision of law which may provide that such action may be brought in some other location. In the event it becomes necessary for either party to bring an action with respect to enforcement of the provisions of this Agreement, or the security therefor, the prevailing party in such action shall be awarded a reasonable attorney's fee, as may be determined by the Court. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

15. Release of Faithful Performance Security. Release of faithful performance security shall be in compliance with and pursuant to the procedures set forth in Government Code Section 66499.7. Upon the completion of all secured Work by SUBDIVIDER and written acceptance of that completed Work by CITY, and the furnishing of the warranty security as required by paragraph 5(b), the City Engineer shall authorize the release of the remaining faithful performance security.

16. Release of Payment Security. Thirty-five (35) days after a notice of completion is recorded with respect to the Work, the City Engineer of CITY may authorize the release of the payment security, in the event that no claims have been filed against said security. In the event that claims or actions are filed against the security, the City Engineer may release so much of such security as is in excess of the total of the claims made against it, plus a reasonable amount of costs and attorney's fees.

17. Automatic Termination Upon Completion and Sale of Residential Unit. This Agreement and any lien pursuant hereto shall automatically be terminated, without any further action by either party or need to record any additional document, with respect to any single-family residential lot within a parcel designated by the Specific Plan for residential use, upon completion of construction and issuance by the City of a final inspection for a dwelling unit upon such residential lot and conveyance of such improved residential lot to a bona-fide good faith

purchaser thereof. In connection with its issuance of a final inspection for such improved lot, City shall confirm that: (i) all improvements which are required to serve the lot, as determined by City, have been accepted by City; (ii) the lot is included within the Maintenance CFD required by Section 3.20 or other financing mechanism acceptable to the City, to the extent required hereby; and (iii) if and to the extent applicable to such lot, an affordable purchase or rental housing agreement has been recorded on the lot. Termination of this Agreement for any such residential lot as provided for in this section shall not in any way be construed to terminate or modify any assessment district or Mello-Roos Community Facilities District lien affecting such lot at the time of termination.

18. Failure of Performance. In addition to any other remedies provided in this Agreement or by law, in the event SUBDIVIDER fails to perform one or more of the covenants or conditions of this Agreement, CITY shall have recourse to the security given to guarantee the performance of such acts. CITY may do, or cause to be done, those acts required of SUBDIVIDER, and shall have recourse against so much of the security as is necessary to discharge the responsibility of SUBDIVIDER. In the event CITY seeks recourse against a security, CITY shall also have recourse against SUBDIVIDER for any and all amounts necessary to complete the obligations of SUBDIVIDER in the event the security is insufficient to pay such amounts. All administrative costs, including reasonable attorney's fees pursuant to Section 66499.4 of the Government Code, incurred by CITY, in addition to the costs of the improvements, shall be a proper charge against the security and SUBDIVIDER.

19. Integration. This Agreement is an integrated agreement. It supersedes all prior negotiations, representations, or agreements, either written or oral.

20. Modification. This Agreement and each provision contained herein may be waived, amended, supplemented or eliminated only by mutual written agreement of the parties.

21. Notices. Any notices sent to the parties relating to this Agreement shall be sent by first class mail, postage prepaid or delivered to the following addresses:

Marc Stout, City Engineer
City of Roseville
311 Vernon Street
Roseville, CA 95678

Sierra Vista Communities LLC
1025 Creekside Ridge Dr., #240
Roseville, CA 95661
Attn: Larry Gualco

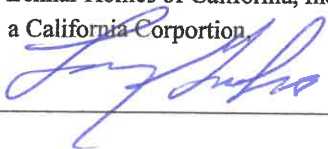
Either party may amend its address by giving written notice to the other.

22. Severability. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attestation by its City Clerk under authority of Resolution No. ____, adopted by the Council of the City of Roseville on the ____ day of _____, 20__, and SUBDIVIDER has caused this Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation,

BY: _____
DOMINICK CASEY
City Manager

Sierra Vista Communities LLC _____,
a California limited liability company
By Lennar Homes of California, Inc.
a California Corporation
BY:  _____
its: Managing Member

ATTEST:

and

BY: _____

BY: _____

SONIA OROZCO
City Clerk

its: _____

APPROVED AS TO FORM:

(NOTARIZATION REQUIRED)

BY: _____

ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUFFICIENCY:

BY: _____

MARC STOUT
City Engineer

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer } ss.

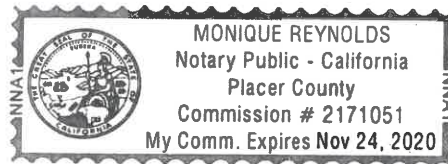
On June 1, 2020 before me, Monique Reynolds,
Notary Public, personally appeared Larry Gualco

who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Monique Reynolds
Signature



(seal)

OPTIONAL INFORMATION

Date of Document

Sierra Vista KT 2A

Thumbprint of Signer

Type or Title of Document

Number of Pages in Document

Document in a Foreign Language

Type of Satisfactory Evidence:

- ☐ Personally Known with Paper Identification
☐ Paper Identification
☐ Credible Witness(es)

Capacity of Signer:

- ☐ Trustee
☐ Power of Attorney
☐ CEO / CFO / COO
☐ President / Vice-President / Secretary / Treasurer
☐ Other: _____

☐ Check here if no thumbprint or fingerprint is available.

Other Information: _____



COUNCIL COMMUNICATION

CC #: 0856

File #: 0400-04-12-1 & 0400-07

Title: Sierra Vista KT-3A - Final Map and Subdivision Agreement

Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 7.9.

RECOMMENDATION TO COUNCIL

Staff recommends that the City Council take the following actions:

1. Approve the final map on file with the City Clerk and accept on behalf of the public, subject to improvement, Lots A, B, & C and the rights of way and the easements offered thereon.
2. Adopt the attached resolution approving the Subdivision Agreement and authorize the City Manager to execute the agreement on behalf of the City.

BACKGROUND

The Development Services, Engineering section, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 110 residential lots and 3 public landscape lots.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

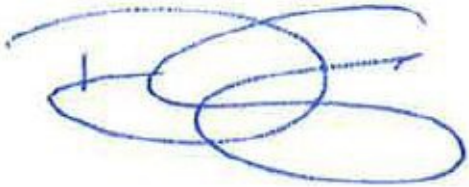
Approval of the Sierra Vista KT 3A final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Sierra Vista KT-3A final map was accomplished with preparation of the Sierra Vista Specific Plan EIR (Adopted: May 5, 2010) (SCH#2008032017) and the Mitigated Negative Declaration (MND) and associated Mitigation Monitoring Program approved by the City of Roseville on June 6, 2012. Because the Sierra Vista KT-3A final map is consistent with the project evaluated in the Sierra Vista Specific Plan Environmental Impact Report (EIR), no new effects would be expected to occur and all applicable mitigation measures from the Sierra Vista Specific Plan EIR will be implemented. As such, no

additional CEQA action is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director

A handwritten signature in blue ink, consisting of several overlapping loops and a horizontal line, positioned above a horizontal line.

Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

Resolution No. 20-267

Subdivision Agreement

OWNER'S STATEMENT

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTEREST IN THE REAL PROPERTY INCLUDED WITHIN THE SUBDIVISION SHOWN UPON THIS FINAL MAP OF "SIERRA VISTA KT-3A" AND THEY HEREBY CONSENT TO THE PREPARATION AND RECORDATION OF THIS FINAL MAP AND HEREBY OFFER FOR DEDICATION AND DO HEREBY DEDICATE FOR SPECIFIC PURPOSES THE FOLLOWING:

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS EASEMENT FOR PUBLIC PURPOSES:

(A) PUBLIC EASEMENT FOR THE INSTALLATION AND MAINTENANCE OF, BUT NOT LIMITED TO ELECTROLIERS, WATER AND GAS PIPES, SEWER AND DRAINAGE PIPES, AND FOR UNDERGROUND WIRE AND CONDUITS FOR ELECTRIC, TELEPHONE AND TELEVISION SERVICES AND TRAFFIC CONTROL APPURTENANCES TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER AND ACROSS LOTS 'A', 'B', 'C' AND THOSE STRIPS OF LAND LYING CONTIGUOUS TO THE RIGHT OF WAY AS SHOWN HEREON AND DESIGNATED "P.U.E." (PUBLIC UTILITY EASEMENT).

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED IN FEE FOR PUBLIC PURPOSES:

(A) AS PUBLIC RIGHT OF WAY (INCLUDING ALL IMPROVEMENTS THEREON) LOT 'A', LOT 'B', LOT 'C' AND THE STREETS SHOWN HEREON AS CHULA WAY, MAMBO WAY, MAMBO COURT, FLAMENCO WAY, SWING WAY, FOX TROT WAY, HULA WAY AND VISTA PARK DRIVE.

SIERRA VISTA COMMUNITIES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

BY: AKT INVESTMENTS, INC., A CALIFORNIA CORPORATION

BY: _____
NAME: _____
ITS: _____

BY: _____
NAME: _____
ITS: _____

BY: LENNAR HOMES OF CALIFORNIA INC. A CALIFORNIA CORPORATION

BY: _____
NAME: _____
ITS: _____

BY: _____
NAME: _____
ITS: _____

NOTARY’S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY
APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

FINAL MAP OF SIERRA VISTA – KT-3A
SUBDIVISION NUMBER PL17-0305

BEING ALL OF LOT 4 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVSION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020

M U R R A Y S M I T H & A S S O C I A T E S
SHEET 1 OF 8

NOTARY’S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY
APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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MY COMMISSION EXPIRES ON: _____

NOTARY’S ACKNOWLEDGMENT

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STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY
APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

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STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY
APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

FINAL MAP OF SIERRA VISTA – KT-3A
SUBDIVISION NUMBER PL17-0305
BEING ALL OF LOT 4 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES
LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL
RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF
SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
M U R R A Y S M I T H & A S S O C I A T E S
SHEET 2 OF 8

SURVEYOR'S STATEMENT

THIS FINAL MAP OF "SIERRA VISTA - KT-3A" WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS
BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP
ACT AND LOCAL ORDINANCE AT THE REQUEST OF SIERRA VISTA COMMUNITIES, LLC, A CALIFORNIA
LIMITED LIABILITY COMPANY, ON DECEMBER 2018. I HEREBY STATE THAT ALL THE MONUMENTS ARE
OF THE CHARACTER AND OCCUPY THE POSITIONS INDICATED OR THAT THEY WILL BE SET IN THOSE
POSITIONS BEFORE DECEMBER 31, 2021, AND THAT THE MONUMENTS ARE, OR WILL BE SUFFICIENT TO
ENABLE THE SURVEY TO BE RETRACED, AND THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE
CONDITIONALLY APPROVED TENTATIVE MAP.

MICHAEL S. COSTA LS 6600
EXPIRATION DATE: 12-31-21

DATE



CITY ENGINEER'S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS FINAL MAP OF "SIERRA VISTA - KT-3A" AND FIND IT TO BE
SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS
THEREOF, THAT ALL PROVISION OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES
HAVE BEEN COMPLIED WITH.

MARC STOUT R.C.E. 69879
CITY ENGINEER, CITY OF ROSEVILLE
LICENSE EXPIRES SEPTEMBER 30, 2020

DATE

I HEREBY STATE THAT I AM SATISFIED THAT THIS FINAL MAP OF "SIERRA VISTA - KT-3A" IS TECHNICALLY
CORRECT.

FOR MARC STOUT CITY ENGINEER, CITY OF ROSEVILLE

TIMOTHY G. BLAIR, PLS 8278
EXPIRES DECEMBER 31, 2021

DATE



CITY CLERK'S STATEMENT

I HEREBY CERTIFY THAT THE CITY COUNCIL, CITY OF ROSEVILLE, HAS APPROVED THIS FINAL MAP OF
"SIERRA VISTA - KT-3A" AND HAS ACCEPTED ON BEHALF OF THE PUBLIC SUBJECT TO IMPROVEMENT,
LOTS 'A', 'B' AND 'C' AND THE RIGHTS OF WAYS AND EASEMENTS OFFERED HEREON FOR DEDICATION.

CITY CLERK, CITY OF ROSEVILLE

DATE

BY: _____
ASSISTANT CITY CLERK

RECORDER'S STATEMENT

FILED THIS ____ DAY OF _____, 20__ AT _____.M. IN BOOK ____ OF MAPS, AT PAGE _____, IN
THE OFFICE OF THE PLACER COUNTY RECORDER, AT THE REQUEST OF MSA ENGINEERING, INC.

RECORDER OF PLACER COUNTY
STATE OF CALIFORNIA

DOCUMENT NO.: _____

BY: _____
DEPUTY

FEE \$ _____

FINAL MAP OF SIERRA VISTA - KT-3A
SUBDIVISION NUMBER PL17-0305

BEING ALL OF LOT 4 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020

MURRAY SMITH & ASSOCIATES

LEGEND

- ...MONUMENT TO BE SET PER THAT FINAL MAP OF "SIERRA VISTA-FEDERICO LARGE LOT SUBDIVISION, SUBDIVISION NO. PL 15-0192" RECORDED IN BOOK EE OF MAPS, AT PAGE 6, OFFICIAL RECORDS OF PLACER COUNTY
- ...5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600" SET PER THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION, SUBDIVISION NUMBER: PL 15-0192" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY
- ...COPPERWELD SURVEY MONUMENT WITH CENTER PUNCH IN MONUMENT WELL STAMPED "LS 6600" TO BE SET PER THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION, SUBDIVISION NUMBER PL 15-0192" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY
- ...SET 5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600"
- ...SET COPPERWELD SURVEY MONUMENT WITH CENTER PUNCH IN MONUMENT WELL STAMPED "LS 6600"
- ...DIMENSION POINT
- B.M. ...BOOK OF MAPS
- (R) ...RADIAL
- (OA) ...OVERALL
- P.U.E. ...PUBLIC UTILITY EASEMENT

REFERENCES

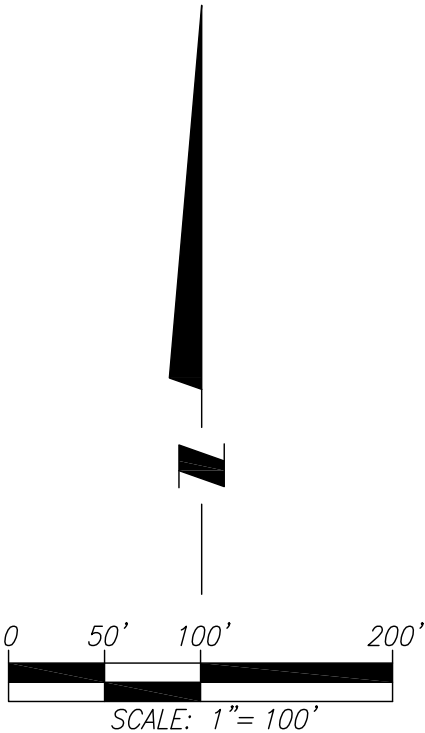
- (1) PER BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS MAP IS THE CENTERLINE OF WESTBROOK BOULEVARD AS SHOWN IN BOOK EE OF MAPS, PAGE 33 OFFICIAL RECORDS OF PLACER COUNTY AND ESTABLISHED BY THE MONUMENTS SHOWN HEREON. THE BEARING IS N0°38'17"W.

NOTES

- ALL CURVES DIMENSIONED WITH LENGTH, RADIUS, DELTA, CHORD BEARING AND CHORD DISTANCE.
- ALL DISTANCES SHOWN HEREON ARE EXPRESSED IN FEET AND DECIMALS THEREOF.
- DUE TO ROUNDING, THE SUM OF THE INDIVIDUAL DIMENSIONS MAY NOT EQUAL THE OVERALL DIMENSION.
- TOTAL AREA FOR THIS "FINAL MAP OF SIERRA VISTA - KT-3A" SUBDIVISION IS 22.305± AC. GROSS, CONSISTING OF 110 RESIDENTIAL DEVELOPMENT LOTS AND 3 LANDSCAPE LOTS.
- ALL REAR LOT CORNERS WILL BE SET WITH A 5/8" REBAR WITH A PLASTIC PLUG STAMPED "LS 6600", WHERE MONUMENTS FALL ADJACENT TO A RETAINING WALL, SOUNDWALL OR CONCRETE FOOTING A 5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600" WILL BE SET ON THE SIDE LOT LINE 2.00' OFFSET TO THE REAR LOT CORNER AS SHOWN.
- A 1-5/32" BRASS DISK STAMPED "LS 6600" WILL BE SET IN THE SIDEWALK ON THE PROJECTION OF THE SIDE LOT LINES 1.00 FOOT FROM THE PROPERTY CORNER.
- A SOUNDWALL IS ADJACENT TO LOTS: 1 THROUGH 18, 71 THROUGH 80, LOT 'A', LOT 'B' AND LOT 'C'.
- A GEOTECHNICAL ENGINEERING REPORT ENTITLED "SIERRA VISTA RESIDENTIAL DEVELOPMENT" WAS PREPARED BY WALLACE KUHLMAN & ASSOCIATES, WKA NO. 11712.01, DATED JANUARY 10, 2018. A COPY OF THIS REPORT IS AVAILABLE FOR PUBLIC INSPECTION AT THE CITY OF ROSEVILLE ENGINEERING DEPARTMENT, FILE NO. 308-879.
- CONDITIONS, COVENANTS AND RESTRICTIONS (CC&R'S) ARE BEING RECORDED CONCURRENTLY WITH THIS FINAL MAP IN DOCUMENT NO.: 2020-0042952.



LOT 5
EE B.M. 33
WESTBROOK BOULEVARD (I.O.D./R.O.W.)(1)
BASIS OF BEARINGS
N0°38'17"W 805.96' (1)
N4°07'32"E 120.42' (1)
N0°38'17"W 220.00' (1)
N0°38'17"W 328.80' (1)
N89°21'43"E (1) 90.00' (1)

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N89°21'43"E (1)	9.00' (1)
L2	N81°36'42"W (1)	60.83' (1)
L3	N79°27'50"E (1)	60.83' (1)
L4	N88°55'34"E (1)	34.00' (1)
L5	N0°38'17"W (1)	150.00' (1)
L6	N79°58'23"W (1)	4.00' (1)
L7	N0°38'17"W (1)	219.72' (1)
L8	N0°38'17"W (1)	42.00' (1)
L9	N0°38'17"W (1)	418.00' (1)
L10	N89°21'43"E (1)	31.83' (1)
L11	N0°38'17"W (1)	15.00' (1)
L12	N0°38'17"W (1)	105.00' (1)
L13	N89°21'43"E (1)	78.00' (1)

LINE TABLE		
LINE #	BEARING	DISTANCE
L14	N89°21'43"E (1)	42.00' (1)
L15	N89°21'43"E (1)	78.00' (1)
L16	N0°38'17"W (1)	120.00' (1)
L17	N89°21'43"E (1)	100.00' (1)
L18	N0°38'17"W (1)	20.08' (1)
L19	N89°21'43"E (1)	42.00' (1)
L20	N89°21'43"E (1)	102.84' (1)
L21	N0°38'17"W (1)	54.50' (1)
L22	N0°38'17"W (1)	20.72' (1)
L23	N0°38'17"W (1)	242.00' (1)
L24	N0°38'17"E (1)	504.00' (1)
L25	N89°21'43"E (1)	45.00' (1)
L26	N0°38'17"W (1)	21.00' (1)
L27	N89°21'43"E (1)	45.00' (1)

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	48.69' (1)	31.00' (1)	90°00'00" (1)	N45°38'17"W (1)	43.84' (1)
C2	78.16' (1)	50.00' (1)	89°33'51" (1)	N44°08'39"E (1)	70.44' (1)
C3	48.69' (1)	31.00' (1)	90°00'00" (1)	N46°04'26"W (1)	43.84' (1)
C4	48.69' (1)	31.00' (1)	90°00'00" (1)	N43°55'34"E (1)	43.84' (1)
C5	48.93' (1)	31.00' (1)	90°26'09" (1)	N45°51'22"W (1)	44.01' (1)
C6	105.05' (1)	381.00' (1)	15°47'54" (1)	N7°15'40"E (1)	104.72' (1)
C7	37.54' (1)	419.00' (1)	5°08'00" (1)	N12°35'37"E (1)	37.53' (1)
C8	78.74' (1)	423.00' (1)	10°39'54" (1)	N4°41'40"E (1)	78.62' (1)
C9	34.56' (1)	22.00' (1)	90°00'00" (1)	N44°21'43"E (1)	31.11' (1)
C10	34.56' (1)	22.00' (1)	90°00'00" (1)	N45°38'17"W (1)	31.11' (1)
C11	34.56' (1)	22.00' (1)	90°00'00" (1)	N44°21'43"E (1)	31.11' (1)
C12	51.17' (1)	2286.00' (1)	1°16'57" (1)	N88°43'14"E (1)	51.17' (1)
C13	34.56' (1)	22.00' (1)	90°00'00" (1)	N44°21'43"E (1)	31.11' (1)
C14	34.56' (1)	22.00' (1)	90°00'00" (1)	N45°38'17"W (1)	31.11' (1)
C15	9.82' (1)	22.00' (1)	25°34'59" (1)	N13°25'46"W (1)	9.74' (1)



FINAL MAP OF SIERRA VISTA - KT-3A
SUBDIVISION NUMBER PL17-0305

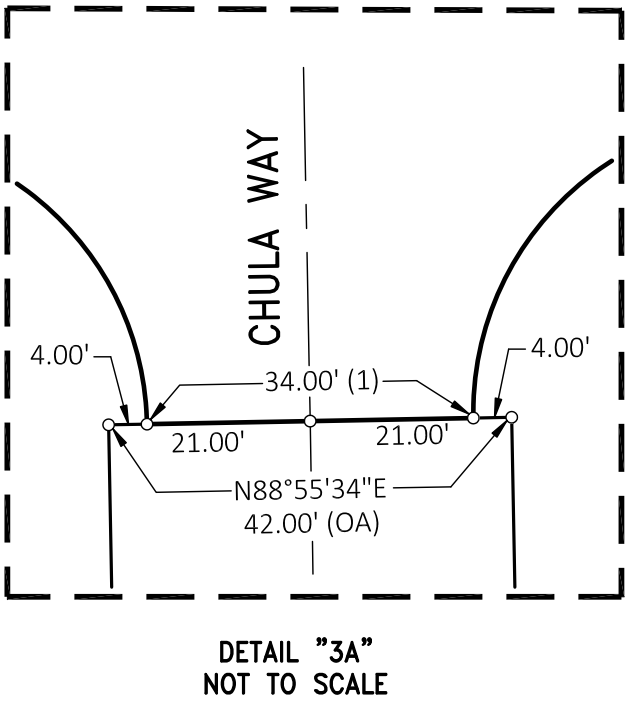
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CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
MURRAY SMITH & ASSOCIATES

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C21(OA)	34.72'	22.00'	90°26'09"	N44°08'39"E	31.23'
C22	15.77'	32.00'	28°14'33"	N76°31'00"W	15.61'
C23(OA)	132.95'	52.00'	146°29'06"	N44°21'43"E	99.58'
C24	15.77'	32.00'	28°14'33"	N14°45'34"W	15.61'
C25	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C26	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'

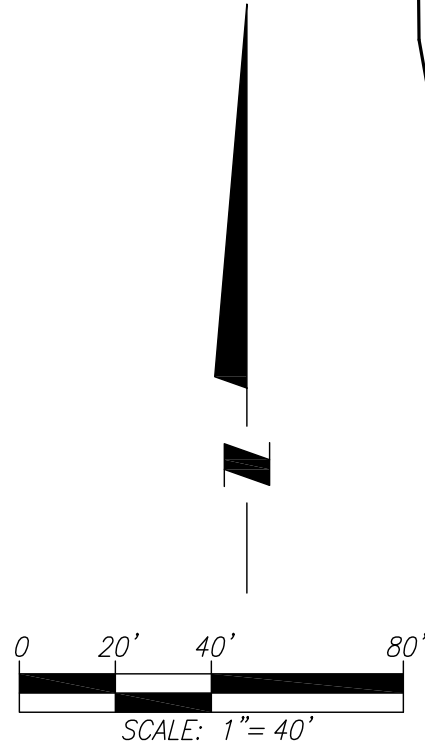
CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C27	24.73'	22.00'	64°25'01"	N31°08'05"E	23.45'
C28	9.99'	22.00'	26°01'08"	N76°21'09"E	9.90'
C29	33.17'	52.00'	36°32'38"	N80°40'03"W	32.61'
C30	39.94'	52.00'	44°00'23"	N22°55'34"E	38.96'
C31	27.05'	52.00'	29°48'12"	N13°58'44"W	26.74'
C32	32.79'	52.00'	36°07'53"	N62°59'42"E	32.25'

SEE SHEET 3 FOR NOTES AND LEGEND

LOT 26
EE B.M. 6



LOT 5
EE B.M. 33



WESTBROOK BOULEVARD (I.O.D./R.O.W.)(1)



SEE SHEET 7

SEE SHEET 5

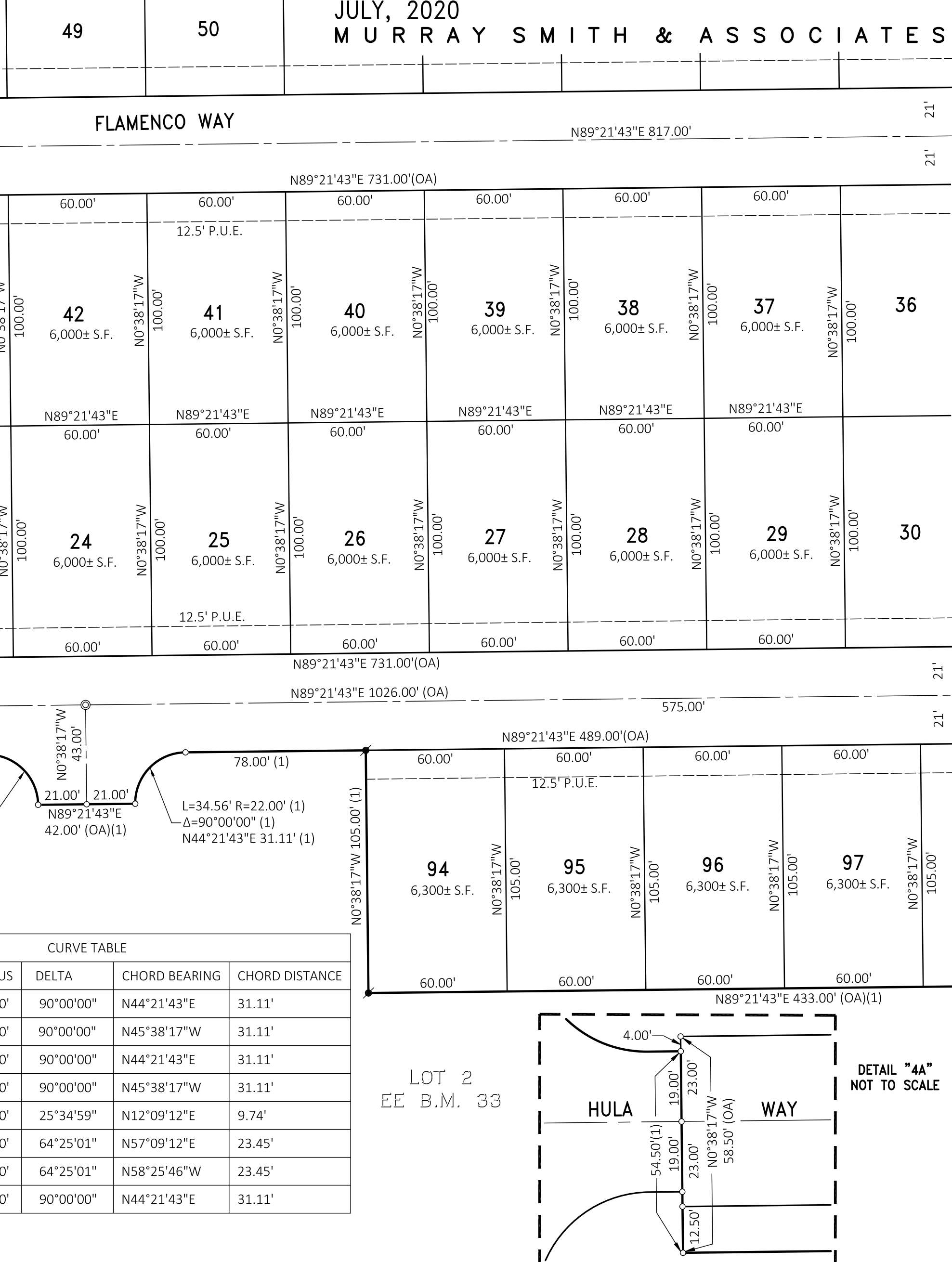
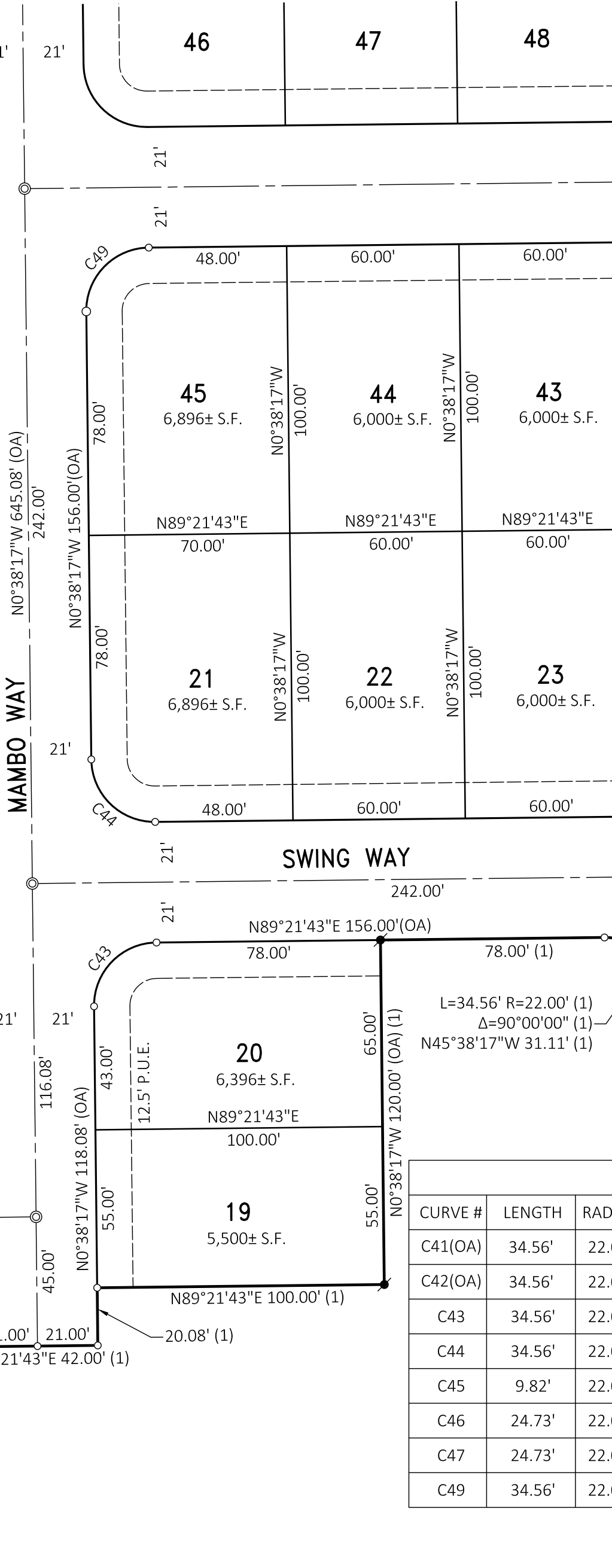
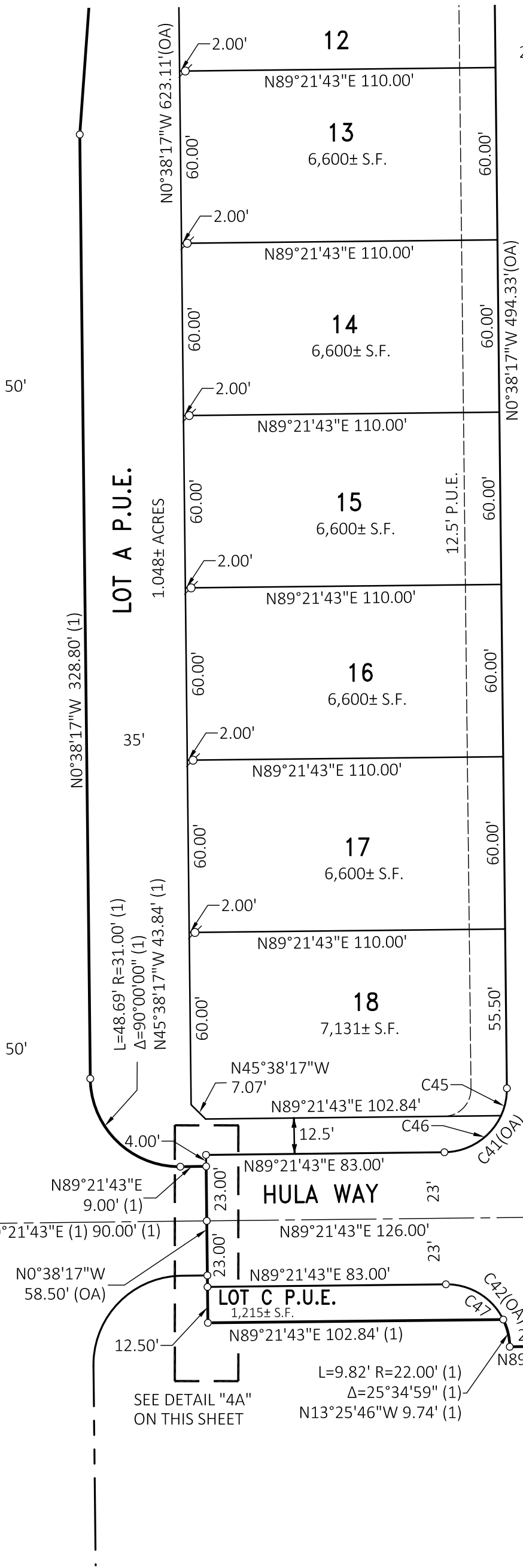
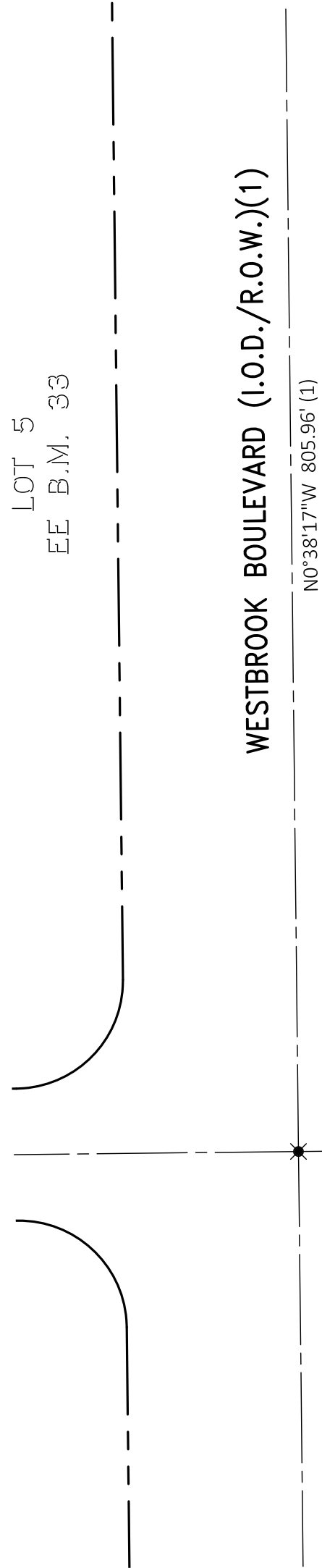
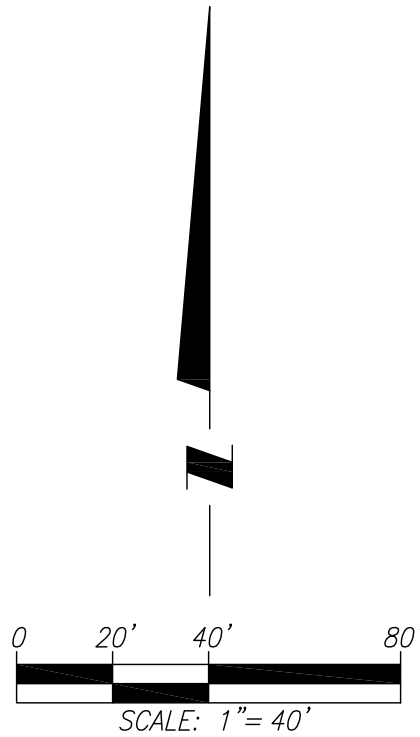
FINAL MAP OF SIERRA VISTA - KT-3A
SUBDIVISION NUMBER PL17-O305

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JULY, 2020

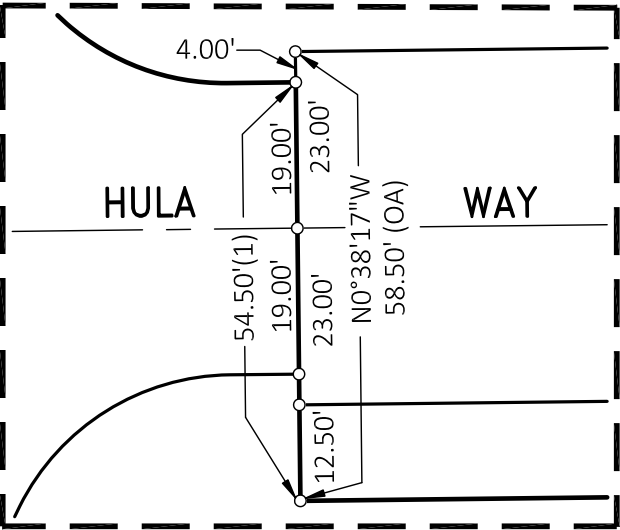
MURRAY SMITH & ASSOCIATES

SEE SHEET 3 FOR NOTES AND LEGEND

SEE SHEET 4



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C41(OA)	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C42(OA)	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C43	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C44	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C45	9.82'	22.00'	25°34'59"	N12°09'12"E	9.74'
C46	24.73'	22.00'	64°25'01"	N57°09'12"E	23.45'
C47	24.73'	22.00'	64°25'01"	N58°25'46"W	23.45'
C49	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'



FINAL MAP OF SIERRA VISTA - KT-3A
SUBDIVISION NUMBER PL17-0305

BEING ALL OF LOT 4 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES
LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL
RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF
SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
MURRAY SMITH & ASSOCIATES

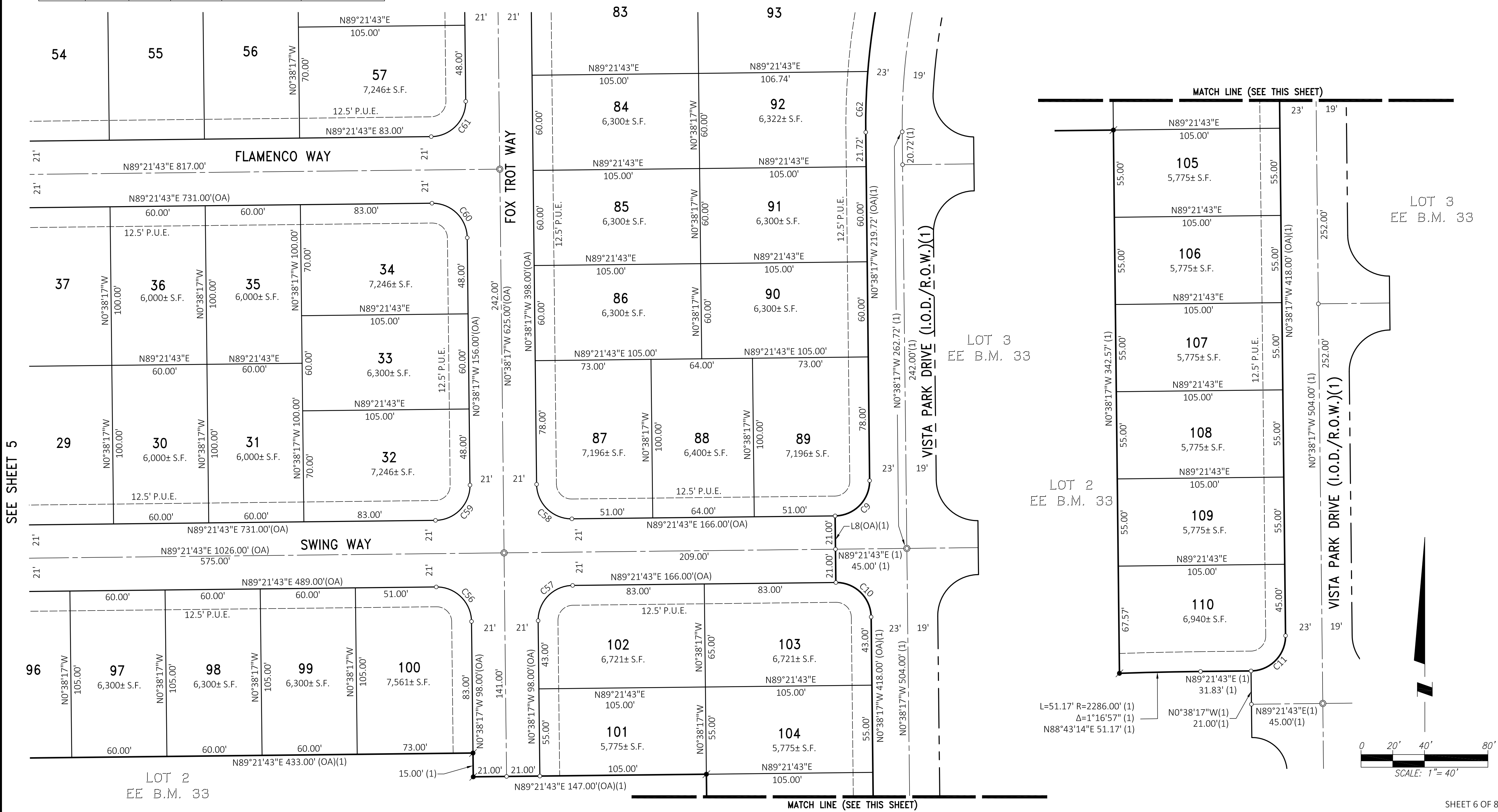
CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C56	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C57	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C58	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C59	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C60	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C61	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C62	38.33'	423.00'	5°11'32"	N1°57'30"E	38.32'

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C9	34.56' (1)	22.00' (1)	90°00'00" (1)	N44°21'43"E (1)	31.11' (1)
C10	34.56' (1)	22.00' (1)	90°00'00" (1)	N45°38'17"W (1)	31.11' (1)
C11	34.56' (1)	22.00' (1)	90°00'00" (1)	N44°21'43"E (1)	31.11' (1)

LINE TABLE		
LINE #	BEARING	DISTANCE
L8	N0°38'17"W (1)	42.00' (1)

SEE SHEET 3 FOR NOTES AND LEGEND

SEE SHEET 7

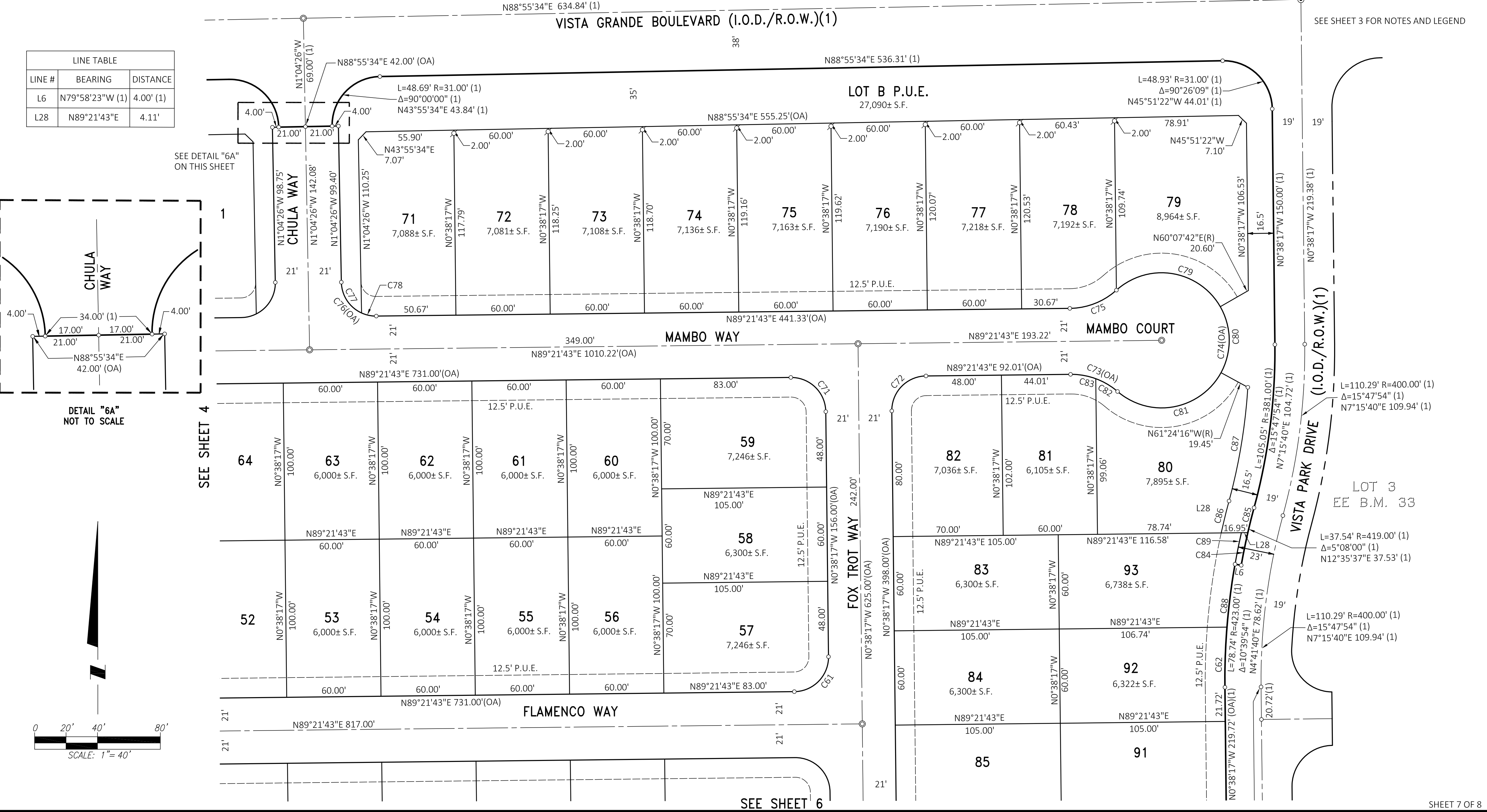


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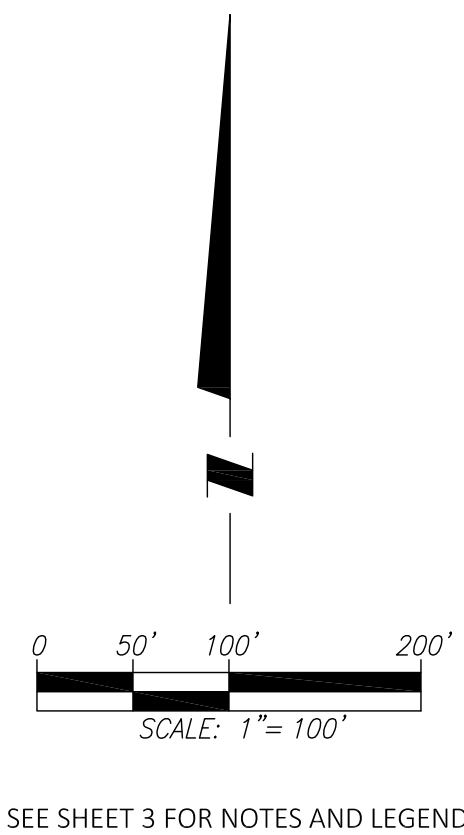
CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C61	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C62	38.33'	423.00'	5°11'32"	N1°57'30"E	38.32'
C71	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C72	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C73(OA)	32.52'	45.00'	41°24'35"	N69°56'00"W	31.82'
C74(OA)	197.24'	43.00'	262°49'09"	N0°38'17"W	64.50'
C75	32.52'	45.00'	41°24'35"	N68°39'26"E	31.82'

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C76(OA)	34.39'	22.00'	89°33'51"	N45°51'21"W	30.99'
C77	24.73'	22.00'	64°25'01"	N33°16'57"W	23.45'
C78	9.66'	22.00'	25°08'50"	N78°03'52"W	9.58'
C79	76.68'	43.00'	102°10'34"	N80°57'35"W	66.92'
C80	43.88'	43.00'	58°28'02"	N0°38'17"W	42.00'
C81	76.68'	43.00'	102°10'34"	N79°41'01"E	66.92'
C82	16.18'	45.00'	20°35'57"	N59°31'41"W	16.09'

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C83	16.34'	45.00'	20°48'36"	N80°13'58"W	16.25'
C84	21.22'	419.00'	2°54'04"	N11°28'39"E	21.21'
C85	16.32'	419.00'	2°13'56"	N14°02'39"E	16.32'
C86	20.94'	435.50'	2°45'20"	N13°46'57"E	20.94'
C87	73.46'	364.50'	11°32'51"	N9°23'11"E	73.34'
C88	40.40'	423.00'	5°28'21"	N7°17'27"E	40.39'
C89	20.45'	423.00'	2°46'13"	N11°24'44"E	20.45'



FINAL MAP OF SIERRA VISTA - KT-3A
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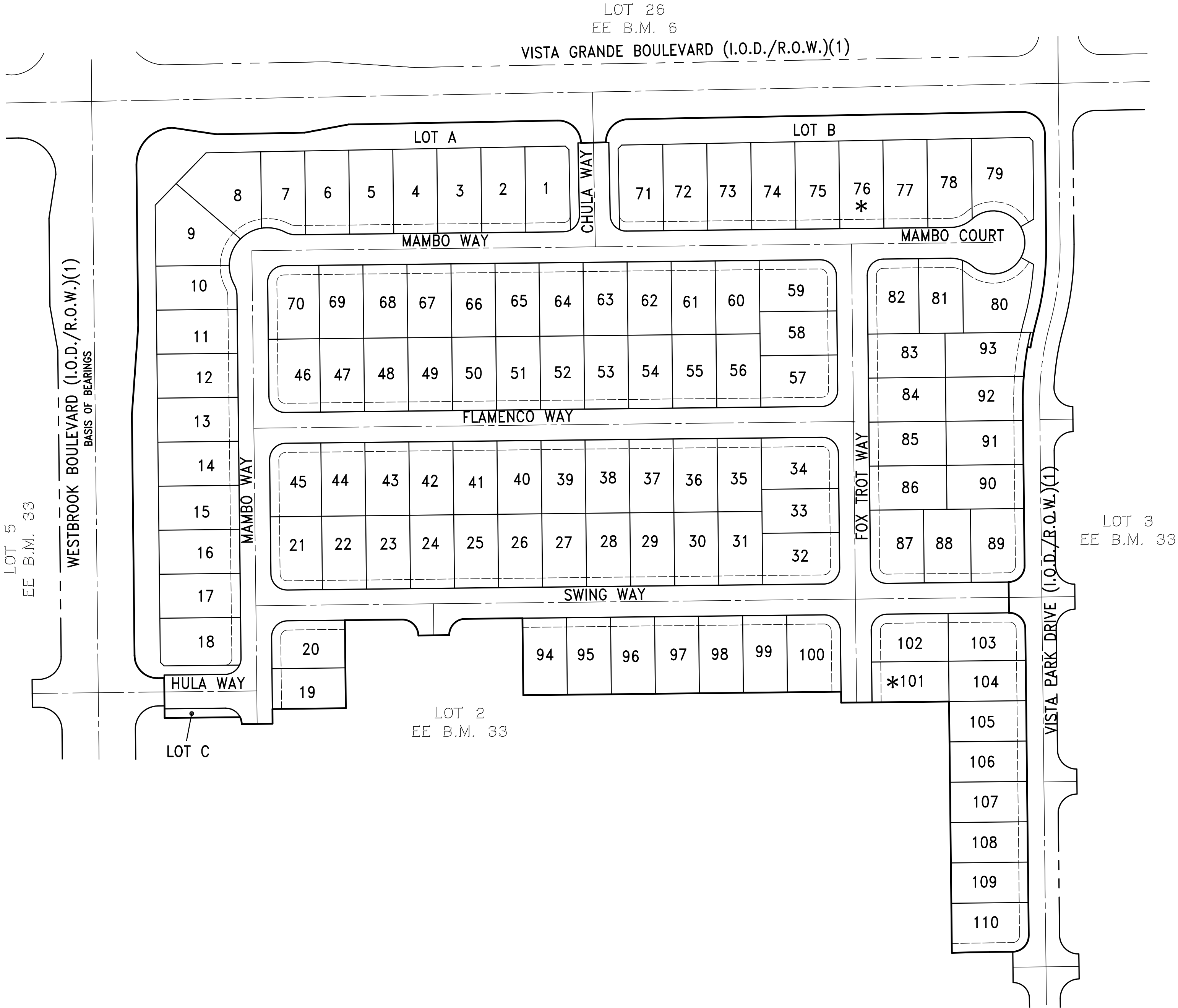


ADDITIONAL INFORMATION FOR INFORMATIONAL PURPOSE ONLY
PURSUANT TO SECTION 66434.2 OF THE GTOVERNMENT CODE

EACH RESIDENTIAL DWELLING CONSTRUCTED ON ANY OF THE LOTS
INDICATED SHALL BE FITTED WITH A SEWER BACKFLOW
PREVENTER VALVE AS APPROVED BY THE CITY OF ROSEVILLE. IT
SHALL BE THE RESPONSIBILITY OF THE OWNER OF SAID DWELLING
TO MAINTAIN THE VALVE AND PREVENT DAMAGE FROM
OCCURRING THERETO. THE CITY OF ROSEVILLE SHALL NOT BE
RESPONSIBLE FOR THE MAINTENANCE OR PERFORMANCE OF THE
VALVE, AND THE CITY OF ROSEVILLE SHALL NOT BE LIABLE FOR ANY
DAMAGE OCCURRING TO ANY SUCH DWELLING OR ITS CONTENTS
DUE TO FAILURE OF THE VALVE FOR ANY REASON WHATSOEVER.

LEGEND

* DENOTES SEWER BACKFLOW PREVENTER VALVE REQUIRED ON
SANITARY SEWER CONNECTION BY THE CITY OF ROSEVILLE WITH
THE BUILDING PERMIT AND MAINTAINED THEREAFTER BY THE
OWNER.



RESOLUTION NO. 20-267

APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND SIERRA VISTA COMMUNITIES, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a subdivision agreement, by and between the City of Roseville and Sierra Vista Communities, LLC, for the Sierra Vista KT – 3A subdivision, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said agreement is approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**RECORDING REQUESTED BY AND WHEN
RECORDED, PLEASE RETURN TO:**

**City Clerk
CITY OF ROSEVILLE
311 Vernon Street
Roseville, CA 95678**

SUBDIVISION AGREEMENT

SIERRA VISTA -KT - 3A SUBDIVISION

THIS AGREEMENT, made and entered into this ____ day of _____,
20____, by and between the CITY OF ROSEVILLE, a municipal corporation ("CITY"), and
SIERRA VISTA COMMUNITIES, LLC,
a CALIFORNIA LIMITED LIABILITY COMPANY, ("SUBDIVIDER"),

W I T N E S S E T H:

WHEREAS, SUBDIVIDER is possessed of a tract of land lying in the City of Roseville,
County of Placer, known as "SIERRA VISTA - KT-3A Subdivision" (Subdivision
no. PL17-0305; "the Subdivision"); and

WHEREAS, a tentative map of the Subdivision was approved by the City Planning
Commission on the 10 day of December, 2015, and the final map of the Subdivision
has been approved subject to the execution of this Agreement; and

WHEREAS, the final map has been filed on the ____ day of _____, 20__ in
Book _____ of Parcel/Subdivision Maps at Page _____ in the Official Records, Placer
County Recorder, file no. _____; and

WHEREAS, Section 18.20.110 of the Roseville Municipal Code, regulating the subdivision of land in the City, requires that SUBDIVIDER shall execute and file an agreement between itself and CITY relating to the improvements to be made in a subdivision, prior to the approval by the City Council of the final map.

NOW, THEREFORE, the parties agree as follows:

1. Rights-of-Way. Except as otherwise provided by this Agreement, CITY rejects all lands, right-of-ways, and easements offered for dedication on the final map of the Subdivision. All such offers shall, however, remain open, and shall constitute irrevocable offers of dedication in accordance with Government Code Section 66477.2. All such offers may be accepted by CITY in its sole discretion at any later date without further notice to SUBDIVIDER as provided by law.

By way of explanation only, it is the current intention of CITY to accept all or part of such irrevocable offers to dedicate upon acceptance of the improvements called for in this Agreement.

2. Improvements - Time Limit. SUBDIVIDER agrees to cause all improvements to be made and constructed in the Subdivision to fully comply with the requirements of the Roseville Municipal Code and the Subdivision Map Act of the State of California according to the improvement plans for the Subdivision prepared by MSA Engineering, Inc., dated June 27, 2019 and approved by the City Engineer and including any changes or alterations to such improvements required by the City Engineer, and to install, on or before December 31, 2021, such survey monuments as may be required by the City Engineer ("the Work"). SUBDIVIDER agrees to pay for any materials, provisions or other supplies used in, upon, for or about the performance of the Work, or for any work or labor of any kind done in

connection with the Work, or for any amounts due under the Unemployment Insurance Act with respect to such work or labor.

SUBDIVIDER agrees to complete all of the Work on or before twenty-four (24) months from the date of this Agreement. If in the opinion of the City Engineer of CITY, an extension of this Agreement is not detrimental to the public welfare, he or she is, in his or her sole discretion, hereby authorized to extend the time within which the Work shall be completed for a period not to exceed twelve (12) months. Upon a written application made by SUBDIVIDER, further extensions, not to exceed an additional six (6) months, shall be reviewed and approved at the discretion of the City Engineer of CITY. Any such application extension request by SUBDIVIDER shall fully state the grounds and facts relied upon for the granting of additional extensions.

In the event that SUBDIVIDER shall fail to complete the Work within the time provided by this Agreement, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, enter upon the Subdivision and complete the Work and recover the full cost and expense of such construction from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

If at anytime prior to the expiration of the time provided by this Agreement the City Engineer of CITY determines that a safety hazard exists within an existing public right-of-way, the City Engineer shall give written notice to SUBDIVIDER to eliminate the safety hazard. If SUBDIVIDER fails to eliminate the safety hazard within five (5) calendar days of the written notice, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, eliminate the safety hazard and recover the full cost and expense of such work from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

3. Acquisition and Dedication of Easements or Rights-of-Ways. If any of the Work is to be constructed or installed on land not within the Subdivision or already existing public right-of-way, no construction or installation shall be commenced before:

a. The irrevocable offer of dedication or conveyance to CITY of appropriate right-of-ways, easements or other interest in real property, and appropriate authorization from the property owner to allow construction or installation of the improvements or work; or

b. The issuance of an order of possession by a court of competent jurisdiction pursuant to the State Eminent Domain Law. SUBDIVIDER shall comply in all respects with any such order of possession.

Nothing in this Section 3 shall be construed as authorizing or granting an extension of time to SUBDIVIDER for completion of the Work.

4. Inspection Fees and Costs. The City Engineer shall inspect all of the Work improvements made in the Subdivision to see that they comply with CITY's subdivision regulations and specifications. SUBDIVIDER shall deposit the estimated inspection fee and reimburse CITY for the cost of such inspections in accordance with Roseville Municipal Code section 18.20.070.

5. Securities.

a. SUBDIVIDER shall file with this Agreement two (2) improvement securities as set forth in Roseville Municipal Code Sections 18.20.150 and 18.20.160. Each security shall be in the amount of one hundred percent (100%) of the total estimated cost of the Work as determined by the City Engineer which amount is the sum of \$ 2,503,946.38. One improvement security shall secure faithful performance of this Agreement as required by Section 66499.3(a) of the Government Code of the State of California (the "faithful performance" security). The second improvement security shall, as required by Section 66499.3(b) of the Government Code of the State of California, secure the obligations set forth in Title 15

(commencing with Section 3082) of Part 4 of Division 3 of the Civil Code of the State of California for payment to the contractor, his subcontractors and to persons renting equipment or furnishing labor or materials to them for the Work (the "payment security"). The improvement securities required under this paragraph shall also secure placement of monumentation and guarantee payment therefor as provided by California Government Code section 66496.

b. SUBDIVIDER shall also file with this Agreement a "guarantee and warranty security" in the amount of ten percent (10%) of the City Engineer's estimated cost of the Work as set forth in Section 18.20.170 of the Roseville Municipal Code to guarantee and warrant the Work for a period of one year following its completion and acceptance against any defective work or labor done, or defective materials furnished, as required by Section 66499(a)(5) of the Government Code of the State of California. The guarantee and warranty security shall be released upon SUBDIVIDER's request following expiration of the warranty period and subject to the reasonable determination of the City Engineer that SUBDIVIDER's warranty obligations have been satisfied.

c. Any bonds submitted as security pursuant to this section shall be executed by a surety company authorized to transact a surety business in the State of California. All required securities shall be in a form approved by the City Attorney of CITY.

6. Successors and Assigns – Covenant Running with the Land. This Agreement shall inure to the benefit of, and be binding upon, the successors and assigns of the respective parties. It shall be recorded in the Office of the Recorder of Placer County concurrently with the final map of the Subdivision, and shall constitute a covenant running with the land and an equitable servitude upon the real property within the Subdivision.

7. Acceptance of Improvements Upon Completion. Upon satisfactory completion of the Work, in accordance with this Agreement, CITY agrees to accept the Work and its

improvements and the offers of dedication described in paragraph 1, subject to the provisions of paragraphs 1 and 10 of this Agreement.

8. Notice Regarding Construction. SUBDIVIDER shall notify the City Engineer of CITY in writing three (3) days prior to the commencement of construction of the Work.

9. Subdivider's Obligation to Warn Public During Construction. Until final acceptance of the Work, SUBDIVIDER shall give good and adequate warning to the public of each and every dangerous condition which may exist in the Work, and will take all reasonable actions to protect the public from any such dangerous condition.

10. Warranty.

a. SUBDIVIDER guarantees and warrants the public improvements which constitute the Work required by this Agreement, and agrees to remedy any defects in the improvements or the Work arising from faulty or defective materials or construction of said improvements or the Work occurring within twelve (12) months after their acceptance by CITY. SUBDIVIDER agrees to permit inspection of all improvements in the Subdivision by the City Engineer of CITY for such period, and to reimburse CITY for the cost of such inspections.

b. If, within the warranty period, the Work or improvement or any part of the Work done, furnished, installed, or constructed fails to fulfill any of the requirements of this Agreement or the improvement plans and specifications, SUBDIVIDER shall, without delay or cost to CITY, repair, replace or reconstruct any defective or otherwise unsatisfactory part or parts of the Work. CITY may, at its sole option, perform such repair or replacement itself if SUBDIVIDER has failed to commence such repair within twenty (20) days after CITY has mailed written notice of default to SUBDIVIDER and to SUBDIVIDER'S Surety. In such event, SUBDIVIDER agrees to pay the cost of such repair and replacement by CITY and CITY may, at its option, recover such cost as a lien against the Subdivision should the cost exceed the inspection fee deposited pursuant to paragraph 4 of this Agreement.

Should CITY determine that the public safety requires repairs or replacements to be made before SUBDIVIDER can be notified, CITY may, in its sole discretion, make the necessary repairs or replacement or perform the necessary work. SUBDIVIDER shall pay to CITY the cost of such repairs and CITY may at its option recover such cost as a lien against the Subdivision.

11. Indemnification. To the fullest extent allowed by law, SUBDIVIDER shall defend, indemnify, and save and hold harmless CITY, its officers, agents, employees and volunteers from any claims, suits or actions of every name, kind and description brought forth, or on account of, injuries to or death of any person (including but not limited to workers and the public), or damage to property, resulting from or arising out of SUBDIVIDER 's willful misconduct or negligent act or omission while engaged in the performance of obligations or exercise of rights created by this Agreement, except those matters arising from CITY's sole or active negligence or willful misconduct. The parties intend that this provision shall be broadly construed.

SUBDIVIDER's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law. The defense and indemnity obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.

12. Insurance. SUBDIVIDER agrees to continuously maintain, in full force and effect, at a minimum the following policies of insurance during the term of this Agreement.

COVERAGE

General Liability

Automobile Liability

LIMITS OF LIABILITY

\$2,000,000 per occurrence

\$4,000,000 aggregate

Personal Injury:

\$2,000,000 per occurrence

\$4,000,000 aggregate

\$1,000,000 combined single limit

- a. Form. SUBDIVIDER shall submit a certificate evidencing such coverage for the period covered by this Agreement in a form satisfactory to Risk Management and the City Attorney, prior to undertaking any work hereunder. Any insurance written on a claims made basis is subject to the approval of Risk Management and the City Attorney.
- b. Additional Insureds. SUBDIVIDER shall also provide a separate endorsement form or section of the policy showing CITY, its officers, agents, employees and volunteers as additional insureds for each type of coverage, except for Workers' Compensation, for ongoing and completed operations. Such insurance shall specifically cover the contractual liability of SUBDIVIDER. The additional insured coverage under the SUBDIVIDER's policy shall be primary and noncontributory, as evidenced by a separate endorsement or section of the policy, and shall not seek contribution from CITY's insurance or self-insurance. In addition, the additional insured coverage shall be at least as broad as the Insurance Services Office ("ISO") CG 20 01 Endorsement. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.
- c. Cancellation/Modification. SUBDIVIDER shall provide ten (10) days written notice to CITY prior to cancellation or modification of any insurance required by this Agreement.
- d. Umbrella/Excess Insurance. The limits of insurance required in this Agreement may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply

on a primary and noncontributory basis for the benefit of CITY (if agreed to in a written contract) before CITY's own insurance shall be called upon to protect it as a named insured.

e. Self-Insured Retentions. All self-insured retentions ("SIR") must be disclosed to Risk Management for approval and shall not reduce the limits of liability. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or CITY. CITY reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

f. Waiver of Subrogation. SUBDIVIDER hereby agrees to waive subrogation which any insurer of SUBDIVIDER may acquire from SUBDIVIDER by virtue of the payment of any loss under a Workers Compensation, Commercial General Liability or Automobile Liability policy. All Workers Compensation, Commercial General Liability and Automobile Liability policies shall be endorsed with a waiver of subrogation in favor of CITY, its officers, agents, employees and volunteers for all work performed by SUBDIVIDER, its employees, agents and subcontractors.

g. Liability/Remedies. Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve SUBDIVIDER of liability in excess of such coverage, nor shall it preclude CITY from taking such other actions as are available to it under any other provisions of this Agreement or law.

13. Irrevocability of Security. The improvement securities furnished pursuant to paragraph 5 shall be irrevocable, shall not be limited as to time (except as to the one-year guarantee and warranty period specified in paragraph 10) and shall provide that they may be released, in whole or part, only upon the written approval of the City Engineer of CITY.

14. Attorney's Fees; Venue; Governing Law. Any action by any party to this Agreement, or any action concerning a security furnished pursuant to paragraph 5, shall be

brought in the appropriate court of competent jurisdiction within the County of Placer, State of California, notwithstanding any other provision of law which may provide that such action may be brought in some other location. In the event it becomes necessary for either party to bring an action with respect to enforcement of the provisions of this Agreement, or the security therefor, the prevailing party in such action shall be awarded a reasonable attorney's fee, as may be determined by the Court. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

15. Release of Faithful Performance Security. Release of faithful performance security shall be in compliance with and pursuant to the procedures set forth in Government Code Section 66499.7. Upon the completion of all secured Work by SUBDIVIDER and written acceptance of that completed Work by CITY, and the furnishing of the warranty security as required by paragraph 5(b), the City Engineer shall authorize the release of the remaining faithful performance security.

16. Release of Payment Security. Thirty-five (35) days after a notice of completion is recorded with respect to the Work, the City Engineer of CITY may authorize the release of the payment security, in the event that no claims have been filed against said security. In the event that claims or actions are filed against the security, the City Engineer may release so much of such security as is in excess of the total of the claims made against it, plus a reasonable amount of costs and attorney's fees.

17. Automatic Termination Upon Completion and Sale of Residential Unit. This Agreement and any lien pursuant hereto shall automatically be terminated, without any further action by either party or need to record any additional document, with respect to any single-family residential lot within a parcel designated by the Specific Plan for residential use, upon completion of construction and issuance by the City of a final inspection for a dwelling unit upon such residential lot and conveyance of such improved residential lot to a bona-fide good faith

purchaser thereof. In connection with its issuance of a final inspection for such improved lot, City shall confirm that: (i) all improvements which are required to serve the lot, as determined by City, have been accepted by City; (ii) the lot is included within the Maintenance CFD required by Section 3.20 or other financing mechanism acceptable to the City, to the extent required hereby; and (iii) if and to the extent applicable to such lot, an affordable purchase or rental housing agreement has been recorded on the lot. Termination of this Agreement for any such residential lot as provided for in this section shall not in any way be construed to terminate or modify any assessment district or Mello-Roos Community Facilities District lien affecting such lot at the time of termination.

18. Failure of Performance. In addition to any other remedies provided in this Agreement or by law, in the event SUBDIVIDER fails to perform one or more of the covenants or conditions of this Agreement, CITY shall have recourse to the security given to guarantee the performance of such acts. CITY may do, or cause to be done, those acts required of SUBDIVIDER, and shall have recourse against so much of the security as is necessary to discharge the responsibility of SUBDIVIDER. In the event CITY seeks recourse against a security, CITY shall also have recourse against SUBDIVIDER for any and all amounts necessary to complete the obligations of SUBDIVIDER in the event the security is insufficient to pay such amounts. All administrative costs, including reasonable attorney's fees pursuant to Section 66499.4 of the Government Code, incurred by CITY, in addition to the costs of the improvements, shall be a proper charge against the security and SUBDIVIDER.

19. Integration. This Agreement is an integrated agreement. It supersedes all prior negotiations, representations, or agreements, either written or oral.

20. Modification. This Agreement and each provision contained herein may be waived, amended, supplemented or eliminated only by mutual written agreement of the parties.

21. Notices. Any notices sent to the parties relating to this Agreement shall be sent by first class mail, postage prepaid or delivered to the following addresses:

Marc Stout, City Engineer
City of Roseville
311 Vernon Street
Roseville, CA 95678

Sierra Vista Communities LLC
1025 Creekside Ridge Dr., #240
Roseville, CA 95661
Attn: Larry Gualco

Either party may amend its address by giving written notice to the other.

22. Severability. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attestation by its City Clerk under authority of Resolution No. ____, adopted by the Council of the City of Roseville on the ____ day of ____, 20__, and SUBDIVIDER has caused this Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation,

BY: _____
DOMINICK CASEY
City Manager

Sierra Vista Communities LLC _____,
a California limited liability company
By Lennar Homes of California, Inc.
a California Corporation
BY:  _____
its: Managing Member

ATTEST:

and

BY: _____

BY: _____

SONIA OROZCO
City Clerk

its: _____

APPROVED AS TO FORM:

(NOTARIZATION REQUIRED)

BY: _____

ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUFFICIENCY:

BY: _____


MARC STOUT
City Engineer

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer } ss.

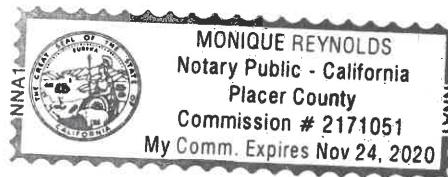
On June 1, 2020 before me, Monique Reynolds,
Notary Public, personally appeared Larry Gualco

who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signatures~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Monique Reynolds
Signature



(seal)

OPTIONAL INFORMATION

Date of Document

Sierra Vista KT 3A

Thumbprint of Signer

Type or Title of Document

Number of Pages in Document

Document in a Foreign Language

Type of Satisfactory Evidence:

- ☐ Personally Known with Paper Identification
☐ Paper Identification
☐ Credible Witness(es)

Capacity of Signer:

- ☐ Trustee
☐ Power of Attorney
☐ CEO / CFO / COO
☐ President / Vice-President / Secretary / Treasurer
☐ Other: _____

☐ Check here if
no thumbprint
or fingerprint
is available.

Other Information: _____



COUNCIL COMMUNICATION

CC #: 0857

File #: 0400-04012-1 & 0400-07

Title: Sierra Vista KT-3B Final Map and Subdivision Agreement

Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 7.10.

RECOMMENDATION TO COUNCIL

Staff recommends that the City Council take the following actions:

1. Approve the final map on file with the City Clerk and accept on behalf of the public, subject to improvement, Lot A and the rights of way and the easements offered thereon.
2. Adopt the attached resolution approving the Subdivision Agreement and authorize the City Manager to execute the agreement on behalf of the City.

BACKGROUND

The Development Services, Engineering section, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 97 residential lots and 1 public landscape lot.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

Approval of the Sierra Vista KT-3B final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Sierra Vista KT-3B final map was accomplished with preparation of the Sierra Vista Specific Plan EIR (Adopted: May 5, 2010) (SCH#2008032017) and the Mitigated Negative Declaration (MND) and associated Mitigation Monitoring Program approved by the City of Roseville on June 6, 2012. Because the Sierra Vista KT-3B final map is consistent with the project evaluated in the Sierra Vista Specific Plan Environmental Impact Report (EIR), no new effects would be expected to occur and all applicable mitigation measures from the Sierra Vista Specific Plan EIR will be implemented. As

such, no additional CEQA action is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

Resolution No. 20-268

Subdivision Agreement

Bonds

OWNER'S STATEMENT

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTEREST IN THE REAL PROPERTY INCLUDED WITHIN THE SUBDIVISION SHOWN UPON THIS FINAL MAP OF "SIERRA VISTA-KT-3B" AND THEY HEREBY CONSENT TO THE PREPARATION AND RECORDATION OF THIS FINAL MAP AND HEREBY OFFER FOR DEDICATION AND DO HEREBY DEDICATE FOR SPECIFIC PURPOSES THE FOLLOWING:

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS EASEMENT FOR PUBLIC PURPOSES:

(A) PUBLIC EASEMENT FOR THE INSTALLATION AND MAINTENANCE OF, BUT NOT LIMITED TO ELECTROLIERS, WATER AND GAS PIPES, SEWER AND DRAINAGE PIPES, AND FOR UNDERGROUND WIRE AND CONDUITS FOR ELECTRIC, TELEPHONE AND TELEVISION SERVICES AND TRAFFIC CONTROL APPURTENANCES TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER AND ACROSS LOT 'A' AND THOSE STRIPS OF LAND LYING CONTIGUOUS TO THE RIGHT OF WAY AS SHOWN HEREON AND DESIGNATED "P.U.E." (PUBLIC UTILITY EASEMENT).

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED IN FEE FOR PUBLIC PURPOSES:

(A) AS PUBLIC RIGHT OF WAY (INCLUDING ALL IMPROVEMENTS THEREON) LOT 'A' AND THE STREETS SHOWN HEREON AS LYRICAL WAY, BALLET WAY, BOSSA NOVA WAY, FOX TROT WAY, BOLERO COURT, BALLET COURT.

SIERRA VISTA COMMUNITIES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

BY: AKT INVESTMENTS, INC., A CALIFORNIA CORPORATION

BY: _____
NAME: _____
ITS: _____

BY: _____
NAME: _____
ITS: _____

BY: LENNAR HOMES OF CALIFORNIA INC. A CALIFORNIA CORPORATION

BY: _____
NAME: _____
ITS: _____

BY: _____
NAME: _____
ITS: _____

NOTARY’S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY

APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

FINAL MAP OF SIERRA VISTA – KT-3B
SUBDIVISION NUMBER PL13-0096

BEING ALL OF LOT 2 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020

M U R R A Y S M I T H & A S S O C I A T E S
SHEET 1 OF 10

NOTARY’S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY

APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

NOTARY’S ACKNOWLEDGMENT

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STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY

APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

NOTARY’S ACKNOWLEDGMENT

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STATE OF _____)
) SS
COUNTY OF _____)

ON _____ BEFORE ME,
_____; A NOTARY PUBLIC, PERSONALLY

APPEARED _____ WHO PROVED TO ME ON

THE BASIS OF

SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL:

SIGNATURE: _____

NOTARY PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY.

MY NOTARY COMMISSION NO. _____

MY COMMISSION EXPIRES ON: _____

FINAL MAP OF SIERRA VISTA – KT-3B
SUBDIVISION NUMBER PL13-0096
BEING ALL OF LOT 2 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES
LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL
RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF
SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
M U R R A Y S M I T H & A S S O C I A T E S

SURVEYOR'S STATEMENT

THIS FINAL MAP OF "SIERRA VISTA - KT-3B" WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF SIERRA VISTA COMMUNITIES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY ON DECEMBER 8, 2018. I HEREBY STATE THAT ALL THE MONUMENTS ARE OF THE CHARACTER AND OCCUPY THE POSITIONS INDICATED OR THAT THEY WILL BE SET IN THOSE POSITIONS BEFORE DECEMBER 31, 2021, AND THAT THE MONUMENTS ARE, OR WILL BE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED, AND THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE CONDITIONALLY APPROVED TENTATIVE MAP.

MICHAEL S. COSTA LS 6600
EXPIRATION DATE: 12-31-21

DATE



CITY ENGINEER'S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS FINAL MAP OF "SIERRA VISTA - KT-3B" AND FIND IT TO BE SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS THEREOF, THAT ALL PROVISION OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES HAVE BEEN COMPLIED WITH.

MARC STOUT R.C.E. 69879
CITY ENGINEER, CITY OF ROSEVILLE
LICENSE EXPIRES SEPTEMBER 30, 2020

DATE

I HEREBY STATE THAT I AM SATISFIED THAT THIS FINAL MAP OF "SIERRA VISTA - KT-3B" IS TECHNICALLY CORRECT.

FOR MARC STOUT CITY ENGINEER, CITY OF ROSEVILLE

TIMOTHY G. BLAIR, PLS 8278
EXPIRES DECEMBER 31, 2021

DATE



CITY CLERK'S STATEMENT

I HEREBY CERTIFY THAT THE CITY COUNCIL, CITY OF ROSEVILLE, HAS APPROVED THIS FINAL MAP OF "SIERRA VISTA - KT-3B" AND HAS ACCEPTED ON BEHALF OF THE PUBLIC SUBJECT TO IMPROVEMENT, LOT 'A' AND THE RIGHTS OF WAYS AND EASEMENTS OFFERED HEREON FOR DEDICATION.

CITY CLERK, CITY OF ROSEVILLE

DATE

BY: _____
ASSISTANT CITY CLERK

RECORDER'S STATEMENT

FILED THIS ____ DAY OF _____, 20__ AT _____.M. IN BOOK ____ OF MAPS, AT PAGE _____, IN THE OFFICE OF THE PLACER COUNTY RECORDER, AT THE REQUEST OF MSA ENGINEERING, INC.

RECORDER OF PLACER COUNTY
STATE OF CALIFORNIA

DOCUMENT NO.: _____

BY: _____
DEPUTY

FEE \$ _____

FINAL MAP OF SIERRA VISTA - KT-3B
SUBDIVISION NUMBER PL13-0096

BEING ALL OF LOT 2 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
MARCH, 2020

MURRAY SMITH & ASSOCIATES

LEGEND

- ...MONUMENT TO BE SET PER THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES VILLAGE KT-3A, SUBDIVISION NO. PL 13-0096" RECORDED IN BOOK ____ OF MAPS, AT PAGE ____
- ...5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600" TO BE SET PER THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY
- ...COPPERWELD SURVEY MONUMENT WITH CENTER PUNCH IN MONUMENT WELL STAMPED "LS 6600" TO BE SET PER THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY
- ...SET 5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600"
- ...SET COPPERWELD SURVEY MONUMENT WITH CENTER PUNCH IN MONUMENT WELL STAMPED "LS 6600"
- ...DIMENSION POINT
- B.M. ...BOOK OF MAPS
- (R) ...RADIAL
- (OA) ...OVERALL
- P.U.E. ...PUBLIC UTILITY EASEMENT

REFERENCES

- (1) PER BOOK EE OF MAPS, AT PAGE 33, OFFICIAL RECORDS OF PLACER COUNTY
- (2) PER BOOK ____ OF MAPS, AT PAGE ____ OFFICIAL RECORDS OF PLACER COUNTY

SEE SHEET 4 FOR NOTES

BASIS OF BEARING

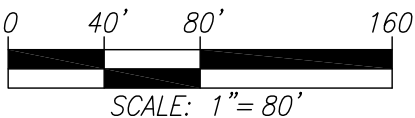
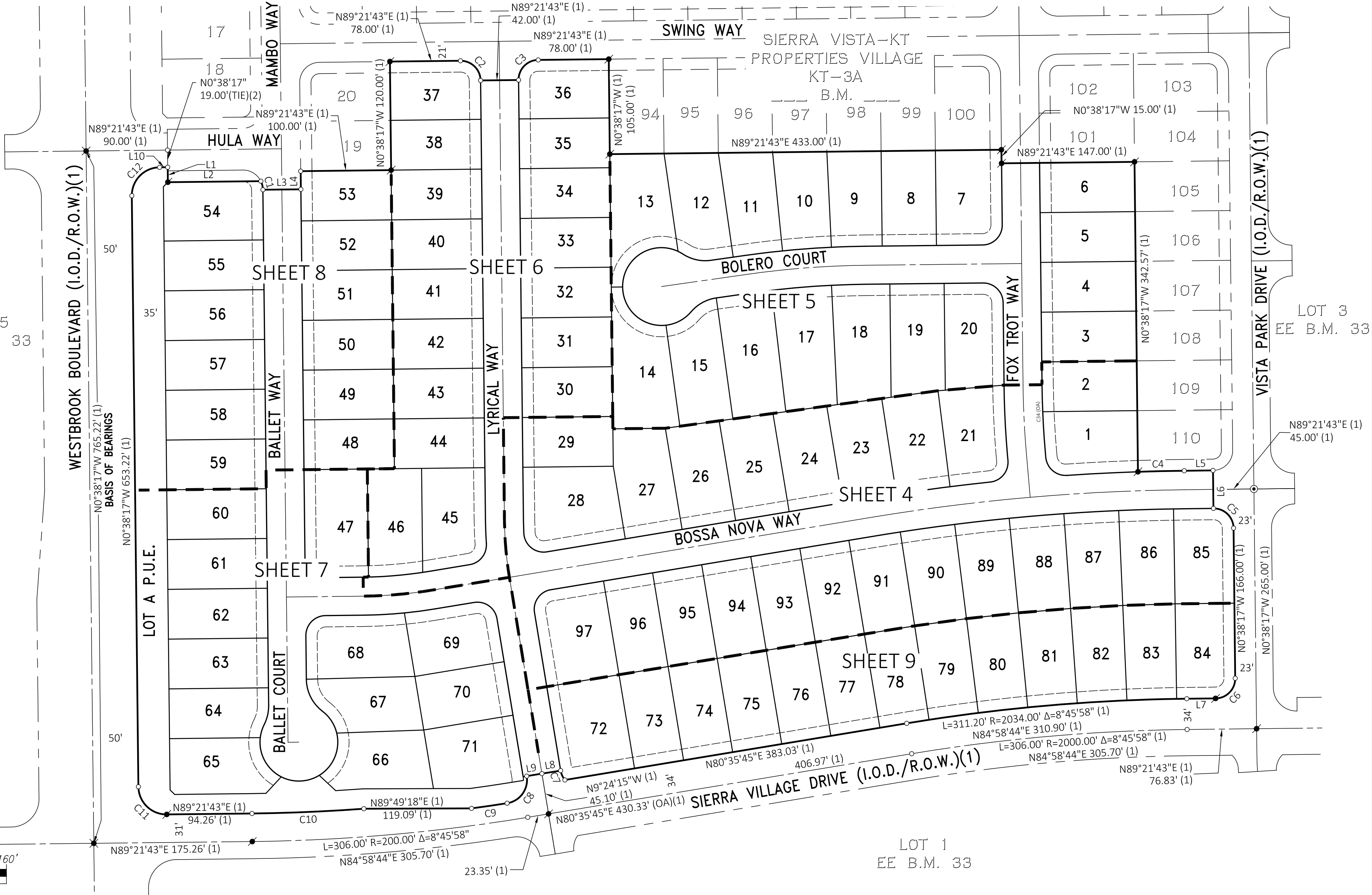
THE BASIS OF BEARINGS FOR THIS MAP IS THE CENTERLINE OF WESTBROOK BOULEVARD AS SHOWN IN BOOK EE OF MAPS, PAGE 33 OFFICIAL RECORDS OF PLACER COUNTY AND ESTABLISHED BY THE MONUMENTS SHOWN HEREON. THE BEARING IS N0°38'17"W.

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N0°38'17"W (1)	16.50' (1)
L2	N89°21'43"E (1)	102.84' (1)
L3	N89°21'43"E (1)	42.00' (1)
L4	N0°38'17"W (1)	20.08' (1)
L5	N89°21'43"E (1)	31.83' (1)
L6	N0°38'17"W (1)	42.00' (1)

LINE TABLE		
LINE #	BEARING	DISTANCE
L7	N89°21'43"E (1)	31.83' (1)
L8	N80°51'55"E (1)	21.00' (1)
L9	N80°35'45"E (1)	17.00' (1)
L10	N89°21'43"E (1)	9.00' (1)

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	9.82' (1)	22.00' (1)	25°34'59" (1)	N13°25'46"W (1)	9.74' (1)
C2	34.56' (1)	22.00' (1)	90°00'00" (1)	N45°38'17"W (1)	31.11' (1)
C3	34.56' (1)	22.00' (1)	90°00'00" (1)	N44°21'43"E (1)	31.11' (1)
C4	51.17' (1)	2286.00' (1)	1°16'57" (1)	N88°43'14"E (1)	51.17' (1)
C5	34.56' (1)	22.00' (1)	90°00'00" (1)	N45°38'17"W (1)	31.11' (1)
C6	34.56' (1)	22.00' (1)	90°00'00" (1)	N44°21'43"E (1)	31.11' (1)

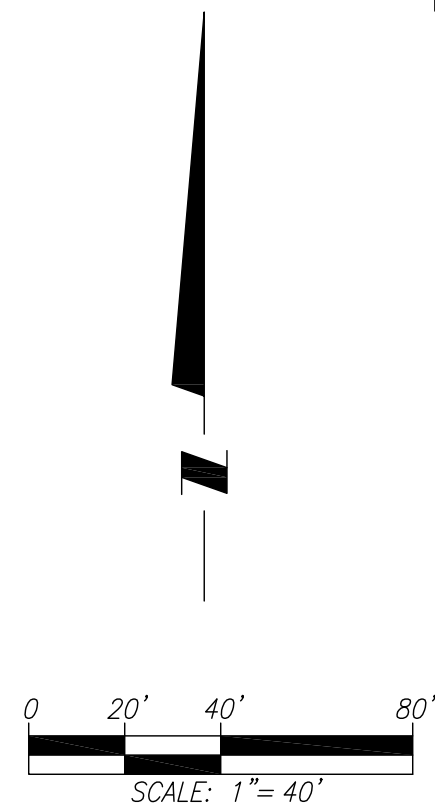
CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C7	11.52' (1)	22.00' (1)	30°00'00" (1)	N24°24'15"W (1)	11.39' (1)
C8	41.10' (1)	26.00' (1)	90°34'33" (1)	N35°53'01"E (1)	36.95' (1)
C9	39.77' (1)	1981.00' (1)	1°09'01" (1)	N81°44'49"E (1)	39.77' (1)
C10	123.79' (1)	1969.00' (1)	3°36'08" (1)	N87°33'39"E (1)	123.77' (1)
C11	48.69' (1)	31.00' (1)	90°00'00" (1)	N45°38'17"W (1)	43.84' (1)
C12	48.69' (1)	31.00' (1)	90°00'00" (1)	N44°21'43"E (1)	43.84' (1)



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C4	51.17' (1)	2286.00' (1)	1°16'57" (1)	N88°43'14"E (1)	51.17' (1)
C5	34.56' (1)	22.00' (1)	90°00'00" (1)	N45°38'17"W (1)	31.11' (1)
C14	13.37'	386.10'	1°59'02"	N1°37'48"W	13.37'
C15	37.16'	22.00'	96°46'57"	N51°00'47"W	32.90'
C16	30.07'	2286.00'	0°45'14"	N80°58'22"E	30.07'
C17	60.00'	2286.00'	1°30'14"	N82°06'05"E	60.00'
C18	44.71'	2286.00'	1°07'14"	N83°24'49"E	44.71'
C19	34.15'	22.00'	88°55'57"	N39°30'28"E	30.82'
C20	76.99'	1021.00'	4°19'13"	N2°47'54"W	76.97'
C21	29.83'	979.00'	1°44'46"	N1°30'40"W	29.83'
C22	43.99'	979.00'	2°34'28"	N3°40'16"W	43.98'
C23	34.15'	22.00'	88°55'57"	N49°25'29"W	30.82'
C24	78.61'	2286.00'	1°58'13"	N87°05'39"E	78.61'
C25	12.32'	2244.00'	0°18'52"	N89°12'17"E	12.32'
C26	60.68'	2244.00'	1°32'58"	N88°16'22"E	60.68'
C27	60.68'	2244.00'	1°32'58"	N86°43'24"E	60.68'
C28	60.68'	2244.00'	1°32'58"	N85°10'26"E	60.68'
C29	60.68'	2244.00'	1°32'58"	N83°37'29"E	60.68'
C30	60.68'	2244.00'	1°32'58"	N82°04'31"E	60.68'
C31	27.61'	2244.00'	0°42'18"	N80°56'54"E	27.61'

NOTES

1. ALL CURVES DIMENSIONED WITH LENGTH, RADIUS, DELTA, CHORD BEARING AND CHORD DISTANCE.
2. ALL DISTANCES SHOWN HEREON ARE EXPRESSED IN FEET AND DECIMALS THEREOF.
3. DUE TO ROUNDING, THE SUM OF THE INDIVIDUAL DIMENSIONS MAY NOT EQUAL THE OVERALL DIMENSION.
4. TOTAL AREA FOR THIS "SIERRA VISTA - KT-3B" SUBDIVISION IS 18.145± AC. GROSS, CONSISTING OF 97 RESIDENTIAL DEVELOPMENT LOTS AND 1 LANDSCAPE LOT.
5. ALL REAR LOT CORNERS WILL BE SET WITH A 5/8" REBAR WITH A PLASTIC PLUG STAMPED "LS 6600", WHERE MONUMENTS FALL ADJACENT TO A RETAINING WALL, SOUNDWALL OR CONCRETE FOOTING A 5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600" WILL BE SET ON THE SIDE LOT LINE 2.00' OFFSET TO THE REAR LOT CORNER, EXCEPT WHEREAS SHOWN.
6. A 1-5/32" BRASS DISK STAMPED "LS 6600" WILL BE SET IN THE SIDEWALK ON THE PROJECTION OF THE SIDE LOT LINES 1.00 FOOT FROM THE PROPERTY CORNER.
7. A SOUNDWALL IS ADJACENT TO LOTS: 54 THROUGH 65 AND LOT A.
8. A GEOTECHNICAL ENGINEERING REPORT ENTITLED "SIERRA VISTA RESIDENTIAL DEVELOPMENT" WAS PREPARED BY WALLACE KUHLE & ASSOCIATES, WKA NO. 11712.01, DATED JANUARY 10, 2018. A COPY OF THIS REPORT IS AVAILABLE FOR PUBLIC INSPECTION AT THE CITY OF ROSEVILLE ENGINEERING DEPARTMENT, FILE NO. 308-879 .
9. CONDITIONS, COVENANTS AND RESTRICTIONS (CC&R'S) ARE BEING RECORDED CONCURRENTLY WITH THIS FINAL MAP IN DOCUMENT NO.: 2020-0042952.

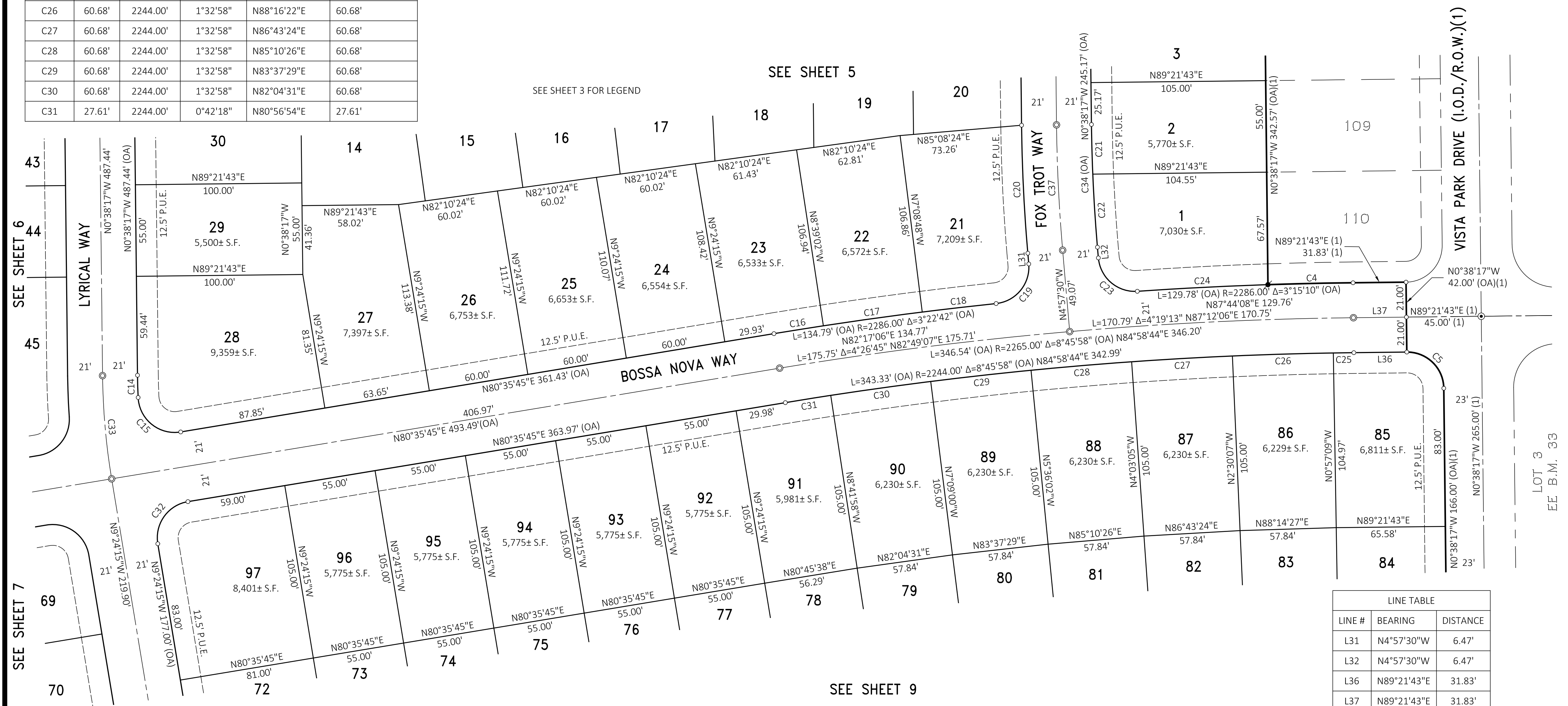


FINAL MAP OF SIERRA VISTA - KT-3B
SUBDIVISION NUMBER PL13-0096

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RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF
SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020

MURRAY SMITH & ASSOCIATES

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C32	34.56'	22.00'	90°00'00"	N35°35'45"E	31.11'
C33	62.29'	407.10'	8°45'58"	N5°01'16"W	62.23'
C34 (OA)	73.82'	979.00'	4°19'13"	N2°47'54"W	73.80'
C37	75.40'	1000.00'	4°19'13"	N2°47'54"W	75.39'

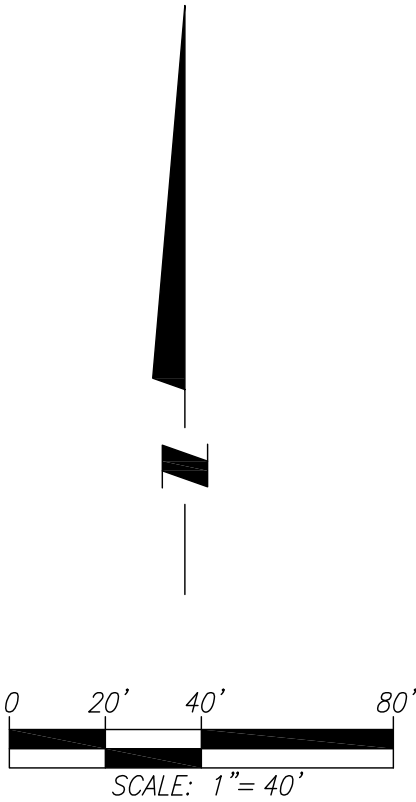
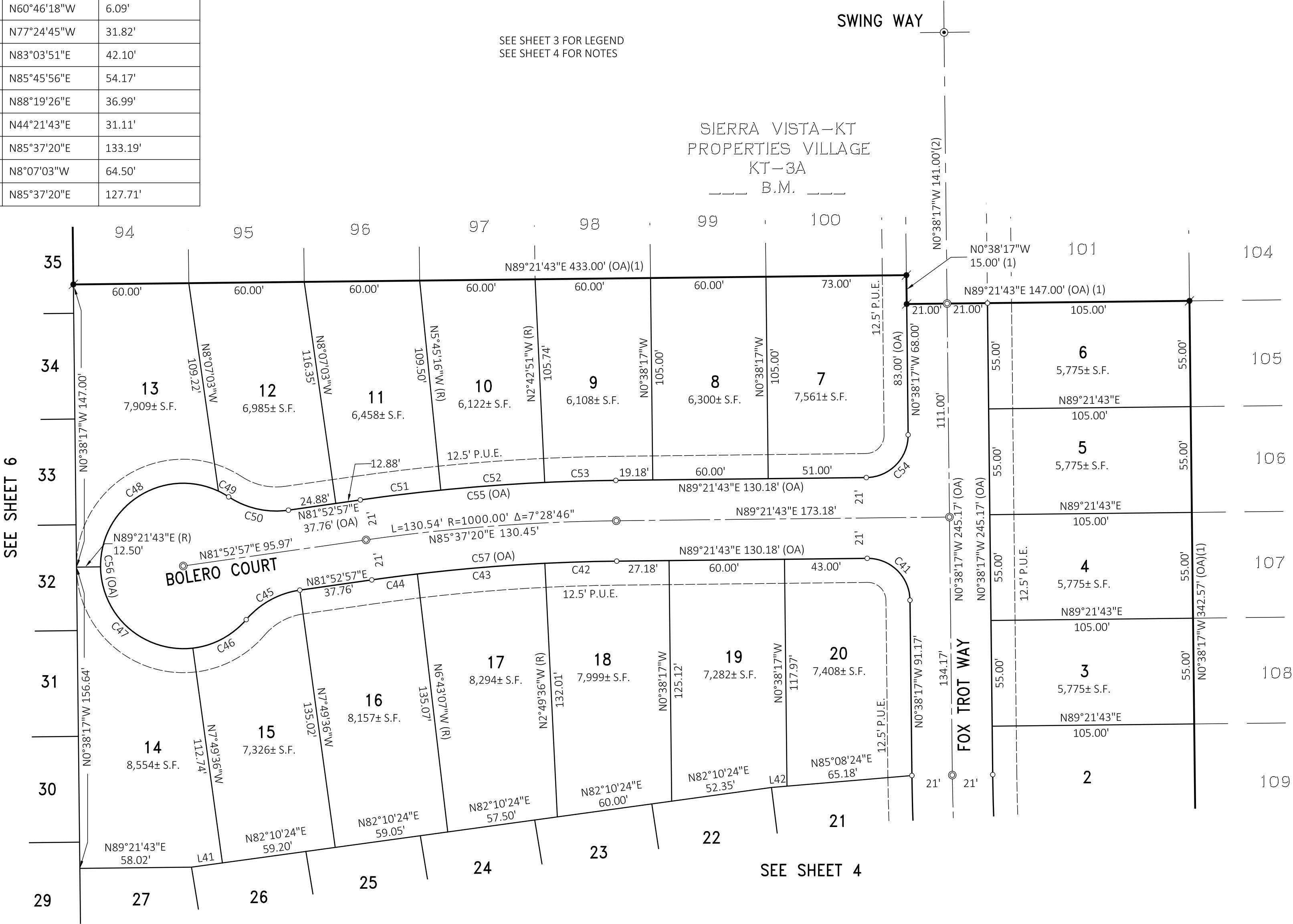


FINAL MAP OF SIERRA VISTA - KT-3B
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SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
MURRAY SMITH & ASSOCIATES

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C41	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C42	37.40'	979.00'	2°11'19"	N88°16'03"E	37.39'
C43	66.50'	979.00'	3°53'31"	N85°13'38"E	66.49'
C44	23.90'	979.00'	1°23'56"	N82°34'55"E	23.90'
C45	32.52'	45.00'	41°24'35"	N61°10'40"E	31.82'
C46	32.18'	43.00'	42°52'55"	N61°54'50"E	31.44'
C47	72.05'	43.00'	96°00'25"	N48°38'30"W	63.91'
C48	86.91'	43.00'	115°48'09"	N57°15'47"E	72.85'
C49	6.10'	43.00'	8°07'40"	N60°46'18"W	6.09'
C50	32.52'	45.00'	41°24'35"	N77°24'45"W	31.82'
C51	42.11'	1021.00'	2°21'47"	N83°03'51"E	42.10'
C52	54.18'	1021.00'	3°02'25"	N85°45'56"E	54.17'
C53	37.00'	1021.00'	2°04'34"	N88°19'26"E	36.99'
C54	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C55 (OA)	133.28'	1021.00'	7°28'46"	N85°37'20"E	133.19'
C56 (OA)	197.24'	43.00'	262°49'09"	N8°07'03"W	64.50'
C57 (OA)	127.80'	979.00'	7°28'46"	N85°37'20"E	127.71'

LINE TABLE		
LINE #	BEARING	DISTANCE
L41	N82°10'24"E	16.21'
L42	N85°08'24"E	8.09'

SEE SHEET 3 FOR LEGEND
SEE SHEET 4 FOR NOTES



FINAL MAP OF SIERRA VISTA - KT-3B

SUBDIVISION NUMBER PL13-0096

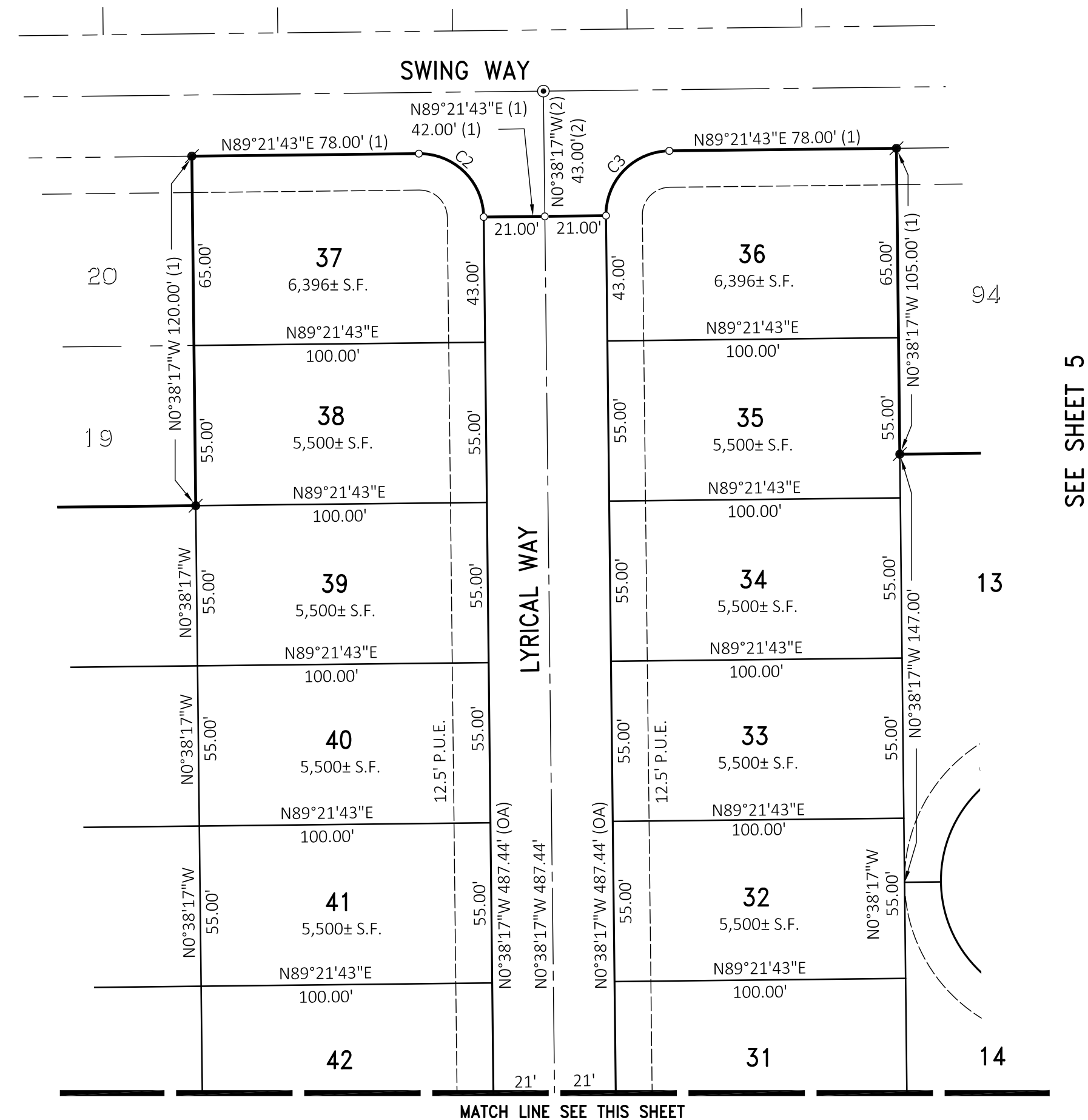
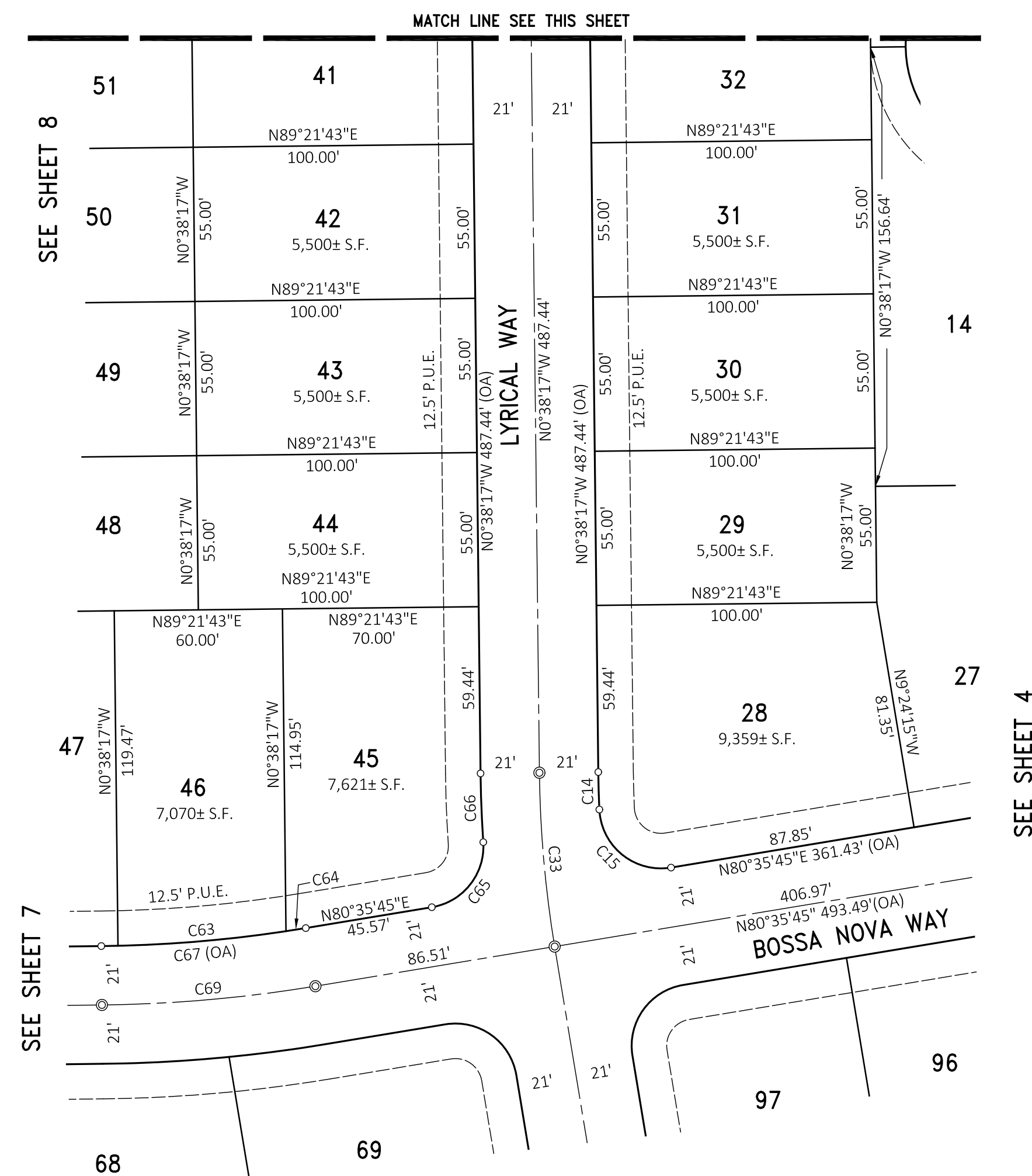
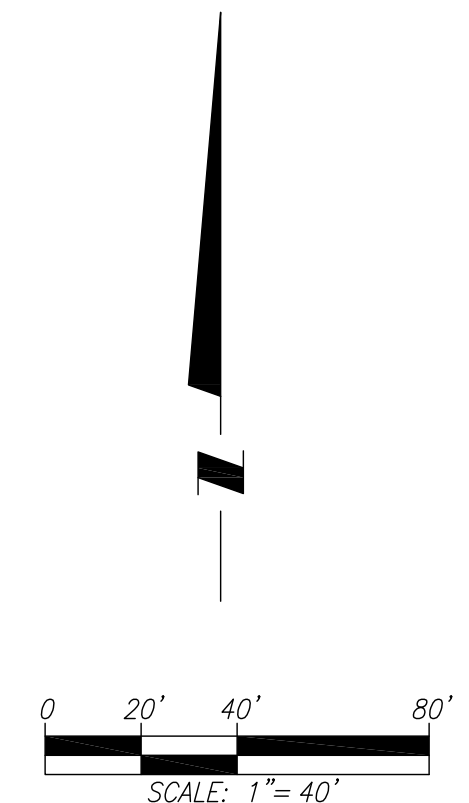
BEING ALL OF LOT 2 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES
LARGE LOT SUBDIVISION" FILED FOR RECORD IN BOOK EE OF MAPS, AT PAGE 33, OFFICIAL
RECORDS OF PLACER COUNTY, ALSO BEING A PORTION OF THE SOUTHEAST QUARTER OF
SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020

MURRAY SMITH & ASSOCIATES

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C2	34.56' (1)	22.00' (1)	90°00'00" (1)	N45°38'17"W (1)	31.11' (1)
C3	34.56' (1)	22.00' (1)	90°00'00" (1)	N44°21'43"E (1)	31.11' (1)
C14	13.37'	386.10'	1°59'02"	N1°37'48"W	13.37'
C15	37.16'	22.00'	96°46'57"	N51°00'47"W	32.90'
C33	62.29'	407.10'	8°45'58"	N5°01'16"W	62.23'
C63	60.21'	479.00'	7°12'07"	N85°02'59"E	60.17'
C64	7.13'	479.00'	0°51'10"	N81°01'20"E	7.13'
C65	32.45'	22.00'	84°31'05"	N38°20'13"E	29.59'
C66	24.54'	428.10'	3°17'03"	N2°16'48"W	24.53'
C67 (OA)	73.29'	479.00'	8°45'58"	N84°58'44"E	73.21'
C69	76.50'	500.00'	8°45'58"	N84°58'44"E	76.42'

SEE SHEET 3 FOR LEGEND
SEE SHEET 4 FOR NOTES

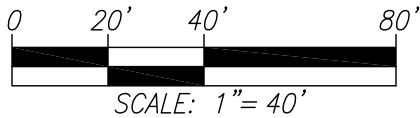
SIERRA VISTA-KT
PROPERTIES VILLAGE
KT-3A
___ B.M. ___



FINAL MAP OF SIERRA VISTA - KT-3B
SUBDIVISION NUMBER PL13-0096

BEING ALL OF LOT 2 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES
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CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
MURRAY SMITH & ASSOCIATES

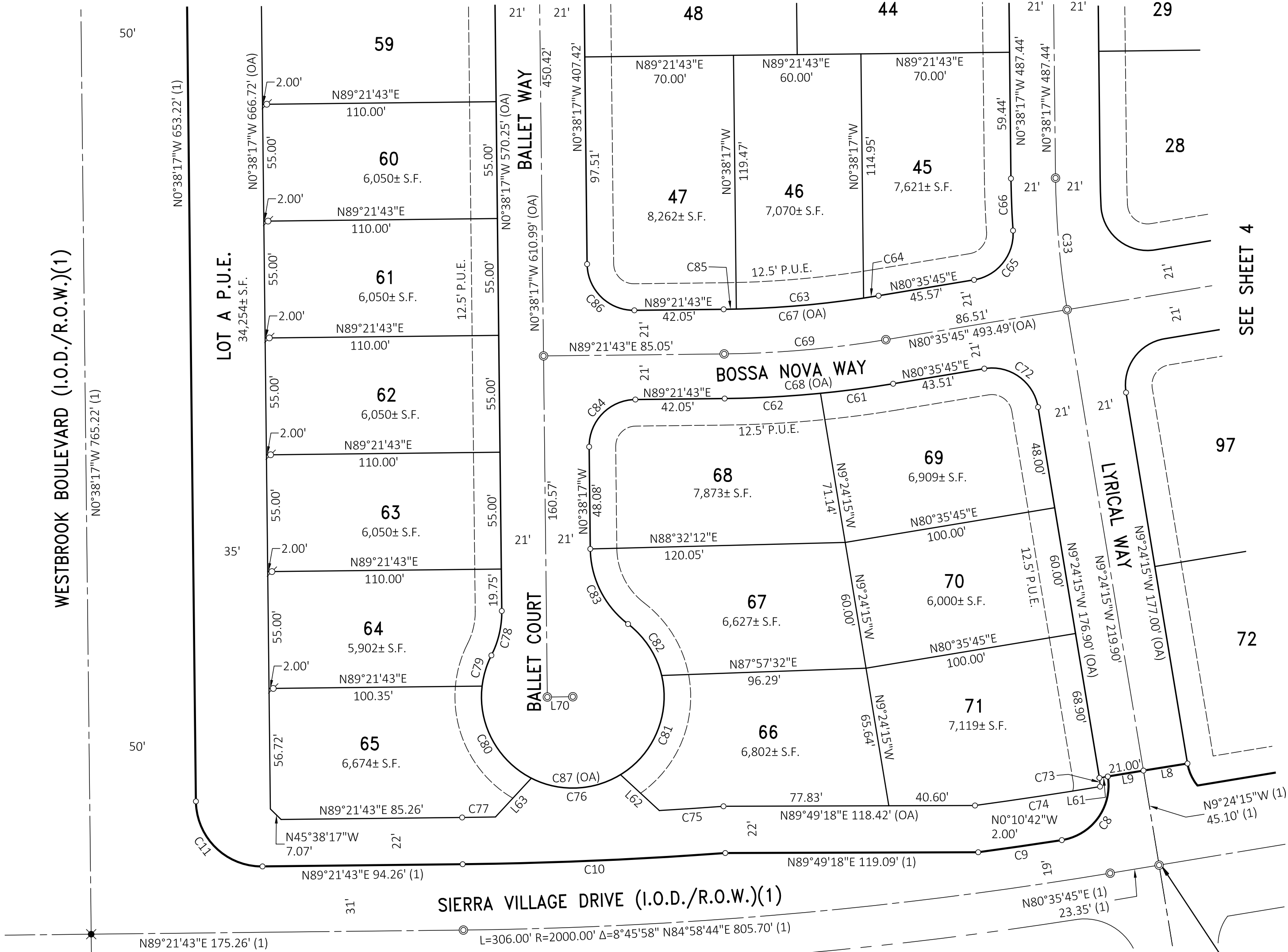
LINE TABLE		
LINE #	BEARING	DISTANCE
L8	N80°51'55"E (1)	21.00' (1)
L9	N80°35'45"E (1)	17.00' (1)
L61	N80°35'45"E	4.00'
L62	N47°14'09"W	24.88'
L63	N42°45'51"E	24.88'
L70	N89°21'43"E	12.00'



SEE SHEET 3 FOR LEGEND
SEE SHEET 4 FOR NOTES

SEE SHEET 8

SEE SHEET 6



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C8	41.10' (1)	26.00' (1)	90°34'33" (1)	N35°53'01"E (1)	36.95' (1)
C9	39.77' (1)	1981.00' (1)	1°09'01" (1)	N81°44'49"E (1)	39.77' (1)
C10	123.79' (1)	1969.00' (1)	3°36'08" (1)	N87°33'39"E (1)	123.77' (1)
C11	48.69' (1)	31.00' (1)	90°00'00" (1)	N45°38'17"W (1)	43.84' (1)
C33	62.29'	407.10'	8°45'58"	N5°01'16"W	62.23'
C61	34.51'	521.00'	3°47'44"	N82°29'37"E	34.51'
C62	45.20'	521.00'	4°58'14"	N86°52'36"E	45.18'
C63	60.21'	479.00'	7°12'07"	N85°02'59"E	60.17'
C64	7.13'	479.00'	0°51'10"	N81°01'20"E	7.13'
C65	32.45'	22.00'	84°31'05"	N38°20'13"E	29.59'
C66	24.54'	428.10'	3°17'03"	N2°16'48"W	24.53'
C67 (OA)	73.29'	479.00'	8°45'58"	N84°58'44"E	73.21'
C68 (OA)	79.71'	521.00'	8°45'58"	N84°58'44"E	79.63'
C69	76.50'	500.00'	8°45'58"	N84°58'44"E	76.42'
C72	34.56'	22.00'	90°00'00"	N54°24'15"W	31.11'
C73	4.12'	22.00'	10°44'05"	N4°02'13"W	4.12'
C74	59.55'	1959.00'	1°44'30"	N81°24'33"E	59.55'
C75	30.29'	1947.00'	0°53'29"	N86°10'57"E	30.29'
C76	43.88'	43.00'	58°28'02"	N87°45'51"E	42.00'
C77	15.70'	1947.00'	0°27'43"	N89°07'51"E	15.70'
C78	21.66'	45.00'	27°34'49"	N13°09'07"E	21.45'
C79	15.19'	43.00'	20°14'45"	N16°49'09"E	15.12'
C80	52.31'	43.00'	69°41'54"	N28°09'11"W	49.14'
C81	54.04'	43.00'	72°00'32"	N22°31'34"E	50.56'
C82	29.50'	43.00'	39°18'24"	N33°07'55"W	28.92'
C83	40.96'	45.00'	52°08'50"	N26°42'42"W	39.56'
C84	34.56'	22.00'	90°00'00"	N44°21'43"E	31.11'
C85	5.95'	479.00'	0°42'41"	N89°00'23"E	5.95'
C86	34.56'	22.00'	90°00'00"	N45°38'17"W	31.11'
C87 (OA)	194.92'	43.00'	259°43'38"	N77°04'43"E	66.01'

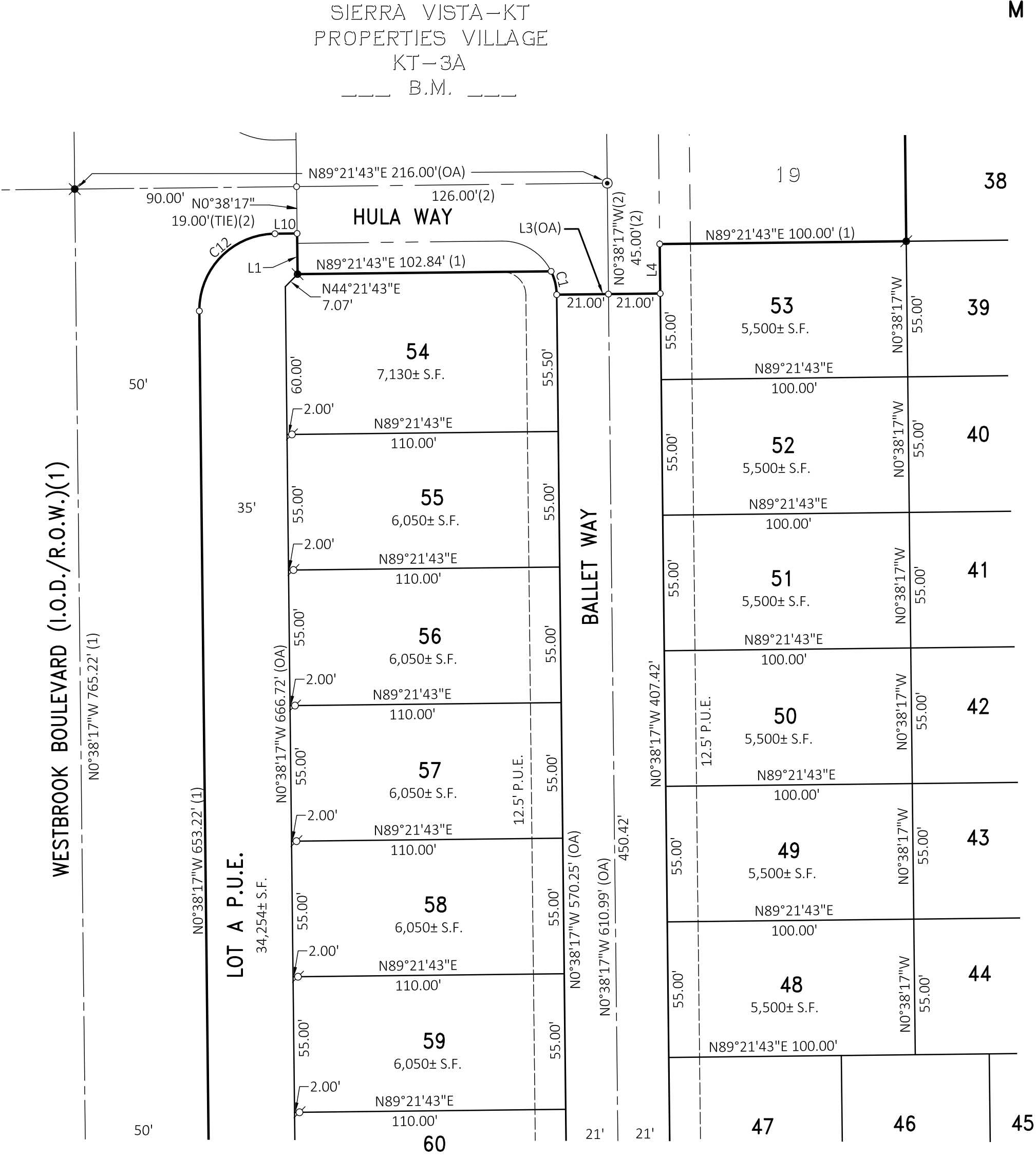
SEE SHEET 4

SEE SHEET 9

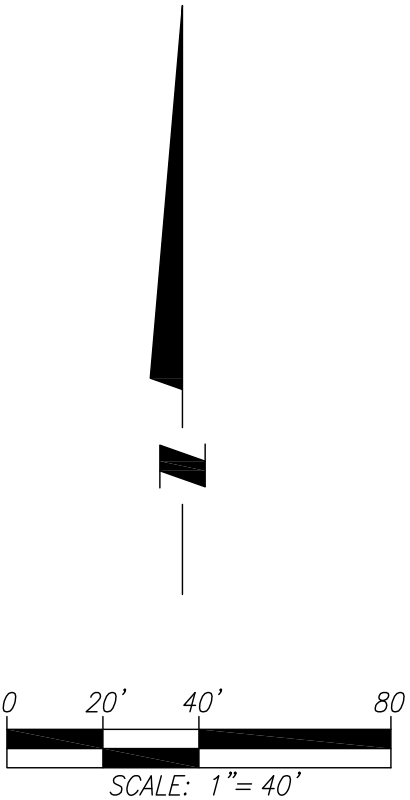
LOT 1
EE B.M. 33

FINAL MAP OF SIERRA VISTA - KT-3B
SUBDIVISION NUMBER PL13-0096
BEING ALL OF LOT 2 AS SHOWN IN THAT FINAL MAP OF "SIERRA VISTA-KT PROPERTIES
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CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY, 2020
M U R R A Y S M I T H & A S S O C I A T E S

SEE SHEET 3 FOR LEGEND
SEE SHEET 4 FOR NOTES



LINE TABLE		
LINE #	BEARING	DISTANCE
L1	N0°38'17"W (1)	16.50' (1)
L3(OA)	N89°21'43"E (1)	42.00' (1)
L4	N0°38'17"W (1)	20.08' (1)
L10	N89°21'43"E (1)	9.00' (1)



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C1	9.82' (1)	22.00' (1)	25°34'59" (1)	N13°25'46"W (1)	9.74' (1)
C12	48.69' (1)	31.00' (1)	90°00'00" (1)	N44°21'43"E (1)	43.84' (1)

FINAL MAP OF SIERRA VISTA - KT-3B

SUBDIVISION NUMBER PL13-0096

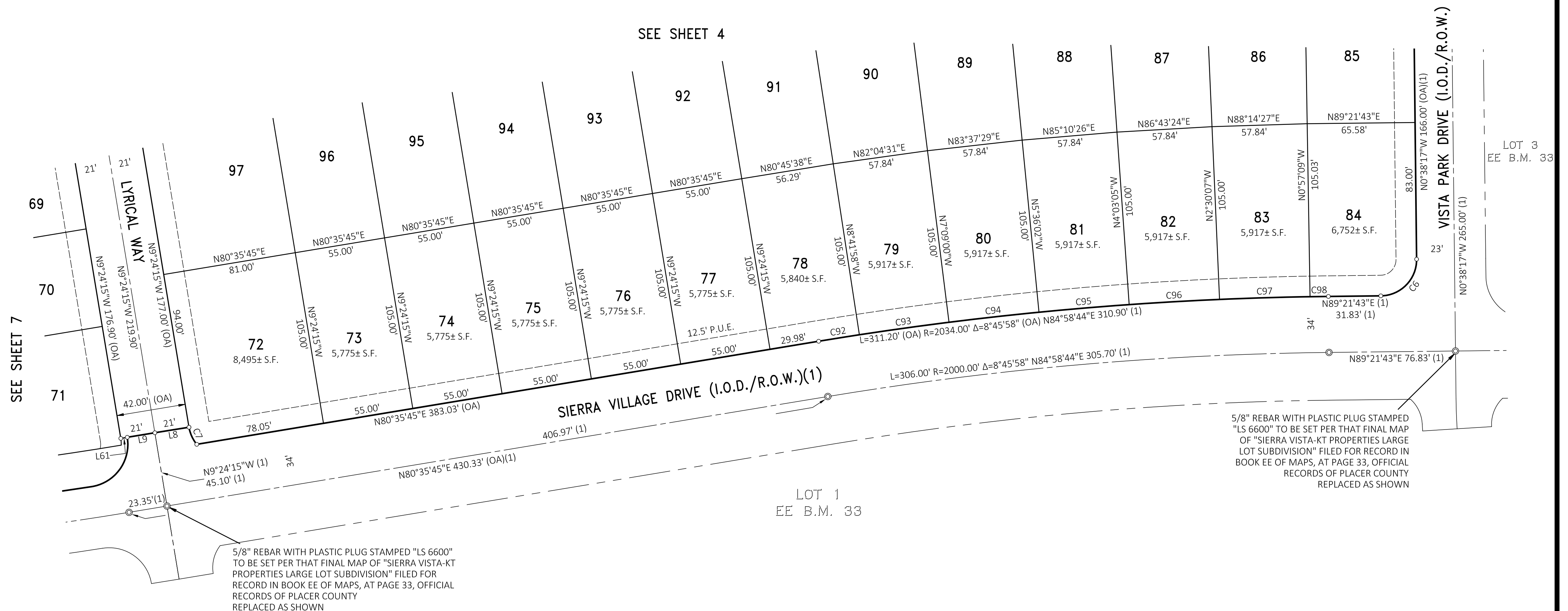
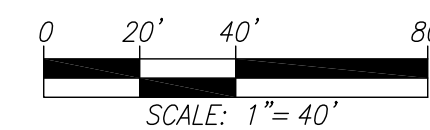
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JULY, 2020

MURRAY SMITH & ASSOCIATES

CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C6	34.56' (1)	22.00' (1)	90°00'00" (1)	N44°21'43"E (1)	31.11' (1)
C7	11.52' (1)	22.00' (1)	30°00'00" (1)	N24°24'15"W (1)	11.39' (1)
C92	25.02'	2034.00'	0°42'18"	N80°56'54"E	25.02'
C93	55.00'	2034.00'	1°32'58"	N82°04'31"E	55.00'
C94	55.00'	2034.00'	1°32'58"	N83°37'29"E	55.00'
C95	55.00'	2034.00'	1°32'58"	N85°10'26"E	55.00'
C96	55.00'	2034.00'	1°32'58"	N86°43'24"E	55.00'
C97	55.00'	2034.00'	1°32'58"	N88°16'22"E	55.00'
C98	11.17'	2034.00'	0°18'52"	N89°12'17"E	11.17'

LINE TABLE		
LINE #	BEARING	DISTANCE
L8	N80°51'55"E (1)	21.00' (1)
L9	N80°35'45"E (1)	17.00' (1)
L61	N80°35'45"E (1)	4.00' (1)

SEE SHEET 3 FOR LEGEND
SEE SHEET 4 FOR NOTES



FINAL MAP OF SIERRA VISTA - KT-3B
SUBDIVISION NUMBER PL13-0096
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JULY, 2020
M U R R A Y S M I T H & A S S O C I A T E S

SEE SHEET 3 FOR LEGEND
SEE SHEET 4 FOR NOTES

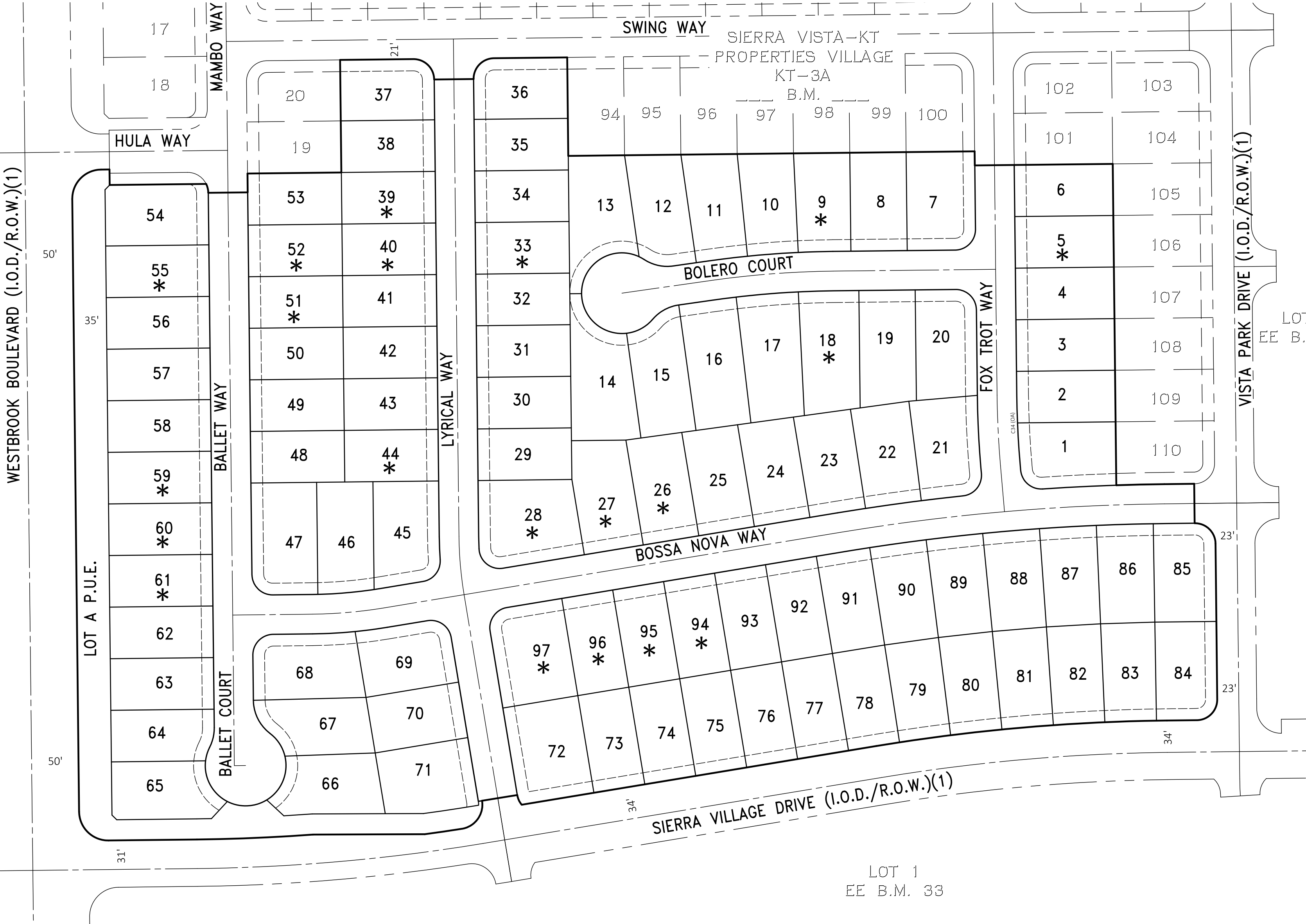
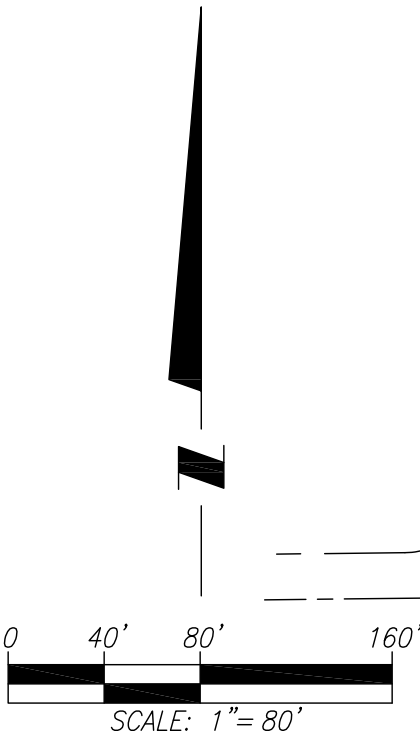
**ADDITIONAL INFORMATION FOR INFORMATIONAL PURPOSE ONLY
PURSUANT TO SECTION 66434.2 OF THE GOVERNMENT CODE**

EACH RESIDENTIAL DWELLING CONSTRUCTED ON ANY OF THE LOTS
INDICATED SHALL BE FITTED WITH A SEWER BACKFLOW
PREVENTER VALVE AS APPROVED BY THE CITY OF ROSEVILLE. IT
SHALL BE THE RESPONSIBILITY OF THE OWNER OF SAID DWELLING
TO MAINTAIN THE VALVE AND PREVENT DAMAGE FROM
OCCURRING THERETO. THE CITY OF ROSEVILLE SHALL NOT BE
RESPONSIBLE FOR THE MAINTENANCE OR PERFORMANCE OF THE
VALVE, AND THE CITY OF ROSEVILLE SHALL NOT BE LIABLE FOR ANY
DAMAGE OCCURRING TO ANY SUCH DWELLING OR ITS CONTENTS
DUE TO FAILURE OF THE VALVE FOR ANY REASON WHATSOEVER.

LEGEND

* DENOTES SEWER BACKFLOW PREVENTER VALVE REQUIRED ON
SANITARY SEWER CONNECTION BY THE CITY OF ROSEVILLE WITH
THE BUILDING PERMIT AND MAINTAINED THEREAFTER BY THE
OWNER.

LOT 5
EE B.M. 33



RESOLUTION NO. 20-268

APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND SIERRA VISTA COMMUNITIES, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a subdivision agreement, by and between the City of Roseville and Sierra Vista Communities, LLC, for the Sierra Vista KT – 3B subdivision, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said agreement is approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**RECORDING REQUESTED BY AND WHEN
RECORDED, PLEASE RETURN TO:**

**City Clerk
CITY OF ROSEVILLE
311 Vernon Street
Roseville, CA 95678**

SUBDIVISION AGREEMENT

SIERRA VISTA -KT - 3B SUBDIVISION

THIS AGREEMENT, made and entered into this ____ day of _____,
20__, by and between the CITY OF ROSEVILLE, a municipal corporation ("CITY"), and
SIERRA VISTA COMMUNITIES, LLC,
a CALIFORNIA LIMITED LIABILITY COMPANY, ("SUBDIVIDER"),

W I T N E S S E T H:

WHEREAS, SUBDIVIDER is possessed of a tract of land lying in the City of Roseville,
County of Placer, known as "SIERRA VISTA - KT-3B Subdivision" (Subdivision
no. PL17-0305 ; "the Subdivision"); and

WHEREAS, a tentative map of the Subdivision was approved by the City Planning
Commission on the 10 day of December, 2015, and the final map of the Subdivision
has been approved subject to the execution of this Agreement; and

WHEREAS, the final map has been filed on the ____ day of _____, 20__ in
Book _____ of Parcel/Subdivision Maps at Page _____ in the Official Records, Placer
County Recorder, file no. _____; and

WHEREAS, Section 18.20.110 of the Roseville Municipal Code, regulating the subdivision of land in the City, requires that SUBDIVIDER shall execute and file an agreement between itself and CITY relating to the improvements to be made in a subdivision, prior to the approval by the City Council of the final map.

NOW, THEREFORE, the parties agree as follows:

1. Rights-of-Way. Except as otherwise provided by this Agreement, CITY rejects all lands, right-of-ways, and easements offered for dedication on the final map of the Subdivision. All such offers shall, however, remain open, and shall constitute irrevocable offers of dedication in accordance with Government Code Section 66477.2. All such offers may be accepted by CITY in its sole discretion at any later date without further notice to SUBDIVIDER as provided by law.

By way of explanation only, it is the current intention of CITY to accept all or part of such irrevocable offers to dedicate upon acceptance of the improvements called for in this Agreement.

2. Improvements - Time Limit. SUBDIVIDER agrees to cause all improvements to be made and constructed in the Subdivision to fully comply with the requirements of the Roseville Municipal Code and the Subdivision Map Act of the State of California according to the improvement plans for the Subdivision prepared by MSA Engineering, Inc., dated June 27, 2019 and approved by the City Engineer and including any changes or alterations to such improvements required by the City Engineer, and to install, on or before December 31, 2021, such survey monuments as may be required by the City Engineer ("the Work"). SUBDIVIDER agrees to pay for any materials, provisions or other supplies used in, upon, for or about the performance of the Work, or for any work or labor of any kind done in

connection with the Work, or for any amounts due under the Unemployment Insurance Act with respect to such work or labor.

SUBDIVIDER agrees to complete all of the Work on or before twenty-four (24) months from the date of this Agreement. If in the opinion of the City Engineer of CITY, an extension of this Agreement is not detrimental to the public welfare, he or she is, in his or her sole discretion, hereby authorized to extend the time within which the Work shall be completed for a period not to exceed twelve (12) months. Upon a written application made by SUBDIVIDER, further extensions, not to exceed an additional six (6) months, shall be reviewed and approved at the discretion of the City Engineer of CITY. Any such application extension request by SUBDIVIDER shall fully state the grounds and facts relied upon for the granting of additional extensions.

In the event that SUBDIVIDER shall fail to complete the Work within the time provided by this Agreement, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, enter upon the Subdivision and complete the Work and recover the full cost and expense of such construction from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

If at anytime prior to the expiration of the time provided by this Agreement the City Engineer of CITY determines that a safety hazard exists within an existing public right-of-way, the City Engineer shall give written notice to SUBDIVIDER to eliminate the safety hazard. If SUBDIVIDER fails to eliminate the safety hazard within five (5) calendar days of the written notice, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, eliminate the safety hazard and recover the full cost and expense of such work from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

3. Acquisition and Dedication of Easements or Rights-of-Ways. If any of the Work is to be constructed or installed on land not within the Subdivision or already existing public right-of-way, no construction or installation shall be commenced before:

a. The irrevocable offer of dedication or conveyance to CITY of appropriate right-of-ways, easements or other interest in real property, and appropriate authorization from the property owner to allow construction or installation of the improvements or work; or

b. The issuance of an order of possession by a court of competent jurisdiction pursuant to the State Eminent Domain Law. SUBDIVIDER shall comply in all respects with any such order of possession.

Nothing in this Section 3 shall be construed as authorizing or granting an extension of time to SUBDIVIDER for completion of the Work.

4. Inspection Fees and Costs. The City Engineer shall inspect all of the Work improvements made in the Subdivision to see that they comply with CITY's subdivision regulations and specifications. SUBDIVIDER shall deposit the estimated inspection fee and reimburse CITY for the cost of such inspections in accordance with Roseville Municipal Code section 18.20.070.

5. Securities.

a. SUBDIVIDER shall file with this Agreement two (2) improvement securities as set forth in Roseville Municipal Code Sections 18.20.150 and 18.20.160. Each security shall be in the amount of one hundred percent (100%) of the total estimated cost of the Work as determined by the City Engineer which amount is the sum of \$ 4,002,834.15. One improvement security shall secure faithful performance of this Agreement as required by Section 66499.3(a) of the Government Code of the State of California (the "faithful performance" security). The second improvement security shall, as required by Section 66499.3(b) of the Government Code of the State of California, secure the obligations set forth in Title 15

(commencing with Section 3082) of Part 4 of Division 3 of the Civil Code of the State of California for payment to the contractor, his subcontractors and to persons renting equipment or furnishing labor or materials to them for the Work (the "payment security"). The improvement securities required under this paragraph shall also secure placement of monumentation and guarantee payment therefor as provided by California Government Code section 66496.

b. SUBDIVIDER shall also file with this Agreement a "guarantee and warranty security" in the amount of ten percent (10%) of the City Engineer's estimated cost of the Work as set forth in Section 18.20.170 of the Roseville Municipal Code to guarantee and warrant the Work for a period of one year following its completion and acceptance against any defective work or labor done, or defective materials furnished, as required by Section 66499(a)(5) of the Government Code of the State of California. The guarantee and warranty security shall be released upon SUBDIVIDER's request following expiration of the warranty period and subject to the reasonable determination of the City Engineer that SUBDIVIDER's warranty obligations have been satisfied.

c. Any bonds submitted as security pursuant to this section shall be executed by a surety company authorized to transact a surety business in the State of California. All required securities shall be in a form approved by the City Attorney of CITY.

6. Successors and Assigns – Covenant Running with the Land. This Agreement shall inure to the benefit of, and be binding upon, the successors and assigns of the respective parties. It shall be recorded in the Office of the Recorder of Placer County concurrently with the final map of the Subdivision, and shall constitute a covenant running with the land and an equitable servitude upon the real property within the Subdivision.

7. Acceptance of Improvements Upon Completion. Upon satisfactory completion of the Work, in accordance with this Agreement, CITY agrees to accept the Work and its

improvements and the offers of dedication described in paragraph 1, subject to the provisions of paragraphs 1 and 10 of this Agreement.

8. Notice Regarding Construction. SUBDIVIDER shall notify the City Engineer of CITY in writing three (3) days prior to the commencement of construction of the Work.

9. Subdivider's Obligation to Warn Public During Construction. Until final acceptance of the Work, SUBDIVIDER shall give good and adequate warning to the public of each and every dangerous condition which may exist in the Work, and will take all reasonable actions to protect the public from any such dangerous condition.

10. Warranty.

a. SUBDIVIDER guarantees and warrants the public improvements which constitute the Work required by this Agreement, and agrees to remedy any defects in the improvements or the Work arising from faulty or defective materials or construction of said improvements or the Work occurring within twelve (12) months after their acceptance by CITY. SUBDIVIDER agrees to permit inspection of all improvements in the Subdivision by the City Engineer of CITY for such period, and to reimburse CITY for the cost of such inspections.

b. If, within the warranty period, the Work or improvement or any part of the Work done, furnished, installed, or constructed fails to fulfill any of the requirements of this Agreement or the improvement plans and specifications, SUBDIVIDER shall, without delay or cost to CITY, repair, replace or reconstruct any defective or otherwise unsatisfactory part or parts of the Work. CITY may, at its sole option, perform such repair or replacement itself if SUBDIVIDER has failed to commence such repair within twenty (20) days after CITY has mailed written notice of default to SUBDIVIDER and to SUBDIVIDER'S Surety. In such event, SUBDIVIDER agrees to pay the cost of such repair and replacement by CITY and CITY may, at its option, recover such cost as a lien against the Subdivision should the cost exceed the inspection fee deposited pursuant to paragraph 4 of this Agreement.

Should CITY determine that the public safety requires repairs or replacements to be made before SUBDIVIDER can be notified, CITY may, in its sole discretion, make the necessary repairs or replacement or perform the necessary work. SUBDIVIDER shall pay to CITY the cost of such repairs and CITY may at its option recover such cost as a lien against the Subdivision.

11. Indemnification. To the fullest extent allowed by law, SUBDIVIDER shall defend, indemnify, and save and hold harmless CITY, its officers, agents, employees and volunteers from any claims, suits or actions of every name, kind and description brought forth, or on account of, injuries to or death of any person (including but not limited to workers and the public), or damage to property, resulting from or arising out of SUBDIVIDER 's willful misconduct or negligent act or omission while engaged in the performance of obligations or exercise of rights created by this Agreement, except those matters arising from CITY's sole or active negligence or willful misconduct. The parties intend that this provision shall be broadly construed.

SUBDIVIDER's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law. The defense and indemnity obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.

12. Insurance. SUBDIVIDER agrees to continuously maintain, in full force and effect, at a minimum the following policies of insurance during the term of this Agreement.

COVERAGE

General Liability

Automobile Liability

LIMITS OF LIABILITY

\$2,000,000 per occurrence

\$4,000,000 aggregate

Personal Injury:

\$2,000,000 per occurrence

\$4,000,000 aggregate

\$1,000,000 combined single limit

a. Form. SUBDIVIDER shall submit a certificate evidencing such coverage for the period covered by this Agreement in a form satisfactory to Risk Management and the City Attorney, prior to undertaking any work hereunder. Any insurance written on a claims made basis is subject to the approval of Risk Management and the City Attorney.

b. Additional Insureds. SUBDIVIDER shall also provide a separate endorsement form or section of the policy showing CITY, its officers, agents, employees and volunteers as additional insureds for each type of coverage, except for Workers' Compensation, for ongoing and completed operations. Such insurance shall specifically cover the contractual liability of SUBDIVIDER. The additional insured coverage under the SUBDIVIDER's policy shall be primary and noncontributory, as evidenced by a separate endorsement or section of the policy, and shall not seek contribution from CITY's insurance or self-insurance. In addition, the additional insured coverage shall be at least as broad as the Insurance Services Office ("ISO") CG 20 01 Endorsement. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

c. Cancellation/Modification. SUBDIVIDER shall provide ten (10) days written notice to CITY prior to cancellation or modification of any insurance required by this Agreement.

d. Umbrella/Excess Insurance. The limits of insurance required in this Agreement may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply

on a primary and noncontributory basis for the benefit of CITY (if agreed to in a written contract) before CITY's own insurance shall be called upon to protect it as a named insured.

e. Self-Insured Retentions. All self-insured retentions ("SIR") must be disclosed to Risk Management for approval and shall not reduce the limits of liability. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or CITY. CITY reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

f. Waiver of Subrogation. SUBDIVIDER hereby agrees to waive subrogation which any insurer of SUBDIVIDER may acquire from SUBDIVIDER by virtue of the payment of any loss under a Workers Compensation, Commercial General Liability or Automobile Liability policy. All Workers Compensation, Commercial General Liability and Automobile Liability policies shall be endorsed with a waiver of subrogation in favor of CITY, its officers, agents, employees and volunteers for all work performed by SUBDIVIDER, its employees, agents and subcontractors.

g. Liability/Remedies. Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve SUBDIVIDER of liability in excess of such coverage, nor shall it preclude CITY from taking such other actions as are available to it under any other provisions of this Agreement or law.

13. Irrevocability of Security. The improvement securities furnished pursuant to paragraph 5 shall be irrevocable, shall not be limited as to time (except as to the one-year guarantee and warranty period specified in paragraph 10) and shall provide that they may be released, in whole or part, only upon the written approval of the City Engineer of CITY.

14. Attorney's Fees; Venue; Governing Law. Any action by any party to this Agreement, or any action concerning a security furnished pursuant to paragraph 5, shall be

brought in the appropriate court of competent jurisdiction within the County of Placer, State of California, notwithstanding any other provision of law which may provide that such action may be brought in some other location. In the event it becomes necessary for either party to bring an action with respect to enforcement of the provisions of this Agreement, or the security therefor, the prevailing party in such action shall be awarded a reasonable attorney's fee, as may be determined by the Court. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

15. Release of Faithful Performance Security. Release of faithful performance security shall be in compliance with and pursuant to the procedures set forth in Government Code Section 66499.7. Upon the completion of all secured Work by SUBDIVIDER and written acceptance of that completed Work by CITY, and the furnishing of the warranty security as required by paragraph 5(b), the City Engineer shall authorize the release of the remaining faithful performance security.

16. Release of Payment Security. Thirty-five (35) days after a notice of completion is recorded with respect to the Work, the City Engineer of CITY may authorize the release of the payment security, in the event that no claims have been filed against said security. In the event that claims or actions are filed against the security, the City Engineer may release so much of such security as is in excess of the total of the claims made against it, plus a reasonable amount of costs and attorney's fees.

17. Automatic Termination Upon Completion and Sale of Residential Unit. This Agreement and any lien pursuant hereto shall automatically be terminated, without any further action by either party or need to record any additional document, with respect to any single-family residential lot within a parcel designated by the Specific Plan for residential use, upon completion of construction and issuance by the City of a final inspection for a dwelling unit upon such residential lot and conveyance of such improved residential lot to a bona-fide good faith

purchaser thereof. In connection with its issuance of a final inspection for such improved lot, City shall confirm that: (i) all improvements which are required to serve the lot, as determined by City, have been accepted by City; (ii) the lot is included within the Maintenance CFD required by Section 3.20 or other financing mechanism acceptable to the City, to the extent required hereby; and (iii) if and to the extent applicable to such lot, an affordable purchase or rental housing agreement has been recorded on the lot. Termination of this Agreement for any such residential lot as provided for in this section shall not in any way be construed to terminate or modify any assessment district or Mello-Roos Community Facilities District lien affecting such lot at the time of termination.

18. Failure of Performance. In addition to any other remedies provided in this Agreement or by law, in the event SUBDIVIDER fails to perform one or more of the covenants or conditions of this Agreement, CITY shall have recourse to the security given to guarantee the performance of such acts. CITY may do, or cause to be done, those acts required of SUBDIVIDER, and shall have recourse against so much of the security as is necessary to discharge the responsibility of SUBDIVIDER. In the event CITY seeks recourse against a security, CITY shall also have recourse against SUBDIVIDER for any and all amounts necessary to complete the obligations of SUBDIVIDER in the event the security is insufficient to pay such amounts. All administrative costs, including reasonable attorney's fees pursuant to Section 66499.4 of the Government Code, incurred by CITY, in addition to the costs of the improvements, shall be a proper charge against the security and SUBDIVIDER.

19. Integration. This Agreement is an integrated agreement. It supersedes all prior negotiations, representations, or agreements, either written or oral.

20. Modification. This Agreement and each provision contained herein may be waived, amended, supplemented or eliminated only by mutual written agreement of the parties.

21. Notices. Any notices sent to the parties relating to this Agreement shall be sent by first class mail, postage prepaid or delivered to the following addresses:

Marc Stout, City Engineer
City of Roseville
311 Vernon Street
Roseville, CA 95678

Sierra Vista Communities LLC
1025 Creekside Ridge Dr., #240
Roseville, CA 95661
Attn: Larry Gualco

Either party may amend its address by giving written notice to the other.

22. Severability. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attestation by its City Clerk under authority of Resolution No. ____, adopted by the Council of the City of Roseville on the ____ day of ____, 20__, and SUBDIVIDER has caused this Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation,

BY: _____
DOMINICK CASEY
City Manager

Sierra Vista Communities LLC _____,
a California limited liability company
By Lennar Homes of California, Inc.
a California Corporation,
BY:  _____
its: Managing Member

ATTEST:

and

BY: _____

BY: _____

SONIA OROZCO
City Clerk

its: _____

(NOTARIZATION REQUIRED)

APPROVED AS TO FORM:

BY: _____

ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUFFICIENCY:

BY: _____


MARC STOUT
City Engineer

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer } ss.

On June 1, 2020 before me, Monique Reynolds,

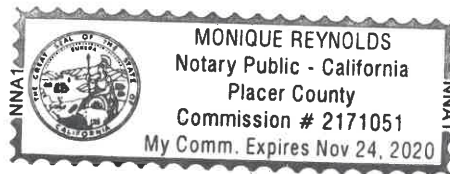
Notary Public, personally appeared Larry Gualco

who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signatures~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Monique Reynolds
Signature



(seal)

OPTIONAL INFORMATION

Date of Document

Sierra Vista KT-3B

Thumbprint of Signer

Type or Title of Document

Number of Pages in Document

Document in a Foreign Language

Type of Satisfactory Evidence:

- ☐ Personally Known with Paper Identification
☐ Paper Identification
☐ Credible Witness(es)

Capacity of Signer:

- ☐ Trustee
☐ Power of Attorney
☐ CEO / CFO / COO
☐ President / Vice-President / Secretary / Treasurer
☐ Other: _____

☐ Check here if no thumbprint or fingerprint is available.

Other Information: _____

Bond No. LICX1195234
Premium \$ 26,018.00/annum

SUBDIVISION FAITHFUL PERFORMANCE BOND
(Subdivision: Sierra Vista Village KT-3B)

WHEREAS, the City of Roseville ("CITY"), and Sierra Vista Communities, LLC ("PRINCIPAL")
have entered into an agreement whereby PRINCIPAL agrees to install and complete
certain designated public improvements, which said agreement ("AGREEMENT"),
dated , 20 , and identified as
Sierra Vista Village KT-3B is hereby referred to and made a
(Name of Subdivision)
part hereof; and

WHEREAS, said PRINCIPAL is required under the terms of said AGREEMENT
to furnish a bond for the faithful performance of said AGREEMENT; and

NOW, THEREFORE, the PRINCIPAL and Lexon Insurance Company
a Texas corporation, admitted and duly authorized to transact
business under the laws of the State of California, as SURETY ("SURETY"), are held
and firmly bound unto the CITY of Roseville, hereinafter called "CITY", in the penal sum
of Four million two thousand eight hundred thirty-four and 15/100 dollars
(\$ 4,002,834.15) lawful money of the United States, for the payment of which sum
well and truly to be made, SURETY binds itself, its heirs, successors, executors and
administrators, jointly and severally, firmly to this instrument.

The condition of this obligation is such that if the PRINCIPAL, his or its heirs,
executors, administrators, successors or assigns, shall abide by, and in all respects
perform the covenants, conditions and provisions in said AGREEMENT and any
alteration thereof made as therein provided, on his or its part to be kept and performed
at the time and in the manner therein specified, and in all respects according to their
true intent and meaning, and shall indemnify and save harmless CITY, its officers,
agents and employees, as therein stipulated, then this obligation shall be null and void;
otherwise, this obligation shall be and remain in full force and effect.

As part of the obligation secured hereby and in addition to the face amount
specified therefore, there shall be included costs and reasonable expenses and fees,
including reasonable attorneys' fees, incurred by CITY in successfully enforcing such
obligation, all to be taxed as costs and included in any judgment rendered.

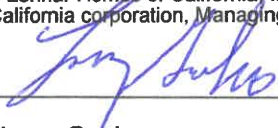
The SURETY hereby stipulates and agrees that no change, extension of time,
alteration or addition to the terms of the AGREEMENT or to the work to be performed
thereunder or the specifications accompanying the same shall in any way affect
SURETY'S obligations under this bond, and it does hereby waive notice of any such

change, extension of time, alteration or addition to the terms of the agreement or to the work or to the specifications. The SURETY waives all rights of subrogation against the CITY or any person employed by the CITY. The SURETY hereby waives the provisions of Section 2819 of the Civil Code.

IN WITNESS WHEREOF, this instrument has been duly executed by the PRINCIPAL and SURETY above-named, on the 28th day of May, 2020.

Sierra Vista Communities, LLC,
a California limited liability company
By: Lennar Homes of California, Inc.,
a California corporation, Managing Member

PRINCIPAL: _____

BY: 

PRINT NAME: Larry Gualco

PRINT TITLE: Vice President

SURETY: Lexon Insurance Company

BY: 

PRINT NAME: Mechelle Larkin

PRINT TITLE: Attorney-in-Fact

AND

N/A

MAILING ADDRESS:

BY: _____

PRINT NAME: _____

PRINT TITLE: _____

Lexon Insurance Company, Atten. Surety Dept.

10002 Shelbyville Rd, Suite 100

Louisville, KY 40223

**(Notarization by Surety and copy of
Power of Attorney required.)**

APPROVED AS TO FORM:

BY: 
City Attorney

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Orange)

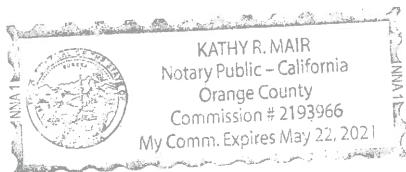
On May 28, 2020 before me, Kathy R. Mair, Notary Public,
DATE [Name of Notary Public and Title "Notary Public"]

personally appeared Mechelle Larkin -----,
[Name(s) of Signer(s)]

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Kathy R. Mair
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Mechelle Larkin

- ☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General
☐ Individual ☒ Attorney-in-Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

Signer's Name: _____

- ☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney-in-Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____

Signer is Representing: _____

Lexon Insurance Company

KNOW ALL MEN BY THESE PRESENTS, that **LEXON INSURANCE COMPANY**, a Texas Corporation, with its statutory home office in Austin, Texas, does hereby constitute and appoint: Mechelle Larkin, Kathy R. Mair, My Hua, Brenda Wong, Tenzer V. Cunningham, Martha Gonzales, Joaquin Perez, Jeffrey Strassner its true and lawful Attorney(s)-In-Fact to make, execute, seal and deliver for, and on its behalf as surety, any and all bonds, undertakings or other writings obligatory in nature of a bond.

This authority is made under and by the authority of a resolution which was passed by the Board of Directors of **LEXON INSURANCE COMPANY** on the 1st day of July, 2003 as follows:

Resolved, that the President of the Company is hereby authorized to appoint and empower any representative of the Company or other person or persons as Attorney-In-Fact to execute on behalf of the Company any bonds, undertakings, policies, contracts of indemnity or other writings obligatory in nature of a bond not to exceed \$5,000,000.00, Five Million Dollars, which the Company might execute through its duly elected officers, and affix the seal of the Company thereto. Any said execution of such documents by an Attorney-In-Fact shall be as binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company. Any Attorney-In-Fact, so appointed, may be removed for good cause and the authority so granted may be revoked as specified in the Power of Attorney.

Resolved, that the signature of the President and the seal of the Company may be affixed by facsimile on any power of attorney granted, and the signature of the Assistant Secretary, and the seal of the Company may be affixed by facsimile to any certificate of any such power and any such power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certificate so executed and sealed shall, with respect to any bond of undertaking to which it is attached, continue to be valid and binding on the Company.

IN WITNESS THEREOF, **LEXON INSURANCE COMPANY** has caused this instrument to be signed by its President, and its Corporate Seal to be affixed this 22nd day of June, 2018.

LEXON INSURANCE COMPANY



BY _____

Brian Beggs

Brian Beggs
President

ACKNOWLEDGEMENT

On this 22nd day of June, 2018, before me, personally came Brian Beggs to me known, who be duly sworn, did depose and say that he is the President of **LEXON INSURANCE COMPANY**, the corporation described in and which executed the above instrument; that he executed said instrument on behalf of the corporation by authority of his office under the By-laws of said corporation.



AMY TAYLOR
Notary Public- State of Tennessee
Davidson County
My Commission Expires 5-9-2023

BY _____

Amy Taylor

Amy Taylor
Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of **LEXON INSURANCE COMPANY**, A Texas Insurance Company, DO HEREBY CERTIFY that the original Power of Attorney of which the forgoing is a true and correct copy, is in full force and effect and has not been revoked and the resolutions as set forth are now in force.

Signed and Seal at Mount Juliet, Tennessee this 28th Day of May, 2020.



BY _____

Andrew Smith

Andrew Smith
Assistant Secretary

"WARNING: Any person who knowingly and with intent to defraud any insurance company or other person, files and application for insurance of claim containing any materially false information, or conceals for the purpose of misleading, information concerning any fact material thereto, commits a fraudulent insurance act, which is a crime and subjects such person to criminal and civil penalties."

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer } ss.

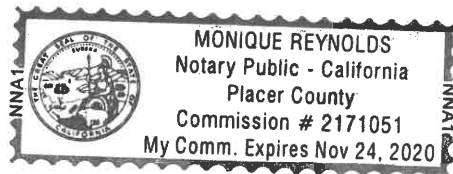
On June 1, 2020 before me, Monique Reynolds,
Notary Public, personally appeared Larry Gualco

who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signatures~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Monique Reynolds
Signature



(seal)

OPTIONAL INFORMATION

Date of Document

Sierra Vista KT 3B

Thumbprint of Signer

Type or Title of Document

Number of Pages in Document

Document in a Foreign Language

Type of Satisfactory Evidence:

- ☐ Personally Known with Paper Identification
☐ Paper Identification
☐ Credible Witness(es)

Capacity of Signer:

- ☐ Trustee
☐ Power of Attorney
☐ CEO / CFO / COO
☐ President / Vice-President / Secretary / Treasurer
☐ Other: _____

☐ Check here if
no thumbprint
or fingerprint
is available.

Other Information: _____



Company Profile
Company Search
Company Search Results
Company Information
Old Company Names
Agent for Service
Reference Information
NAIC Group List
Lines of Business
Workers' Compensation Complaint and Request for Action/Appeals Contact Information
Financial Statements PDF's
Annual Statements
Quarterly Statements
Company Complaint
Company Performance & Comparison Data
Company Enforcement Action
Composite Complaints Studies
Additional Info
Find A Company Representative In Your Area
View Financial Disclaimer

COMPANY PROFILE**Company Information****LEXON INSURANCE COMPANY**

**12890 LEBANON ROAD
MOUNT JULIET, TN 37216**

Old Company Names**Effective Date****Agent For Service**

Melissa DeKoven
2710 Gateway Oaks Drive, Suite 150N
Sacramento CA 95833-3505

Reference Information

NAIC #:	13307
California Company ID #:	5113-6
Date Authorized in California:	06/02/2008
License Status:	UNLIMITED-NORMAL
Company Type:	Property & Casualty
State of Domicile:	TEXAS

[back to top](#)**NAIC Group List**

NAIC Group #: **3219** Somp Grp

Lines Of Business

The company is authorized to transact business within these lines of insurance. For an explanation of any of these terms, please refer to the [glossary](#).

SURETY

[back to top](#)

Bond No. LICX1195234
Premium \$ Included in Perf. Bond

SUBDIVISION PAYMENT BOND
(Subdivision: Sierra Vista Village KT-3B)

WHEREAS, the City of Roseville ("CITY"), and Sierra Vista Communities, LLC
("PRINCIPAL") have entered into an agreement whereby PRINCIPAL agrees to install
and complete certain designated public improvements, which said agreement,
("AGREEMENT") dated _____, 20____, and identified
as Sierra Vista Village KT-3B
(Name of Subdivision)
is hereby referred to and made a part hereof; and

WHEREAS, under the terms of said AGREEMENT, PRINCIPAL is required
before entering upon the performance of the work, to file a good and sufficient payment
bond with the CITY to secure the claims to which reference is made in Title 1
(commencing with Section 8000) of Part 6 of Division 4 of the Civil Code of the State of
California; and

NOW, THEREFORE, said PRINCIPAL and the undersigned
Lexon Insurance Company a Texas,
admitted and duly authorized to transact business under the laws of the State of
California, as SURETY ("SURETY"), are held and firmly bound unto the CITY
and all contractors, subcontractors, laborers, materialmen and other
persons employed in the performance of the aforesaid AGREEMENT and referred
to in the aforesaid Civil Code in the sum of _____
Four million two thousand eight hundred thirty-four and 15/100 dollars
(\$4,002,834.15), for materials furnished or labor thereon of any kind, or for amounts
due under the Unemployment Insurance Act with respect to such work or labor, that
said SURETY will pay the same in an amount not exceeding the amount hereinabove
set forth, and also in case suit is brought upon this bond, will pay, in addition to the face
amount thereof, costs and reasonable expenses and fees, including reasonably
attorney's fees, incurred in successfully enforcing such obligation, to be awarded and
fixed by the court, and to be taxed as costs and to be included in the judgment therein
rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the
benefit of any of any and all persons, companies and corporations entitled to file claims
under Title 1 (commencing with Section 8000) of Part 6 of Division 4 of the Civil Code
so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall
become null and void, otherwise it shall be and remain in full force and effect.

The SURETY hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of said AGREEMENT or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligations under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the AGREEMENT or to the work or to the specifications. The SURETY waives all rights of subrogation against the CITY or any person employed by the CITY. The SURETY hereby waives the provisions of Section 2819 of the Civil Code.

IN WITNESS WHEREOF, this instrument has been duly executed by the PRINCIPAL and SURETY above-named, on the 28th day of May, 2020.

Sierra Vista Communities, LLC,
a California limited liability company
By: Lennar Homes of California, Inc.,
a California corporation, Managing Member

PRINCIPAL:

BY: 

PRINT NAME: Larry Gualco

PRINT TITLE: Vice President

SURETY: Lexon Insurance Company

BY: 

PRINT NAME: Mechelle Larkin

PRINT TITLE: Attorney-in-Fact

AND N/A

MAILING ADDRESS:

BY: _____

PRINT NAME: _____

PRINT TITLE: _____

Lexon Insurance Company, Atten. Surety Dept.

10002 Shelbyville Rd, Suite 100

Louisville, KY 40223

**(Notarization by Surety and copy of
Power of Attorney required.)**

APPROVED AS TO FORM:

BY: 

City Attorney

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Orange)

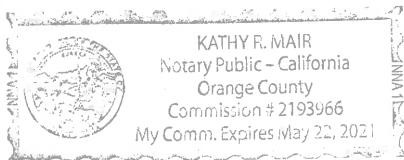
On May 28, 2020 before me, Kathy R. Mair, Notary Public,
DATE [Name of Notary Public and Title "Notary Public"]

personally appeared Mechelle Larkin -----
[Name(s) of Signer(s)]

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Kathy R. Mair
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Mechelle Larkin

- ☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General
☐ Individual ☒ Attorney-in-Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

Signer's Name: _____

- ☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney-in-Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____

Signer is Representing: _____

Lexon Insurance Company

KNOW ALL MEN BY THESE PRESENTS, that **LEXON INSURANCE COMPANY**, a Texas Corporation, with its statutory home office in Austin, Texas, does hereby constitute and appoint: Mechelle Larkin, Kathy R. Mair, My Hua, Brenda Wong, Tenzer V. Cunningham, Martha Gonzales, Joaquin Perez, Jeffrey Strassner its true and lawful Attorney(s)-In-Fact to make, execute, seal and deliver for, and on its behalf as surety, any and all bonds, undertakings or other writings obligatory in nature of a bond.

This authority is made under and by the authority of a resolution which was passed by the Board of Directors of **LEXON INSURANCE COMPANY** on the 1st day of July, 2003 as follows:

Resolved, that the President of the Company is hereby authorized to appoint and empower any representative of the Company or other person or persons as Attorney-In-Fact to execute on behalf of the Company any bonds, undertakings, policies, contracts of indemnity or other writings obligatory in nature of a bond not to exceed \$5,000,000.00, Five Million Dollars, which the Company might execute through its duly elected officers, and affix the seal of the Company thereto. Any said execution of such documents by an Attorney-In-Fact shall be as binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company. Any Attorney-In-Fact, so appointed, may be removed for good cause and the authority so granted may be revoked as specified in the Power of Attorney.

Resolved, that the signature of the President and the seal of the Company may be affixed by facsimile on any power of attorney granted, and the signature of the Assistant Secretary, and the seal of the Company may be affixed by facsimile to any certificate of any such power and any such power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certificate so executed and sealed shall, with respect to any bond of undertaking to which it is attached, continue to be valid and binding on the Company.

IN WITNESS THEREOF, **LEXON INSURANCE COMPANY** has caused this instrument to be signed by its President, and its Corporate Seal to be affixed this 22nd day of June, 2018.

LEXON INSURANCE COMPANY



BY

Brian Beggs
President

ACKNOWLEDGEMENT

On this 22nd day of June, 2018, before me, personally came Brian Beggs to me known, who be duly sworn, did depose and say that he is the President of **LEXON INSURANCE COMPANY**, the corporation described in and which executed the above instrument; that he executed said instrument on behalf of the corporation by authority of his office under the By-laws of said corporation.



AMY TAYLOR
Notary Public- State of Tennessee
Davidson County
My Commission Expires 5-9-2023

BY

Amy Taylor
Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of **LEXON INSURANCE COMPANY**, A Texas Insurance Company, DO HEREBY CERTIFY that the original Power of Attorney of which the forgoing is a true and correct copy, is in full force and effect and has not been revoked and the resolutions as set forth are now in force.

Signed and Seal at Mount Juliet, Tennessee this 28th Day of May, 2020.



BY

Andrew Smith
Assistant Secretary

"WARNING: Any person who knowingly and with intent to defraud any insurance company or other person, files and application for insurance of claim containing any materially false information, or conceals for the purpose of misleading, information concerning any fact material thereto, commits a fraudulent insurance act, which is a crime and subjects such person to criminal and civil penalties."

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer } ss.

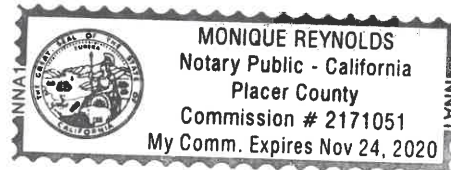
On June 1, 2020 before me, Monique Reynolds,

Notary Public, personally appeared Larry Gualco

who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signatures~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Monique Reynolds
Signature

(seal)

OPTIONAL INFORMATION

Date of Document

Sierra Vista KT 3B

Thumbprint of Signer

Type or Title of Document

Number of Pages in Document

Document in a Foreign Language

Type of Satisfactory Evidence:

- ☐ Personally Known with Paper Identification
☐ Paper Identification
☐ Credible Witness(es)

Capacity of Signer:

- ☐ Trustee
☐ Power of Attorney
☐ CEO / CFO / COO
☐ President / Vice-President / Secretary / Treasurer
☐ Other: _____

☐ Check here if no thumbprint or fingerprint is available.

Other Information: _____



Company Profile

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Request for

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Complaints Studies

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COMPANY PROFILE

Company Information

LEXON INSURANCE COMPANY

12890 LEBANON ROAD
MOUNT JULIET, TN 37216

Old Company Names

Effective Date

Agent For Service

Melissa DeKoven
2710 Gateway Oaks Drive, Suite 150N
Sacramento CA 95833-3505

Reference Information

NAIC #:	13307
California Company ID #:	5113-6
Date Authorized in California:	06/02/2008
License Status:	UNLIMITED-NORMAL
Company Type:	Property & Casualty
State of Domicile:	TEXAS

[back to top](#)

NAIC Group List

NAIC Group #: 3219 Sampo Grp

Lines Of Business

The company is authorized to transact business within these lines of insurance.
For an explanation of any of these terms, please refer to the [glossary](#).

SURETY

[back to top](#)

Bond No. LICX1195234-M

Premium \$ Included in Perf. Bond

**SUBDIVISION MAINTENANCE BOND
GUARANTEE AND WARRANTY SECURITY**
(Subdivision: Sierra Vista Village KT-3B)

WHEREAS, the City of Roseville ("CITY") and Sierra Vista Communities, LLC

("PRINCIPAL") have entered into an agreement by which PRINCIPAL agrees to install and complete certain designated public improvements and to guarantee and warrant the work for a period of one year following its completion and acceptance, which agreement, dated _____, 20____, and identified as _____

Sierra Vista Village KT-3B

(Name of Subdivision)

is hereby referred to and made a part hereof; and

WHEREAS, said PRINCIPAL is required under the terms of said AGREEMENT to furnish a bond to guarantee and warrant the work for a period of one year following its completion and acceptance against any defective work or labor done, or defective materials furnished, to comply with the terms of said AGREEMENT; and

NOW, THEREFORE, we, the PRINCIPAL and Lexon Insurance Company
a Texas, admitted and duly authorized to transact business
under the laws of the State of California, as Surety ("SURETY"), are held and firmly
bound unto the CITY in the penal sum of _____
Four hundred thousand two hundred eighty-three and 42/100 dollars
(\$ 400,283.42), lawful money of the United States, for the payment of which
sum well and truly to be made, we bind ourselves, our heirs, successors, executors and
administrators, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the PRINCIPAL, his or its heirs, executors, administrators, successors or assigns, shall abide by, and in all respects perform the covenants, conditions and provisions in said AGREEMENT and any alteration thereof made as therein provided, on his or its part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless CITY, its officers, agents and employees, as therein stipulated, then this obligation shall be null and void; otherwise, this obligation shall be and remain in full force and effect.

As part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by CITY in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

The SURETY hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the AGREEMENT or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect SURETY'S obligations under this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the agreement or to the work or to the specifications. The SURETY waives all rights of subrogation against the CITY or any person employed by the CITY. The SURETY hereby waives the provisions of Section 2819 of the Civil Code.

IN WITNESS WHEREOF, this instrument has been duly executed by the PRINCIPAL and SURETY above-named, on the 28th day of May, 2020.

Sierra Vista Communities, LLC,
a California limited liability company
By: Lennar Homes of California, Inc.,
a California corporation, Managing Member

PRINCIPAL:

BY:

PRINT NAME: Larry Gualco

PRINT TITLE: Vice President

SURETY: Lexon Insurance Company

BY:

PRINT NAME: Mechelle Larkin

PRINT TITLE: Attorney-in-Fact

AND N/A

MAILING ADDRESS:

BY: _____

PRINT NAME: _____

PRINT TITLE: _____

Lexon Insurance Company, Atten. Surety Dept.

10002 Shelbyville Rd, Suite 100

Louisville, KY 40223

**(Notarization by Surety and copy of
Power of Attorney required.)**

APPROVED AS TO FORM:

BY:

Robert R. Schmitz
City Attorney

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

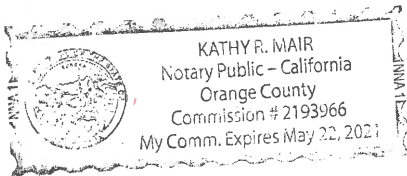
County of Orange)

On May 28, 2020 before me, Kathy R. Mair, Notary Public,
DATE [Name of Notary Public and Title "Notary Public"]

personally appeared Mechelle Larkin -----,
[Name(s) of Signer(s)]

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.



WITNESS my hand and official seal.

Kathy R. Mair
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Mechelle Larkin

- ☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General
☐ Individual ☒ Attorney-in-Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

Signer's Name: _____

- ☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney-in-Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____

Signer is Representing: _____

Lexon Insurance Company

KNOW ALL MEN BY THESE PRESENTS, that **LEXON INSURANCE COMPANY**, a Texas Corporation, with its statutory home office in Austin, Texas, does hereby constitute and appoint: Mechelle Larkin, Kathy R. Mair, My Hua, Brenda Wong, Tenzer V. Cunningham, Martha Gonzales, Joaquin Perez, Jeffrey Strassner its true and lawful Attorney(s)-In-Fact to make, execute, seal and deliver for, and on its behalf as surety, any and all bonds, undertakings or other writings obligatory in nature of a bond.

This authority is made under and by the authority of a resolution which was passed by the Board of Directors of **LEXON INSURANCE COMPANY** on the 1st day of July, 2003 as follows:

Resolved, that the President of the Company is hereby authorized to appoint and empower any representative of the Company or other person or persons as Attorney-In-Fact to execute on behalf of the Company any bonds, undertakings, policies, contracts of indemnity or other writings obligatory in nature of a bond not to exceed \$5,000,000.00, Five Million Dollars, which the Company might execute through its duly elected officers, and affix the seal of the Company thereto. Any said execution of such documents by an Attorney-In-Fact shall be as binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company. Any Attorney-In-Fact, so appointed, may be removed for good cause and the authority so granted may be revoked as specified in the Power of Attorney.

Resolved, that the signature of the President and the seal of the Company may be affixed by facsimile on any power of attorney granted, and the signature of the Assistant Secretary, and the seal of the Company may be affixed by facsimile to any certificate of any such power and any such power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certificate so executed and sealed shall, with respect to any bond of undertaking to which it is attached, continue to be valid and binding on the Company.

IN WITNESS THEREOF, **LEXON INSURANCE COMPANY** has caused this instrument to be signed by its President, and its Corporate Seal to be affixed this 22nd day of June, 2018.

LEXON INSURANCE COMPANY



BY _____

Brian Beggs
Brian Beggs
President

ACKNOWLEDGEMENT

On this 22nd day of June, 2018, before me, personally came Brian Beggs to me known, who be duly sworn, did depose and say that he is the President of **LEXON INSURANCE COMPANY**, the corporation described in and which executed the above instrument; that he executed said instrument on behalf of the corporation by authority of his office under the By-laws of said corporation.



AMY TAYLOR
Notary Public- State of Tennessee
Davidson County
My Commission Expires 5-9-2023

BY _____

Amy Taylor
Amy Taylor
Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of **LEXON INSURANCE COMPANY**, A Texas Insurance Company, DO HEREBY CERTIFY that the original Power of Attorney of which the forgoing is a true and correct copy, is in full force and effect and has not been revoked and the resolutions as set forth are now in force.

Signed and Seal at Mount Juliet, Tennessee this 28th Day of May, 2020.



BY _____

Andrew Smith
Andrew Smith
Assistant Secretary

"WARNING: Any person who knowingly and with intent to defraud any insurance company or other person, files and application for insurance of claim containing any materially false information, or conceals for the purpose of misleading, information concerning any fact material thereto, commits a fraudulent insurance act, which is a crime and subjects such person to criminal and civil penalties."

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer } ss.

On June 1, 2020 before me, Monique Reynolds,

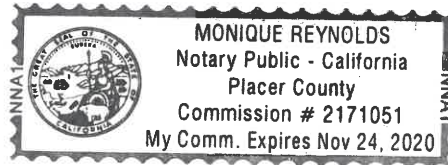
Notary Public, personally appeared Larry Gualco

who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signatures~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Monique Reynolds
Signature



(seal)

OPTIONAL INFORMATION

Date of Document

Sierra Vista KT 3B

Thumbprint of Signer

Type or Title of Document

Number of Pages in Document

Document in a Foreign Language

Type of Satisfactory Evidence:

- ☐ Personally Known with Paper Identification
☐ Paper Identification
☐ Credible Witness(es)

Capacity of Signer:

- ☐ Trustee
☐ Power of Attorney
☐ CEO / CFO / COO
☐ President / Vice-President / Secretary / Treasurer
☐ Other: _____

☐ Check here if
no thumbprint
or fingerprint
is available.

Other Information: _____



Company Profile

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Agent for Service

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COMPANY PROFILE

Company Information

LEXON INSURANCE COMPANY

12890 LEBANON ROAD
MOUNT JULIET, TN 37216

Old Company Names

Effective Date

Agent For Service

Melissa DeKoven
2710 Gateway Oaks Drive, Suite 150N
Sacramento CA 95833-3505

Reference Information

NAIC #:	13307
California Company ID #:	5113-6
Date Authorized in California:	06/02/2008
License Status:	UNLIMITED-NORMAL
Company Type:	Property & Casualty
State of Domicile:	TEXAS

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NAIC Group List

NAIC Group #: 3219 Sampo Grp

Lines Of Business

The company is authorized to transact business within these lines of insurance.
For an explanation of any of these terms, please refer to the [glossary](#).

SURETY

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COUNCIL COMMUNICATION

CC #: 0859

File #: 0400-04-12-1 & 0400-07

Title: Sierra Vista Village KT-5A Final Map and Subdivision Agreement

Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 7.11.

RECOMMENDATION TO COUNCIL

Staff recommends that the City Council take the following actions:

1. Approve the final map on file with the City Clerk and accept on behalf of the public, subject to improvement, Lot A and the rights of way and the easements offered thereon.
2. Adopt the attached resolution approving the Subdivision Agreement and authorize the City Manager to execute the agreement on behalf of the City.

BACKGROUND

The Development Services, Engineering section, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 69 residential lots and 1 public landscape lot.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

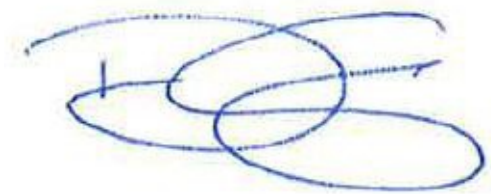
Approval of the Sierra Vista Village KT-5A final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Sierra Vista Village KT-5A final map was accomplished with preparation of the Sierra Vista Specific Plan EIR (Adopted: May 5, 2010) (SCH#2008032017) and the Mitigated Negative Declaration (MND) and associated Mitigation Monitoring Program approved by the City of Roseville on June 6, 2012. Because the Sierra Vista Village KT-5A final map is consistent with the project evaluated in the Sierra Vista Specific Plan Environmental Impact Report (EIR), no new effects would be expected to occur and all applicable mitigation measures from the Sierra Vista Specific Plan EIR will be

implemented. As such, no additional CEQA action is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director

A handwritten signature in blue ink, consisting of several overlapping loops and a horizontal line, positioned above a horizontal line.

Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

Resolution No. 20-270

Subdivision Agreement

OWNER'S STATEMENT

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTEREST IN THE REAL PROPERTY INCLUDED WITHIN THE SUBDIVISION SHOWN UPON THIS FINAL MAP OF "SIERRA VISTA - VILLAGE KT-5A" AND THEY HEREBY CONSENT TO THE PREPARATION AND RECORDATION OF THIS FINAL MAP AND HEREBY OFFER FOR DEDICATION AND DO HEREBY DEDICATE FOR PARTICULAR PURPOSES THE FOLLOWING:

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS EASEMENT FOR PUBLIC PURPOSES:

- (A) PUBLIC EASEMENTS FOR THE INSTALLATION AND MAINTENANCE OF, BUT NOT LIMITED TO ELECTROLIERS, WATER AND GAS PIPES, SEWER AND DRAINAGE PIPES, AND FOR UNDERGROUND WIRE AND CONDUITS, ABOVE GROUND APPURTENANCES FOR ELECTRIC, TELEPHONE AND TELEVISION SERVICES AND TRAFFIC CONTROL APPURTENANCES TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER AND ACROSS LOT A AND THOSE STRIPS OF LAND LYING CONTIGUOUS TO THE RIGHT OF WAY AS SHOWN HEREON AND DESIGNATED "P.U.E." (PUBLIC UTILITY EASEMENT).

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED IN FEE FOR PUBLIC PURPOSES:

- (A) AS PUBLIC RIGHT OF WAY (INCLUDING IMPROVEMENTS THEREON) THE STREETS SHOWN HEREON AS CATALAN COURT, BRANDENBURBER DRIVE, VISTA PARK DRIVE, OLDENBURG WAY, ORLOV WAY, PENTRO WAY AND LOT A.

SIERRA VISTA COMMUNITIES, LLC
A CALIFORNIA LIMITED LIABILITY COMPANY

BY: AKT INVESTMENTS, INC., A CALIFORNIA CORPORATION

BY: _____ BY: _____
NAME: CHRYSANTHY DEMOS NAME:
TITLE: PRESIDENT & CEO TITLE:

BY: LENNAR HOMES CALIFORNIA INC., A CALIFORNIA CORPORATION

BY: _____ BY: _____
NAME: LARRY GUALCO NAME:
TITLE: VICE PRESIDENT TITLE:

NOTARY'S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY OR VALIDITY OF THAT DOCUMENT.

STATE OF _____ }
COUNTY OF _____ } SS

ON THE _____ DAY OF _____, 2020, BEFORE ME, _____
A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED, _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IIES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL: _____

PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS THE
COUNTY OF: _____

MY COMMISSION EXPIRES: _____

MY COMMISSION NO.: _____

NOTARY'S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY OR VALIDITY OF THAT DOCUMENT.

STATE OF _____ }
COUNTY OF _____ } SS

ON THE _____ DAY OF _____, 2020, BEFORE ME, _____
A NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED, _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IIES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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WITNESS MY HAND AND OFFICIAL SEAL: _____

PRINTED NAME: _____

MY PRINCIPAL PLACE OF BUSINESS IS THE
COUNTY OF: _____

MY COMMISSION EXPIRES: _____

MY COMMISSION NO.: _____

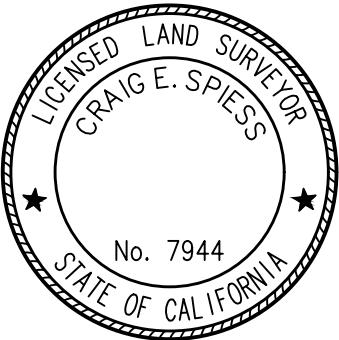
SURVEYOR'S STATEMENT

THIS FINAL MAP OF "SIERRA VISTA - VILLAGE KT-5A" WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCES AT THE REQUEST OF SIERRA VISTA COMMUNITIES, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, IN DECEMBER 2019. I HEREBY STATE THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE APPROVED OR CONDITIONALLY APPROVED TENTATIVE MAP. ALL MONUMENTS SHOWN HEREON ARE OF THE CHARACTER AND WILL OCCUPY THE POSITIONS INDICATED, AND WILL BE SET BY DECEMBER 31, 2021 AND THAT THE MONUMENTS ARE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED.

R.E.Y. ENGINEERS, INC.

CRAIG E. SPIESS, PLS 7944
EXPIRATION DATE: DECEMBER 31, 2021

DATE: _____



CITY ENGINEER'S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS FINAL MAP OF "SIERRA VISTA - VILLAGE KT-5A" AND FIND IT TO BE SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS THEREOF; THAT ALL PROVISIONS OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES HAVE BEEN COMPLIED WITH.

DATE: _____

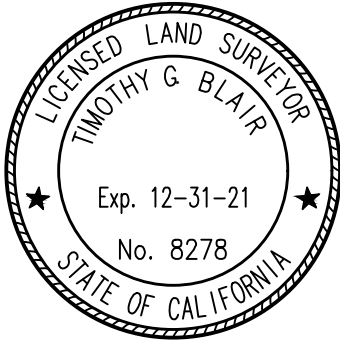
MARC STOUT, R.C.E. 69879
CITY ENGINEER, CITY OF ROSEVILLE
LICENSE EXPIRES: SEPTEMBER 30, 2020

I HEREBY STATE THAT I AM SATISFIED WITH THIS FINAL MAP OF "SIERRA VISTA - VILLAGE KT-5A" IS TECHNICALLY CORRECT.

FOR MARC STOUT, CITY ENGINEER, CITY OF ROSEVILLE

DATE: _____

TIMOTHY G. BLAIR, PLS 8278
EXPIRES DECEMBER 31, 2021



CITY CLERK'S STATEMENT

I HEREBY CERTIFY THAT THE CITY COUNCIL OF THE CITY OF ROSEVILLE, HAS APPROVED THIS FINAL MAP OF "SIERRA VISTA - VILLAGE KT-5A", AND HAS ACCEPTED ON BEHALF OF THE PUBLIC, SUBJECT TO IMPROVEMENT, LOT A, AND ALL RIGHTS-OF-WAY AND EASEMENTS OFFERED HEREON FOR DEDICATION IN ACCORDANCE WITH THE TERMS OF THAT OFFER.

CITY CLERK, CITY OF ROSEVILLE

DATE: _____ BY: _____
ASSISTANT CITY CLERK

RECORDER'S STATEMENT

FILED THIS _____ DAY OF _____, 2020, AT _____ M. IN BOOK _____ OF MAPS, AT PAGE _____, IN THE OFFICE OF THE PLACER COUNTY RECORDER, AT THE REQUEST OF R.E.Y. ENGINEERS, INC.

RECORDED OF PLACER COUNTY
STATE OF CALIFORNIA

BY: _____ FEE: \$ _____
DEPUTY

FINAL MAP OF
SIERRA VISTA
VILLAGE KT-5A
SUBDIVISION No. PL17-0305

BEING A SUBDIVISION OF A PORTION OF LOT 1 AS SHOWN AND SO DESIGNATED ON THAT CERTAIN FINAL MAP ENTITLED "SIERRA VISTA - KT PROPERTIES LARGE LOT SUBDIVISION SUBDIVISION NUMBER PL 15-0192", FILED FOR RECORD ON NOVEMBER 20, 2018 IN BOOK EE OF MAPS, AT PAGE 33, PLACER COUNTY RECORDS, SECTION 35, TOWNSHIP 11 NORTH, RANGE 5 EAST, MOUNT DIABLO MERIDIAN.

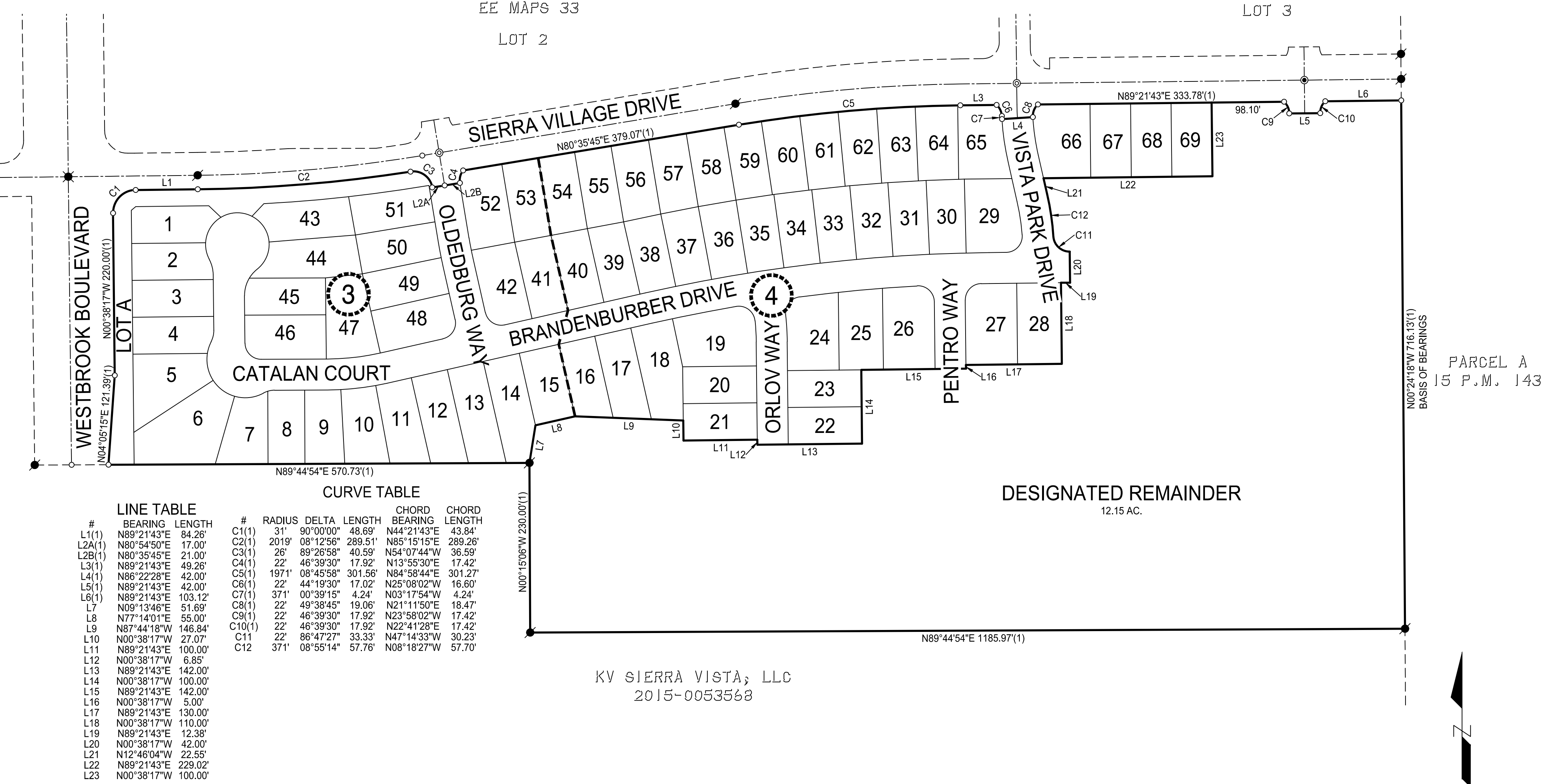
CITY OF ROSEVILLE • PLACER COUNTY • CALIFORNIA

R. E. Y. ENGINEERS, Inc.
Civil Engineers / Land Surveyors
905 Sutter St. Ste 200 Folsom CA, 95630
(916) 366-3040 Fax (916) 366-3303

JULY 2020

SHEET 1 OF 5 7310.020

SIERRA VISTA - KT PROPERTIES
LARGE LOT SUBDIVISION
EE MAPS 33



LINE TABLE			CURVE TABLE				
#	BEARING	LENGTH	#	RADIUS	DELTA	LENGTH	CHORD BEARING
L1(1)	N89°21'43"E	84.26'	C1(1)	31'	90°00'00"	48.69'	N44°21'43"E
L2A(1)	N80°54'50"E	17.00'	C2(1)	2019'	08°12'56"	289.51'	N85°15'15"E
L2B(1)	N80°35'45"E	21.00'	C3(1)	26'	89°26'58"	40.59'	N54°07'44"W
L3(1)	N89°21'43"E	49.26'	C4(1)	22'	46°39'30"	17.92'	N13°55'30"E
L4(1)	N86°22'28"E	42.00'	C5(1)	1971'	08°45'58"	301.56'	N84°58'44"E
L5(1)	N89°21'43"E	42.00'	C6(1)	22'	44°19'30"	17.02'	N25°08'02"W
L6(1)	N89°21'43"E	103.12'	C7(1)	371'	00°39'15"	4.24'	N03°17'54"W
L7	N09°13'46"E	51.69'	C8(1)	22'	49°38'45"	19.06'	N21°11'50"E
L8	N77°14'01"E	55.00'	C9(1)	22'	46°39'30"	17.92'	N23°58'02"W
L9	N87°44'18"W	146.84'	C10(1)	22'	46°39'30"	17.92'	N22°41'28"E
L10	N00°38'17"W	27.07'	C11	22'	86°47'27"	33.33'	N47°14'33"W
L11	N89°21'43"E	100.00'	C12	371'	08°55'14"	57.76'	N08°18'27"W
L12	N00°38'17"W	6.85'					
L13	N89°21'43"E	142.00'					
L14	N00°38'17"W	100.00'					
L15	N89°21'43"E	142.00'					
L16	N00°38'17"W	5.00'					
L17	N89°21'43"E	130.00'					
L18	N00°38'17"W	110.00'					
L19	N89°21'43"E	12.38'					
L20	N00°38'17"W	42.00'					
L21	N12°46'04"W	22.55'					
L22	N89°21'43"E	229.02'					
L23	N00°38'17"W	100.00'					

KV SIERRA VISTA, LLC
2015-0053533

BASIS OF BEARINGS:

THE BEARING N 00°24'18" W , AS SHOWN BETWEEN FOUND MONUMENTS ALONG THE EAST BOUNDARY AS SHOWN ON THAT CERTAIN FINAL MAP ENTITLED "SIERRA VISTA - KT PROPERTIES LARGE LOT SUBDIVISION SUBDIVISION NUMBER PL 15-0192" FILED FOR RECORD ON NOVEMBER 20, 2019 IN BOOK EE OF MAPS, AT PAGE 33, PLACER COUNTY RECORDS. DISTANCES SHOWN HEREON ARE GROUND DISTANCES.

REFERENCES:

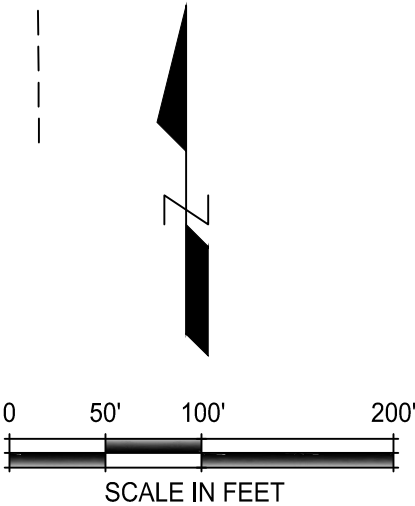
(1) EE MAPS 33

LEGEND

- FOUND COPPERWELD SURVEY MONUMENT WITH CENTER PUNCH IN MONUMENT WELL STAMPED "LS 6600"
- FOUND 5/8" REBAR WITH PLASTIC PLUG STAMPED "LS 6600"
- FOUND COPPERWELD SURVEY MONUMENT WITH CENTER PUNCH IN MONUMENT WELL STAMPED "LS 7944"
- SET COPPERWELD SURVEY MONUMENT WITH CENTER PUNCH IN MONUMENT WELL STAMPED "LS 7944"
- DIMENSION POINT NOTHING FOUND OR SET
- BOUNDARY
- CHORD BEARING
- CHORD DISTANCE
- OVERALL
- P.U.E. PUBLIC UTILITY EASEMENT
- (R) RADIAL
- S.F. SQUARE FEET
- () DENOTES RECORD INFORMATION
- 1 SHEET NUMBER

NOTES:

- THE TOTAL AREA OF THIS SUBDIVISION IS 11.79 ACRES +/-, GROSS, CONSISTING OF 69 RESIDENTIAL LOTS, 1 LANDSCAPE LOT AND 1 (12.15 ACRE) DESIGNATED REMAINDER LOT.
- ALL CURVES ARE DIMENSIONED WITH RADIUS, DELTA, ARC LENGTH, CHORD BEARING AND CHORD LENGTH. CHORD LENGTHS MAY CONTAIN SOME ROUNDING ERROR. DISTANCES SHOWN HEREON ARE IN FEET AND DECIMALS THEREOF AND ARE "GROUND" DISTANCES.
- A PRELIMINARY SOILS REPORT WAS PREPARED BY WALLACE KUHL & ASSOCIATES DATED FEBRUARY 12, 2018; PROJECT NUMBER WKA NO. 11712.02P AND ON FILE WITH THE CITY OF ROSEVILLE DEVELOPMENT - ENGINEERING DEPARTMENT FILE #308-876.
- ALL FRONT CORNERS ARE MARKED BY A 1" BRASS MARKER STAMPED "LS 7944" IN THE SIDEWALK ON THE EXTENSION OF SIDE LOT LINES 1.00' FROM THE PROPERTY LINE UNLESS OTHERWISE NOTED.
- ALL REAR CORNERS AND ANGLE POINTS WILL BE SET WITH A 5/8" REBAR AND PLASTIC CAP STAMPED "LS 7944"
- COVENANTS, CONDITIONS AND RESTRICTIONS AFFECTING THE LOTS SHOWN HEREON ARE RECORDED CONCURRENTLY HERewith AS DOCUMENT NO. 2020-0042952 OFFICIAL RECORDS OF PLACER COUNTY.



FINAL MAP OF
SIERRA VISTA
VILLAGE KT-5A
SUBDIVISION No. PL17-0305

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JULY 2020

SHEET 2 OF 5 7310.020

SIERRA VISTA - KT PROPERTIES
LARGE LOT SUBDIVISION
EE MAPS 33

LOT 2

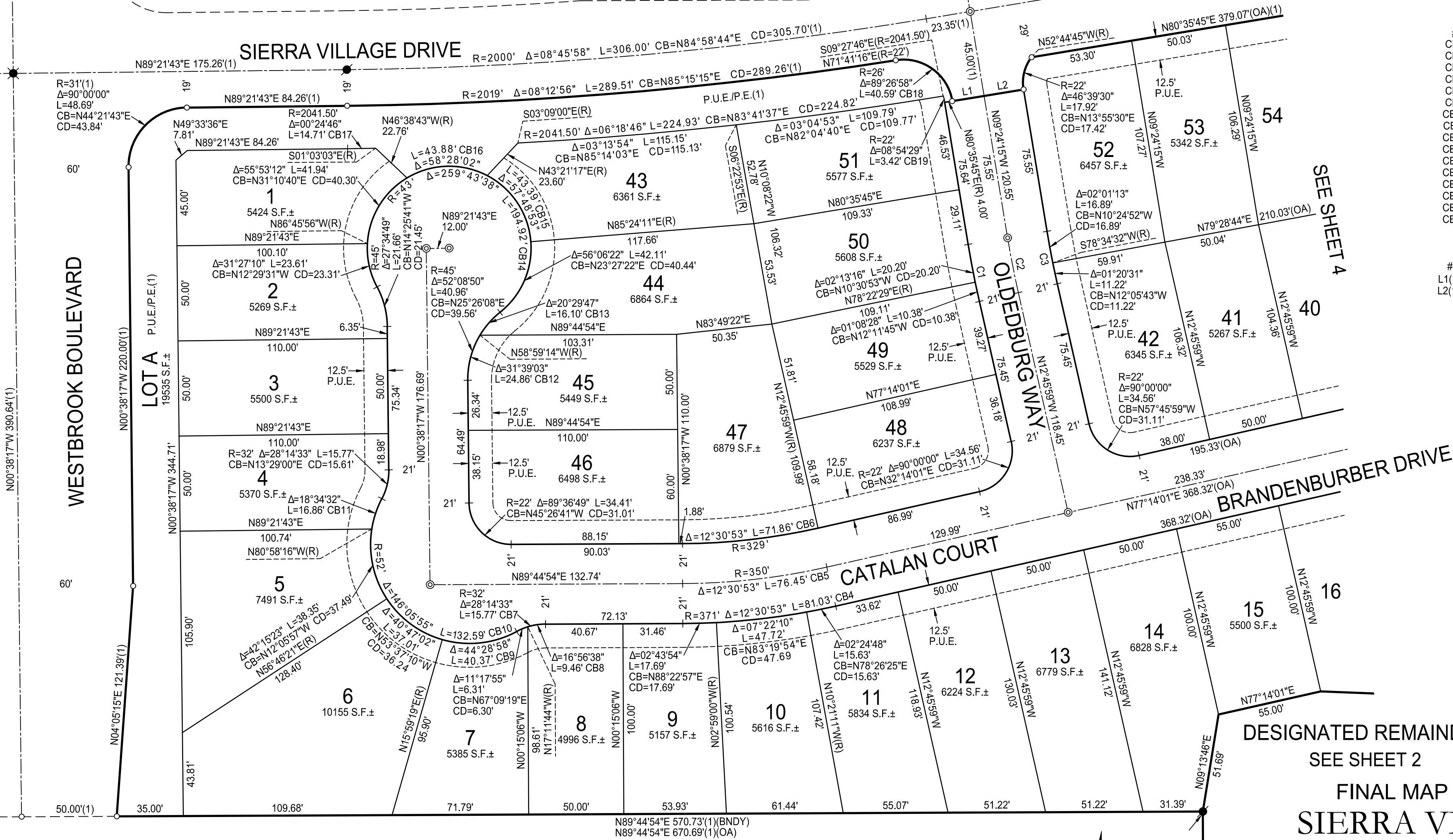
CURVE TABLE						
#	RADIUS	DELTA	LENGTH	CHORD BEARING	CHORD LENGTH	
C1	521'	03°21'44"	30.57'	N11°05'07"W	30.57'	
C2	500'	03°21'44"	29.34'	N11°05'07"W	29.34'	
C3	479'	03°21'44"	28.11'	N11°05'07"W	28.10'	

CHORD TABLE

#	CHORD BEARING	CHORD LENGTH
CB4	N83°29'28"E	80.87'
CB5	N83°29'28"E	76.30'
CB6	N83°29'28"E	71.72'
CB7	N75°37'37"E	15.61'
CB8	N81°16'35"E	9.43'
CB9	N83°44'50"E	39.37'
CB10	N45°26'41"W	99.48'
CB11	N18°19'00"E	16.78'
CB12	N15°11'14"E	24.54'
CB13	N41°15'39"E	16.01'
CB14	N78°21'17"W	66.01'
CB15	N33°30'15"W	41.57'
CB16	N88°21'17"E	42.00'
CB17	N89°09'20"E	14.71'
CB18	N54°07'44"W	36.59'
CB19	N13°51'30"W	3.42'

LINE TABLE

#	BEARING	LENGTH
L1(1)	N80°54'50"E	17.00'
L2(1)	N80°35'45"E	21.00'



KV SIERRA VISTA, LLC
2015-0053568

DESIGNATED REMAINDER
SEE SHEET 2
FINAL MAP OF
SIERRA VISTA
VILLAGE KT-5A
SUBDIVISION No. PL17-0305

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JULY 2020

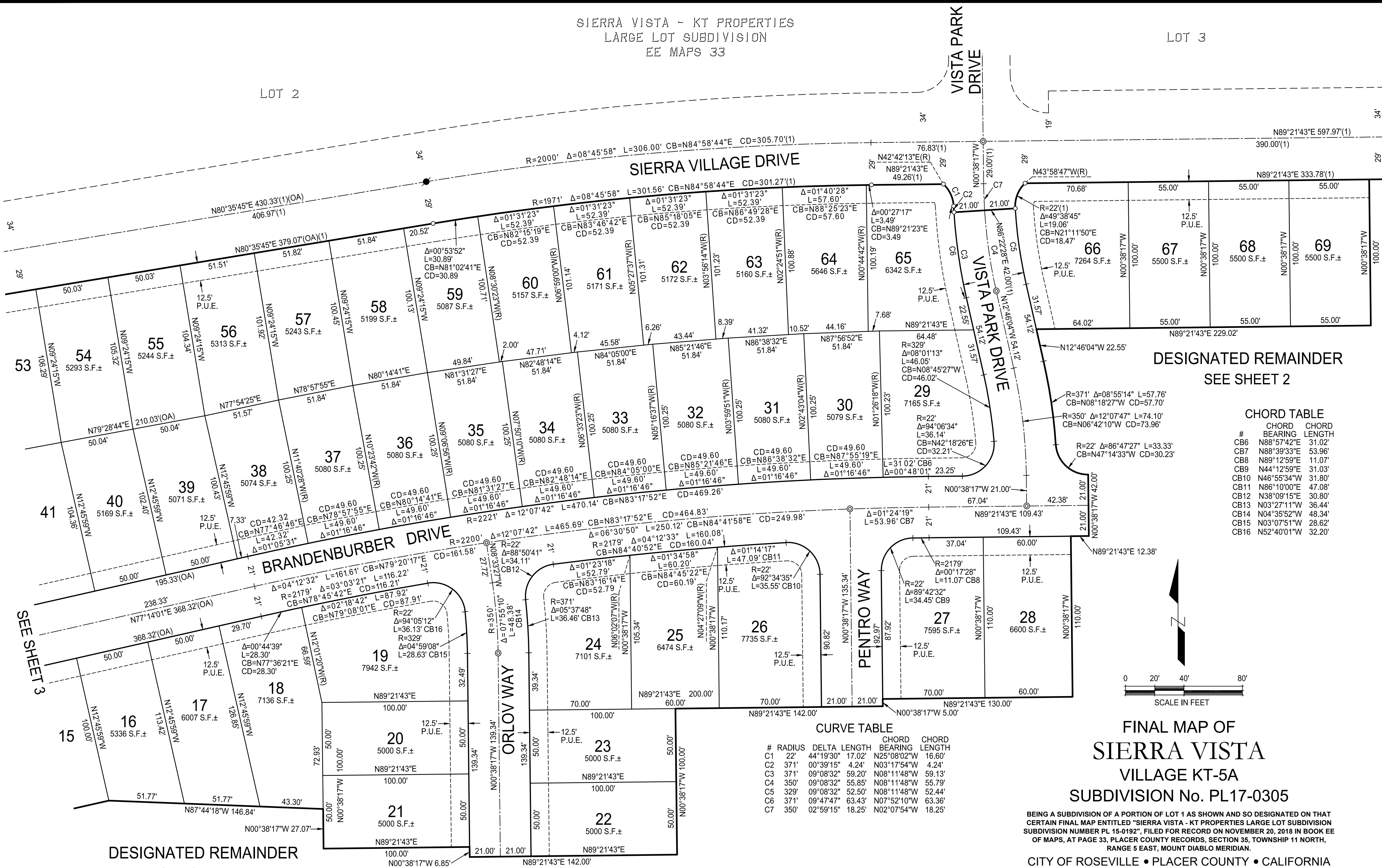
SHEET 3 OF 5 7310.020

SEE SHEET 2 FOR BASIS OF BEARINGS, LEGEND, NOTES & REFERENCES

SIERRA VISTA - KT PROPERTIES
LARGE LOT SUBDIVISION
EE MAPS 33

LOT 3

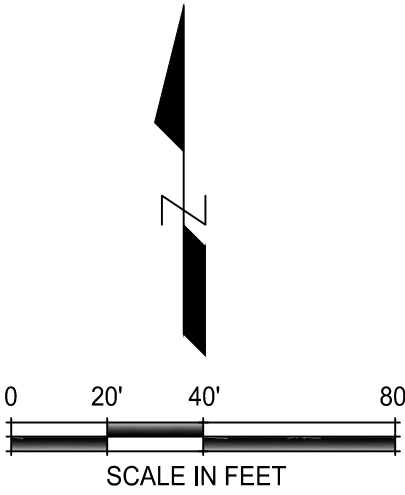
LOT 2



DESIGNATED REMAINDER
SEE SHEET 2

CHORD TABLE

#	CHORD BEARING	CHORD LENGTH
CB6	N88°57'42"E	31.02'
CB7	N88°39'33"E	53.96'
CB8	N89°12'59"E	11.07'
CB9	N44°12'59"E	31.03'
CB10	N46°55'34"W	31.80'
CB11	N86°10'00"E	47.08'
CB12	N38°09'15"E	30.80'
CB13	N03°27'11"W	36.44'
CB14	N04°35'52"W	48.34'
CB15	N03°07'51"W	28.62'
CB16	N52°40'01"W	32.20'



CURVE TABLE

#	RADIUS	DELTA	LENGTH	CHORD BEARING	CHORD LENGTH
C1	22'	44°19'30"	17.02'	N25°08'02"W	16.60'
C2	371'	00°39'15"	4.24'	N03°17'54"W	4.24'
C3	371'	09°08'32"	59.20'	N08°11'48"W	59.13'
C4	350'	09°08'32"	55.85'	N08°11'48"W	55.79'
C5	329'	09°08'32"	52.50'	N08°11'48"W	52.44'
C6	371'	09°47'47"	63.43'	N07°52'10"W	63.36'
C7	350'	02°59'15"	18.25'	N02°07'54"W	18.25'

FINAL MAP OF
SIERRA VISTA
VILLAGE KT-5A
SUBDIVISION No. PL17-0305

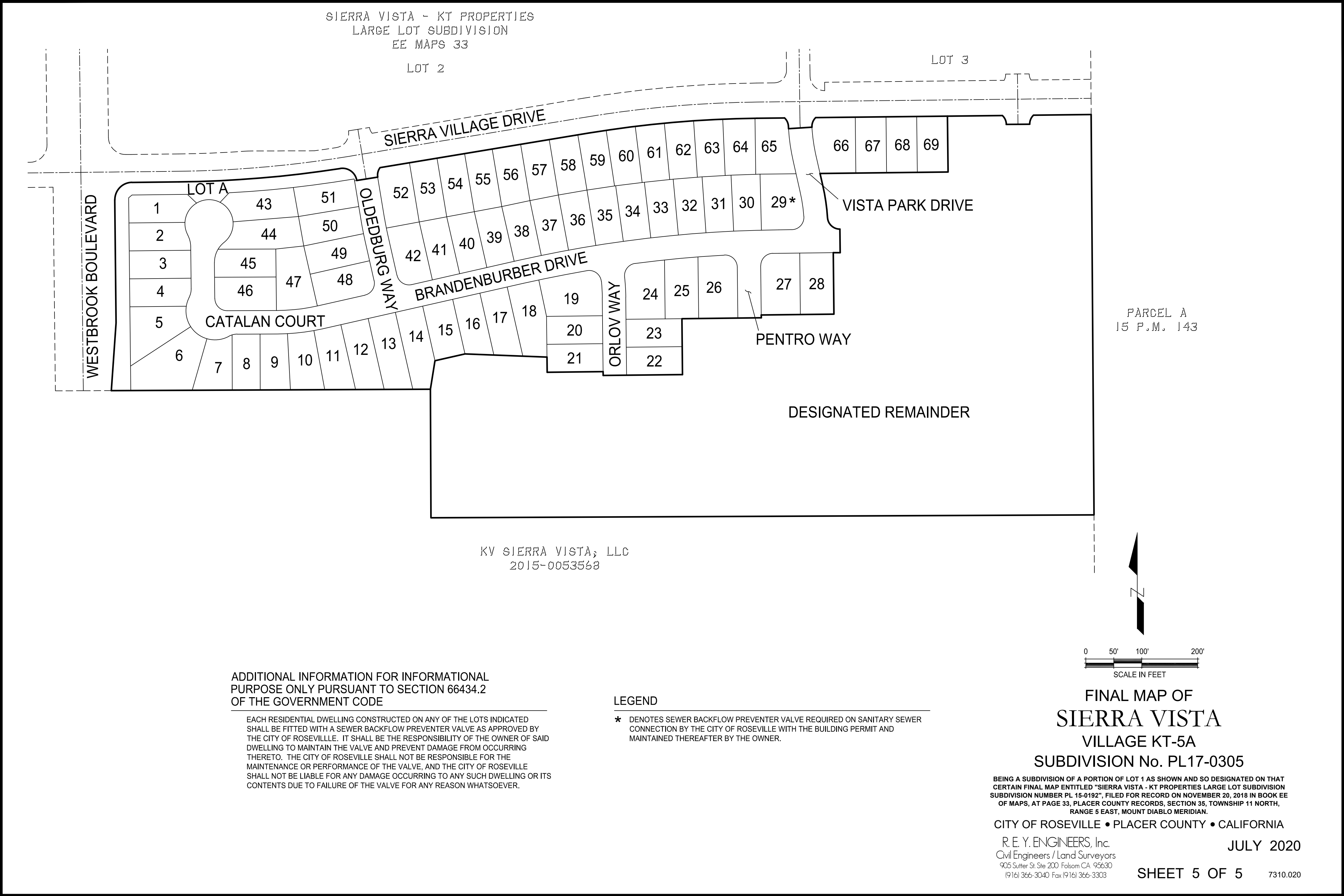
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JULY 2020

SEE SHEET 2 FOR BASIS OF BEARINGS, LEGEND, NOTES & REFERENCES



RESOLUTION NO. 20-270

APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND SIERRA VISTA COMMUNITIES, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a subdivision agreement, by and between the City of Roseville and Sierra Vista Communities, LLC, for the Sierra Vista Village – KT-5A subdivision, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said agreement is approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**RECORDING REQUESTED BY AND WHEN
RECORDED, PLEASE RETURN TO:**

**City Clerk
CITY OF ROSEVILLE
311 Vernon Street
Roseville, CA 95678**

SUBDIVISION AGREEMENT

SIERRA VISTA VILLAGE KT - 5A SUBDIVISION

THIS AGREEMENT, made and entered into this ____ day of _____,
20____, by and between the CITY OF ROSEVILLE, a municipal corporation ("CITY"), and
SIERRA VISTA COMMUNITIES, LLC,
a CALIFORNIA LIMITED LIABILITY COMPANY, ("SUBDIVIDER"),

W I T N E S S E T H:

WHEREAS, SUBDIVIDER is possessed of a tract of land lying in the City of Roseville,
County of Placer, known as "SIERRA VISTA VILLAGE KT-5A Subdivision" (Subdivision
no. PL17-0305 ; "the Subdivision"); and

WHEREAS, a tentative map of the Subdivision was approved by the City Planning
Commission on the 10 day of December, 2015, and the final map of the Subdivision
has been approved subject to the execution of this Agreement; and

WHEREAS, the final map has been filed on the ____ day of _____, 20__ in
Book _____ of Parcel/Subdivision Maps at Page _____ in the Official Records, Placer
County Recorder, file no. _____; and

WHEREAS, Section 18.20.110 of the Roseville Municipal Code, regulating the subdivision of land in the City, requires that SUBDIVIDER shall execute and file an agreement between itself and CITY relating to the improvements to be made in a subdivision, prior to the approval by the City Council of the final map.

NOW, THEREFORE, the parties agree as follows:

1. Rights-of-Way. Except as otherwise provided by this Agreement, CITY rejects all lands, right-of-ways, and easements offered for dedication on the final map of the Subdivision. All such offers shall, however, remain open, and shall constitute irrevocable offers of dedication in accordance with Government Code Section 66477.2. All such offers may be accepted by CITY in its sole discretion at any later date without further notice to SUBDIVIDER as provided by law.

By way of explanation only, it is the current intention of CITY to accept all or part of such irrevocable offers to dedicate upon acceptance of the improvements called for in this Agreement.

2. Improvements - Time Limit. SUBDIVIDER agrees to cause all improvements to be made and constructed in the Subdivision to fully comply with the requirements of the Roseville Municipal Code and the Subdivision Map Act of the State of California according to the improvement plans for the Subdivision prepared by R.E.Y. Engineers, Inc., dated May 24, 2019 and approved by the City Engineer and including any changes or alterations to such improvements required by the City Engineer, and to install, on or before December 31, 2021, such survey monuments as may be required by the City Engineer ("the Work"). SUBDIVIDER agrees to pay for any materials, provisions or other supplies used in, upon, for or about the performance of the Work, or for any work or labor of any kind done in

connection with the Work, or for any amounts due under the Unemployment Insurance Act with respect to such work or labor.

SUBDIVIDER agrees to complete all of the Work on or before twenty-four (24) months from the date of this Agreement. If in the opinion of the City Engineer of CITY, an extension of this Agreement is not detrimental to the public welfare, he or she is, in his or her sole discretion, hereby authorized to extend the time within which the Work shall be completed for a period not to exceed twelve (12) months. Upon a written application made by SUBDIVIDER, further extensions, not to exceed an additional six (6) months, shall be reviewed and approved at the discretion of the City Engineer of CITY. Any such application extension request by SUBDIVIDER shall fully state the grounds and facts relied upon for the granting of additional extensions.

In the event that SUBDIVIDER shall fail to complete the Work within the time provided by this Agreement, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, enter upon the Subdivision and complete the Work and recover the full cost and expense of such construction from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

If at anytime prior to the expiration of the time provided by this Agreement the City Engineer of CITY determines that a safety hazard exists within an existing public right-of-way, the City Engineer shall give written notice to SUBDIVIDER to eliminate the safety hazard. If SUBDIVIDER fails to eliminate the safety hazard within five (5) calendar days of the written notice, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, eliminate the safety hazard and recover the full cost and expense of such work from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

3. Acquisition and Dedication of Easements or Rights-of-Ways. If any of the Work is to be constructed or installed on land not within the Subdivision or already existing public right-of-way, no construction or installation shall be commenced before:

a. The irrevocable offer of dedication or conveyance to CITY of appropriate right-of-ways, easements or other interest in real property, and appropriate authorization from the property owner to allow construction or installation of the improvements or work; or

b. The issuance of an order of possession by a court of competent jurisdiction pursuant to the State Eminent Domain Law. SUBDIVIDER shall comply in all respects with any such order of possession.

Nothing in this Section 3 shall be construed as authorizing or granting an extension of time to SUBDIVIDER for completion of the Work.

4. Inspection Fees and Costs. The City Engineer shall inspect all of the Work improvements made in the Subdivision to see that they comply with CITY's subdivision regulations and specifications. SUBDIVIDER shall deposit the estimated inspection fee and reimburse CITY for the cost of such inspections in accordance with Roseville Municipal Code section 18.20.070.

5. Securities.

a. SUBDIVIDER shall file with this Agreement two (2) improvement securities as set forth in Roseville Municipal Code Sections 18.20.150 and 18.20.160. Each security shall be in the amount of one hundred percent (100%) of the total estimated cost of the Work as determined by the City Engineer which amount is the sum of \$ 1,266,885.38. One improvement security shall secure faithful performance of this Agreement as required by Section 66499.3(a) of the Government Code of the State of California (the "faithful performance" security). The second improvement security shall, as required by Section 66499.3(b) of the Government Code of the State of California, secure the obligations set forth in Title 15

(commencing with Section 3082) of Part 4 of Division 3 of the Civil Code of the State of California for payment to the contractor, his subcontractors and to persons renting equipment or furnishing labor or materials to them for the Work (the "payment security"). The improvement securities required under this paragraph shall also secure placement of monumentation and guarantee payment therefor as provided by California Government Code section 66496.

b. SUBDIVIDER shall also file with this Agreement a "guarantee and warranty security" in the amount of ten percent (10%) of the City Engineer's estimated cost of the Work as set forth in Section 18.20.170 of the Roseville Municipal Code to guarantee and warrant the Work for a period of one year following its completion and acceptance against any defective work or labor done, or defective materials furnished, as required by Section 66499(a)(5) of the Government Code of the State of California. The guarantee and warranty security shall be released upon SUBDIVIDER's request following expiration of the warranty period and subject to the reasonable determination of the City Engineer that SUBDIVIDER's warranty obligations have been satisfied.

c. Any bonds submitted as security pursuant to this section shall be executed by a surety company authorized to transact a surety business in the State of California. All required securities shall be in a form approved by the City Attorney of CITY.

6. Successors and Assigns – Covenant Running with the Land. This Agreement shall inure to the benefit of, and be binding upon, the successors and assigns of the respective parties. It shall be recorded in the Office of the Recorder of Placer County concurrently with the final map of the Subdivision, and shall constitute a covenant running with the land and an equitable servitude upon the real property within the Subdivision.

7. Acceptance of Improvements Upon Completion. Upon satisfactory completion of the Work, in accordance with this Agreement, CITY agrees to accept the Work and its

improvements and the offers of dedication described in paragraph 1, subject to the provisions of paragraphs 1 and 10 of this Agreement.

8. Notice Regarding Construction. SUBDIVIDER shall notify the City Engineer of CITY in writing three (3) days prior to the commencement of construction of the Work.

9. Subdivider's Obligation to Warn Public During Construction. Until final acceptance of the Work, SUBDIVIDER shall give good and adequate warning to the public of each and every dangerous condition which may exist in the Work, and will take all reasonable actions to protect the public from any such dangerous condition.

10. Warranty.

a. SUBDIVIDER guarantees and warrants the public improvements which constitute the Work required by this Agreement, and agrees to remedy any defects in the improvements or the Work arising from faulty or defective materials or construction of said improvements or the Work occurring within twelve (12) months after their acceptance by CITY. SUBDIVIDER agrees to permit inspection of all improvements in the Subdivision by the City Engineer of CITY for such period, and to reimburse CITY for the cost of such inspections.

b. If, within the warranty period, the Work or improvement or any part of the Work done, furnished, installed, or constructed fails to fulfill any of the requirements of this Agreement or the improvement plans and specifications, SUBDIVIDER shall, without delay or cost to CITY, repair, replace or reconstruct any defective or otherwise unsatisfactory part or parts of the Work. CITY may, at its sole option, perform such repair or replacement itself if SUBDIVIDER has failed to commence such repair within twenty (20) days after CITY has mailed written notice of default to SUBDIVIDER and to SUBDIVIDER'S Surety. In such event, SUBDIVIDER agrees to pay the cost of such repair and replacement by CITY and CITY may, at its option, recover such cost as a lien against the Subdivision should the cost exceed the inspection fee deposited pursuant to paragraph 4 of this Agreement.

Should CITY determine that the public safety requires repairs or replacements to be made before SUBDIVIDER can be notified, CITY may, in its sole discretion, make the necessary repairs or replacement or perform the necessary work. SUBDIVIDER shall pay to CITY the cost of such repairs and CITY may at its option recover such cost as a lien against the Subdivision.

11. Indemnification. To the fullest extent allowed by law, SUBDIVIDER shall defend, indemnify, and save and hold harmless CITY, its officers, agents, employees and volunteers from any claims, suits or actions of every name, kind and description brought forth, or on account of, injuries to or death of any person (including but not limited to workers and the public), or damage to property, resulting from or arising out of SUBDIVIDER 's willful misconduct or negligent act or omission while engaged in the performance of obligations or exercise of rights created by this Agreement, except those matters arising from CITY's sole or active negligence or willful misconduct. The parties intend that this provision shall be broadly construed.

SUBDIVIDER's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law. The defense and indemnity obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.

12. Insurance. SUBDIVIDER agrees to continuously maintain, in full force and effect, at a minimum the following policies of insurance during the term of this Agreement.

COVERAGE

General Liability

Automobile Liability

LIMITS OF LIABILITY

\$2,000,000 per occurrence

\$4,000,000 aggregate

Personal Injury:

\$2,000,000 per occurrence

\$4,000,000 aggregate

\$1,000,000 combined single limit

a. Form. SUBDIVIDER shall submit a certificate evidencing such coverage for the period covered by this Agreement in a form satisfactory to Risk Management and the City Attorney, prior to undertaking any work hereunder. Any insurance written on a claims made basis is subject to the approval of Risk Management and the City Attorney.

b. Additional Insureds. SUBDIVIDER shall also provide a separate endorsement form or section of the policy showing CITY, its officers, agents, employees and volunteers as additional insureds for each type of coverage, except for Workers' Compensation, for ongoing and completed operations. Such insurance shall specifically cover the contractual liability of SUBDIVIDER. The additional insured coverage under the SUBDIVIDER's policy shall be primary and noncontributory, as evidenced by a separate endorsement or section of the policy, and shall not seek contribution from CITY's insurance or self-insurance. In addition, the additional insured coverage shall be at least as broad as the Insurance Services Office ("ISO") CG 20 01 Endorsement. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

c. Cancellation/Modification. SUBDIVIDER shall provide ten (10) days written notice to CITY prior to cancellation or modification of any insurance required by this Agreement.

d. Umbrella/Excess Insurance. The limits of insurance required in this Agreement may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply

on a primary and noncontributory basis for the benefit of CITY (if agreed to in a written contract) before CITY's own insurance shall be called upon to protect it as a named insured.

e. Self-Insured Retentions. All self-insured retentions ("SIR") must be disclosed to Risk Management for approval and shall not reduce the limits of liability. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or CITY. CITY reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

f. Waiver of Subrogation. SUBDIVIDER hereby agrees to waive subrogation which any insurer of SUBDIVIDER may acquire from SUBDIVIDER by virtue of the payment of any loss under a Workers Compensation, Commercial General Liability or Automobile Liability policy. All Workers Compensation, Commercial General Liability and Automobile Liability policies shall be endorsed with a waiver of subrogation in favor of CITY, its officers, agents, employees and volunteers for all work performed by SUBDIVIDER, its employees, agents and subcontractors.

g. Liability/Remedies. Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve SUBDIVIDER of liability in excess of such coverage, nor shall it preclude CITY from taking such other actions as are available to it under any other provisions of this Agreement or law.

13. Irrevocability of Security. The improvement securities furnished pursuant to paragraph 5 shall be irrevocable, shall not be limited as to time (except as to the one-year guarantee and warranty period specified in paragraph 10) and shall provide that they may be released, in whole or part, only upon the written approval of the City Engineer of CITY.

14. Attorney's Fees; Venue; Governing Law. Any action by any party to this Agreement, or any action concerning a security furnished pursuant to paragraph 5, shall be

brought in the appropriate court of competent jurisdiction within the County of Placer, State of California, notwithstanding any other provision of law which may provide that such action may be brought in some other location. In the event it becomes necessary for either party to bring an action with respect to enforcement of the provisions of this Agreement, or the security therefor, the prevailing party in such action shall be awarded a reasonable attorney's fee, as may be determined by the Court. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

15. Release of Faithful Performance Security. Release of faithful performance security shall be in compliance with and pursuant to the procedures set forth in Government Code Section 66499.7. Upon the completion of all secured Work by SUBDIVIDER and written acceptance of that completed Work by CITY, and the furnishing of the warranty security as required by paragraph 5(b), the City Engineer shall authorize the release of the remaining faithful performance security.

16. Release of Payment Security. Thirty-five (35) days after a notice of completion is recorded with respect to the Work, the City Engineer of CITY may authorize the release of the payment security, in the event that no claims have been filed against said security. In the event that claims or actions are filed against the security, the City Engineer may release so much of such security as is in excess of the total of the claims made against it, plus a reasonable amount of costs and attorney's fees.

17. Automatic Termination Upon Completion and Sale of Residential Unit. This Agreement and any lien pursuant hereto shall automatically be terminated, without any further action by either party or need to record any additional document, with respect to any single-family residential lot within a parcel designated by the Specific Plan for residential use, upon completion of construction and issuance by the City of a final inspection for a dwelling unit upon such residential lot and conveyance of such improved residential lot to a bona-fide good faith

purchaser thereof. In connection with its issuance of a final inspection for such improved lot, City shall confirm that: (i) all improvements which are required to serve the lot, as determined by City, have been accepted by City; (ii) the lot is included within the Maintenance CFD required by Section 3.20 or other financing mechanism acceptable to the City, to the extent required hereby; and (iii) if and to the extent applicable to such lot, an affordable purchase or rental housing agreement has been recorded on the lot. Termination of this Agreement for any such residential lot as provided for in this section shall not in any way be construed to terminate or modify any assessment district or Mello-Roos Community Facilities District lien affecting such lot at the time of termination.

18. Failure of Performance. In addition to any other remedies provided in this Agreement or by law, in the event SUBDIVIDER fails to perform one or more of the covenants or conditions of this Agreement, CITY shall have recourse to the security given to guarantee the performance of such acts. CITY may do, or cause to be done, those acts required of SUBDIVIDER, and shall have recourse against so much of the security as is necessary to discharge the responsibility of SUBDIVIDER. In the event CITY seeks recourse against a security, CITY shall also have recourse against SUBDIVIDER for any and all amounts necessary to complete the obligations of SUBDIVIDER in the event the security is insufficient to pay such amounts. All administrative costs, including reasonable attorney's fees pursuant to Section 66499.4 of the Government Code, incurred by CITY, in addition to the costs of the improvements, shall be a proper charge against the security and SUBDIVIDER.

19. Integration. This Agreement is an integrated agreement. It supersedes all prior negotiations, representations, or agreements, either written or oral.

20. Modification. This Agreement and each provision contained herein may be waived, amended, supplemented or eliminated only by mutual written agreement of the parties.

21. Notices. Any notices sent to the parties relating to this Agreement shall be sent by first class mail, postage prepaid or delivered to the following addresses:

Marc Stout, City Engineer
City of Roseville
311 Vernon Street
Roseville, CA 95678

Sierra Vista Communities LLC
1025 Creekside Ridge Dr., #240
Roseville, CA 95661
Attn: Larry Gualco

Either party may amend its address by giving written notice to the other.

22. Severability. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attestation by its City Clerk under authority of Resolution No. ____, adopted by the Council of the City of Roseville on the ____ day of ____, 20__, and SUBDIVIDER has caused this Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation,

BY: _____
DOMINICK CASEY
City Manager

Sierra Vista Communities LLC _____,
a California limited liability company
By Lennar Homes of California, Inc.
a California Corporation,
BY:  _____
its: Managing Member

ATTEST:

and

BY: _____
SONIA OROZCO
City Clerk

BY: _____

its: _____

APPROVED AS TO FORM:

(NOTARIZATION REQUIRED)

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUFFICIENCY:

BY: 
MARC STOUT
City Engineer

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer } ss.

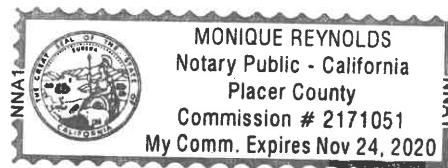
On June 1, 2020 before me, Monique Reynolds,

Notary Public, personally appeared Larry Gualco

who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signatures~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Monique Reynolds
Signature

(seal)

OPTIONAL INFORMATION

Date of Document

Sierra Vista KT-5A

Type or Title of Document

Number of Pages in Document

Document in a Foreign Language

Type of Satisfactory Evidence:

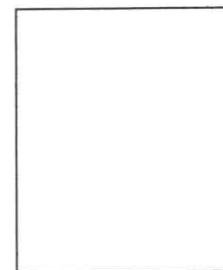
- ☐ Personally Known with Paper Identification
☐ Paper Identification
☐ Credible Witness(es)

Capacity of Signer:

- ☐ Trustee
☐ Power of Attorney
☐ CEO / CFO / COO
☐ President / Vice-President / Secretary / Treasurer
☐ Other: _____

Other Information: _____

Thumbprint of Signer



☐ Check here if no thumbprint or fingerprint is available.



COUNCIL COMMUNICATION

CC #: 0858

File #: 0400-04-12-1 & 0400-07

Title: Sierra Vista Village JM-20 - Phase 3.1A Final Map and Subdivision Agreement

Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 7.12.

RECOMMENDATION TO COUNCIL

It is recommended that the City Council take the following actions:

1. Approve the final map on file with the City Clerk and accept on behalf of the public, subject to improvement, the rights of way and easements offered thereon; and,
2. Adopt the attached resolution approving the Subdivision Agreement and authorize the City Manager to execute the agreement on behalf of the City.

BACKGROUND

The Development Services, Engineering section, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 69 residential lots.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

Approval of the Sierra Vista Village JM-20 - Phase 3.1A final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Sierra Vista Village JM-20 - Phase 3.1A final map was accomplished with preparation of the Sierra Vista Specific Plan EIR (Adopted: May 5, 2010) (SCH#2008032017) and the Mitigated Negative Declaration (MND) and associated Mitigation Monitoring Program approved by the City of Roseville on June 6, 2012. Because the Sierra Vista Village JM-20 - Phase 3.1A final map is consistent with project evaluated in the Sierra Vista Specific Plan Environmental Impact Report (EIR), no new effects would be expected to occur and all applicable mitigation measures from the Sierra Vista Specific Plan EIR will be implemented. As such, no additional CEQA action

is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director

A handwritten signature in blue ink, consisting of several overlapping loops and a horizontal line, positioned above a horizontal line.

Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

Resolution No. 20-269

Subdivision Agreement

OWNER'S STATEMENT:

THE UNDERSIGNED HEREBY STATE THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTERESTS IN THE REAL PROPERTY INCLUDED WITHIN THIS PLAT OF "SIERRA VISTA VILLAGE JM-20 - PHASE 3.1A" SHOWN UPON THIS MAP AND THEY HEREBY CONSENT TO THE PREPARATION AND RECORDING OF THIS MAP AND OFFER FOR DEDICATION AND DO HEREBY DEDICATE FOR SPECIFIC PURPOSES THE FOLLOWING:

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS AN EASEMENT FOR PUBLIC PURPOSES:

- (A) PUBLIC EASEMENTS FOR INSTALLATION AND MAINTENANCE OF BUT NOT LIMITED TO WATER, GAS AND SEWER PIPES, AND FOR POLES AND OVERHEAD AND UNDERGROUND WIRES AND CONDUITS FOR ELECTRIC, TELEVISION AND TELEPHONE SERVICES AND TRAFFIC CONTROL APPURTENANCES TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER AND ACROSS THOSE STRIPS OF LAND LYING CONTIGUOUS TO THE DRIVE AND STREETS SHOWN HEREON AND DESIGNATED "P.U.E." (PUBLIC UTILITY EASEMENT).

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED IN FEE FOR PUBLIC PURPOSES:

- (A) AS PUBLIC RIGHT-OF-WAY (INCLUDING ALL IMPROVEMENTS THEREON) THE STREETS SHOWN HEREON AS WHIRLABOUT STREET, APPLEBLOSSOM STREET, CHELSEA CREEK ROAD AND SEA CLIFF ROAD.

JOHN MOURIER CONSTRUCTION, INC., A CALIFORNIA CORPORATION

BY: _____
PRINT NAME:
TITLE:

BY: _____
PRINT NAME:
TITLE:

NOTARY ACKNOWLEDGEMENT:

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF CALIFORNIA

COUNTY OF PLACER

ON _____, 2020, BEFORE ME, _____ A NOTARY PUBLIC
(PRINT NAME AND TITLE OF OFFICER)

PERSONALLY APPEARED _____
WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S)
WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES _____
MY PRINCIPAL PLACE OF BUSINESS IS IN _____ COUNTY.

NOTARY PUBLIC

PRINT NAME

PLAT OF
SIERRA VISTA VILLAGE JM-20 - PHASE 3.1A

SUBDIVISION NO.: 2012PL-038

ALL OF 'RESULTANT PARCEL 12A' AS SHOWN AND DESCRIBED IN THAT "LOT
LINE ADJUSTMENT CERTIFICATE OF COMPLIANCE" RECORDED AS DOC. #
2020-0020085 AND LOCATED IN SECTION 36, T. 11 N., R. 5 E., M.D.M.
CITY OF ROSEVILLE, COUNTY OF PLACER, STATE OF CALIFORNIA

JUNE 2020

BAKER WILLIAMS ENGINEERING GROUP

SHEET 1 OF 4

CITY ENGINEER'S STATEMENT:

I HEREBY STATE THAT I HAVE EXAMINED THIS PLAT OF "SIERRA VISTA VILLAGE JM-20 - PHASE 3.1A" AND FIND IT TO BE SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS THEREOF, THAT ALL PROVISIONS OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES HAVE BEEN COMPLIED WITH.

DATED _____

MARC STOUT R.C.E. 69879
CITY ENGINEER, CITY OF ROSEVILLE
EXPIRATION DATE 09/30/2020

I HEREBY STATE THAT I AM SATISFIED THAT THIS PLAT OF "SIERRA VISTA VILLAGE JM-20 - PHASE 3.1A" IS TECHNICALLY CORRECT.

For Marc Stout, City Engineer, City of Roseville

DATED _____

TIMOTHY G. BLAIR
P.L.S. 8278 EXPIRATION DATE 12/31/2021



CITY CLERK'S STATEMENT:

I HEREBY STATE THAT THE CITY COUNCIL OF THE CITY OF ROSEVILLE HAS APPROVED THIS PLAT OF "SIERRA VISTA VILLAGE JM-20 - PHASE 3.1A" AND HAS ACCEPTED ON BEHALF OF THE PUBLIC, SUBJECT TO IMPROVEMENT, THE RIGHTS OF WAY AND EASEMENTS HEREON OFFERED FOR DEDICATION.

DATED _____

CITY CLERK, CITY OF ROSEVILLE

BY: _____
ASSISTANT CITY CLERK

SURVEYOR'S STATEMENT:

THIS MAP OF "SIERRA VISTA VILLAGE JM-20 - PHASE 3.1A" WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF JOHN MOURIER CONSTRUCTION, INC. IN FEBRUARY, 2020. I HEREBY STATE THAT ALL THE MONUMENTS ARE OF THE CHARACTER AND OCCUPY THE POSITIONS INDICATED OR THAT THEY WILL BE SET IN THOSE POSITIONS ON OR BEFORE DECEMBER 31, 2021, THAT THE MONUMENTS WILL BE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED AND THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE CONDITIONALLY APPROVED TENTATIVE MAP.

DATE _____

JOHN KARL JEFFRIES L.S. 7820
EXPIRES 12/31/2021



RECORDER'S STATEMENT:

ACCEPTED FOR RECORD AND FILED IN THE OFFICE OF THE RECORDER OF PLACER COUNTY, STATE OF CALIFORNIA, AT THE REQUEST OF OLD REPUBLIC TITLE COMPANY, AT _____ MINUTES AFTER _____ O'CLOCK __M. ON THE ____ DAY OF _____, 2020 AND RECORDED IN BOOK ____ OF MAPS, AT PAGE ____.

DOCUMENT NO. _____

COUNTY RECORDER OF PLACER COUNTY

FEE _____

BY: _____
DEPUTY

PLAT OF
SIERRA VISTA VILLAGE JM-20 - PHASE 3.1A

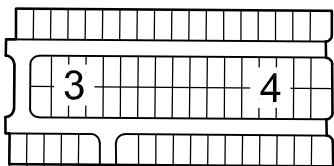
SUBDIVISION NO.: 2012PL-038

ALL OF 'RESULTANT PARCEL 12A' AS SHOWN AND DESCRIBED IN THAT "LOT
LINE ADJUSTMENT CERTIFICATE OF COMPLIANCE" RECORDED AS DOC. #
2020-0020085 AND LOCATED IN SECTION 36, T. 11 N., R. 5 E., M.D.M.
CITY OF ROSEVILLE, COUNTY OF PLACER, STATE OF CALIFORNIA
JUNE 2020

SCALE: 1" = 100'

BAKER WILLIAMS ENGINEERING GROUP

SHEET 2 OF 4



SHEET INDEX

NOTES:

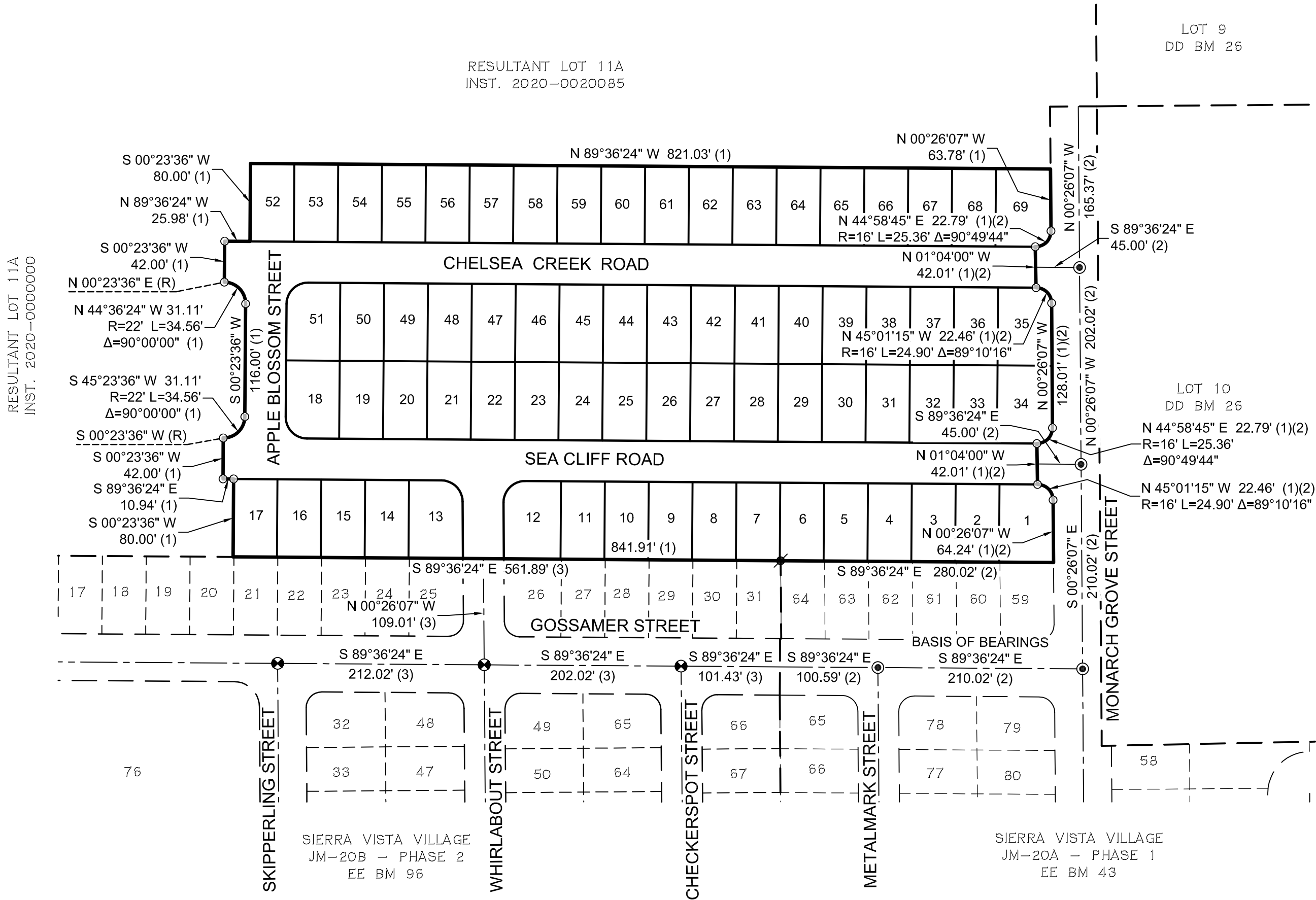
- ALL BEARINGS ALONG CURVED LINES ARE CHORD MEASUREMENTS.
- THIS SUBDIVISION CONTAINS 7.703 ACRES MORE OR LESS, CONTAINING 69 RESIDENTIAL LOTS NUMBERED 1-69.
- ALL DISTANCES SHOWN HEREON ARE EXPRESSED IN FEET AND DECIMALS THEREOF.
- A PRELIMINARY SOILS REPORT WAS PREPARED BY YOUNGDAHL CONSULTING GROUP, PROJECT NO. E133171.000 DATED SEPTEMBER 10, 2013. A COPY OF THIS REPORT IS AVAILABLE FOR PUBLIC INSPECTION AT THE CITY OF ROSEVILLE ENGINEERING DEPARTMENT (FILE NUMBER 308-810).
- ALL REAR PROPERTY CORNERS AND ANGLE POINTS SHALL BE MONUMENTED WITH A 5/8" REBAR WITH METAL CAP STAMPED "LS7820". IN THE EVENT OF A CONFLICT WITH A RETAINING WALL OR FENCE, A 3.0' WITNESS CORNER SHALL BE SET ONLINE.
- ALL FRONT PROPERTY CORNERS SHALL BE MONUMENTED WITH A 1" BRASS DISK STAMPED "LS7820", 1.0' FROM PROPERTY CORNER INTO THE SIDEWALK ON A PROJECTION OF PROPERTY LINE AT FRONT AND/OR SIDE LOT LINES PRODUCED.

LEGEND:

- P.U.E. PUBLIC UTILITY EASEMENT
(R) RADIAL LINE
○ DIMENSION POINT, NOTHING FOUND OR SET
⊙ SET BRASS MONUMENT IN STANDARD CITY OF ROSEVILLE MONUMENT WELL STAMPED L.S. 7820
⦿ FND 3/4" IRON PIPE TAGGED "L.S. 7820" PER DD BM 26
⊙ FND BRASS MONUMENT IN STANDARD CITY OF ROSEVILLE MONUMENT WELL STAMPED "L.S. 7820" PER EE BM 43
⦿ FND BRASS MONUMENT IN STANDARD CITY OF ROSEVILLE MONUMENT WELL STAMPED "L.S. 7820" PER ____ BM ____
(1) RECORD PER 2020-0000000
(2) RECORD PER EE BM 43
(3) RECORD PER EE BM 96

BASIS OF BEARINGS:

THE BASIS OF BEARINGS FOR THIS SURVEY IS IDENTICAL TO THE CENTERLINE OF GOSSAMER STREET, BEING S 89°36'24" E AND ESTABLISHED BY MONUMENTS FOUND AS SHOWN HEREON PER EE BM 43.



PLAT OF
SIERRA VISTA VILLAGE JM-20 - PHASE 3.1A

SUBDIVISION NO.: 2012PL-038

ALL OF 'RESULTANT PARCEL 12A' AS SHOWN AND DESCRIBED IN THAT "LOT
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CITY OF ROSEVILLE, COUNTY OF PLACER, STATE OF CALIFORNIA
JUNE 2020

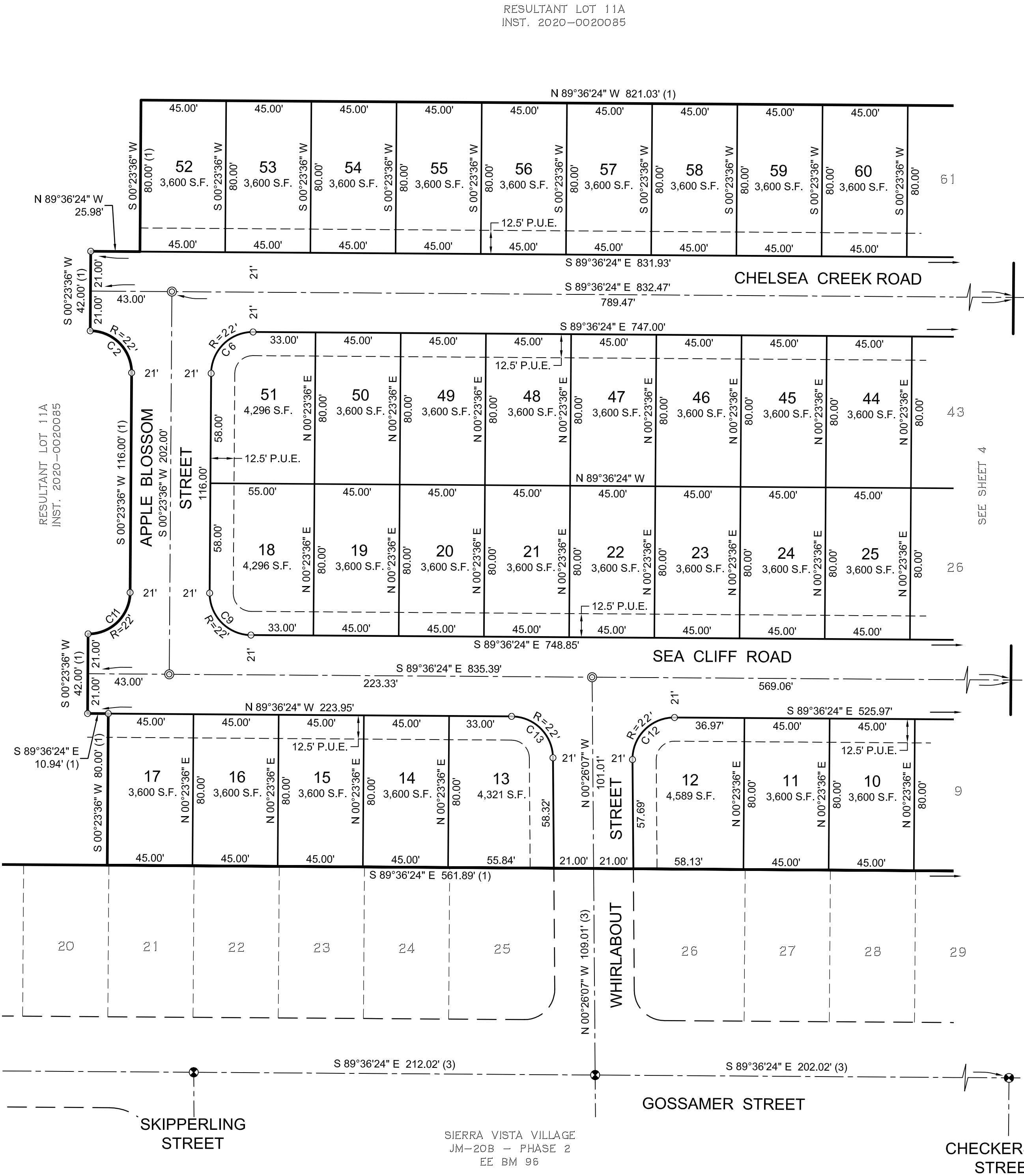
SCALE: 1" = 40'

BAKER WILLIAMS ENGINEERING GROUP

SHEET 3 OF 4



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C2	34.56'	22.00'	90°00'00"	S 44°36'24" E	31.11'
C6	34.56'	22.00'	90°00'00"	S 45°23'36" W	31.11'
C9	34.56'	22.00'	90°00'00"	S 44°36'24" E	31.11'
C11	34.56'	22.00'	90°00'00"	S 45°23'36" W	31.11'
C12	34.88'	22.00'	90°49'44"	S 44°58'45" W	31.34'
C13	34.24'	22.00'	89°10'16"	N 45°01'15" W	30.89'



SEE SHEET 2 FOR NOTES, LEGEND AND BASIS-OF-BEARINGS.

SHEET 3 OF 4

JOB NO. 19-08-043

PLAT OF
SIERRA VISTA VILLAGE JM-20 - PHASE 3.1A

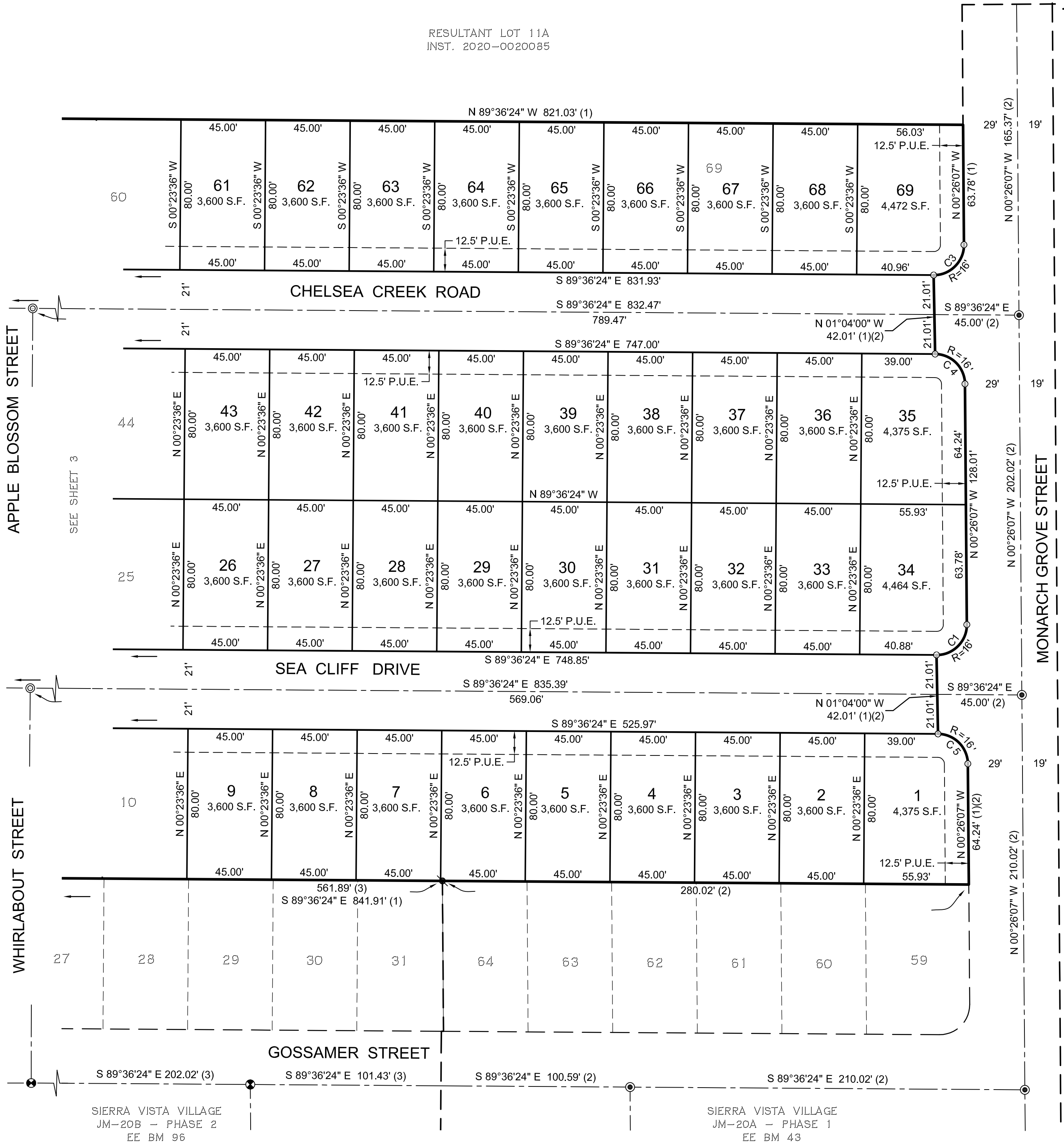
SUBDIVISION NO.: 2012PL-038

ALL OF 'RESULTANT PARCEL 12A' AS SHOWN AND DESCRIBED IN THAT "LOT
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2020-0020085 AND LOCATED IN SECTION 36, T. 11 N., R. 5 E., M.D.M.
CITY OF ROSEVILLE, COUNTY OF PLACER, STATE OF CALIFORNIA
JUNE 2020

SCALE: 1" = 40'

BAKER WILLIAMS ENGINEERING GROUP

SHEET 4 OF 4



CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	25.36'	16.00'	90°49'44"	N 44°58'45" E	22.79'
C3	25.36'	16.00'	90°49'44"	N 44°58'45" E	22.79'
C4	24.90'	16.00'	89°10'16"	N 45°01'15" W	22.46'
C5	24.90'	16.00'	89°10'16"	N 45°01'15" W	22.46'

SEE SHEET 2 FOR NOTES, LEGEND AND BASIS-OF-BEARINGS.

JOB NO. 19-08-043

RESOLUTION NO. 20-269

APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND JOHN MOURIER CONSTRUCTION, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a subdivision agreement, by and between the City of Roseville and John Mourier Construction, Inc., for the Sierra Vista Village JM-20 – Phase 3.1A subdivision, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said agreement is approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**RECORDING REQUESTED BY AND WHEN
RECORDED, PLEASE RETURN TO:**

**City Clerk
CITY OF ROSEVILLE
311 Vernon Street
Roseville, CA 95678**

SUBDIVISION AGREEMENT

Sierra Vista Village JM-20 - Phase 3.1A SUBDIVISION

THIS AGREEMENT, made and entered into this ____ day of _____,
20____, by and between the CITY OF ROSEVILLE, a municipal corporation ("CITY"), and

John Mourier Construction, Inc. _____,
a _____ California corporation _____, ("SUBDIVIDER"),

W I T N E S S E T H:

WHEREAS, SUBDIVIDER is possessed of a tract of land lying in the City of Roseville,
County of Placer, known as "Sierra Vista Village JM-20 - Phase 3.1A Subdivision" (Subdivision
no. 2012PL-038; "the Subdivision"); and

WHEREAS, a tentative map of the Subdivision was approved by the City Planning
Commission on the 9th day of January, 2020, and the final map of the Subdivision
has been approved subject to the execution of this Agreement; and

WHEREAS, the final map has been filed on the ____ day of _____, 20__ in
Book _____ of Parcel/Subdivision Maps at Page _____ in the Official Records, Placer
County Recorder, file no. _____; and

WHEREAS, Section 18.20.110 of the Roseville Municipal Code, regulating the subdivision of land in the City, requires that SUBDIVIDER shall execute and file an agreement between itself and CITY relating to the improvements to be made in a subdivision, prior to the approval by the City Council of the final map.

NOW, THEREFORE, the parties agree as follows:

1. Rights-of-Way. Except as otherwise provided by this Agreement, CITY rejects all lands, right-of-ways, and easements offered for dedication on the final map of the Subdivision. All such offers shall, however, remain open, and shall constitute irrevocable offers of dedication in accordance with Government Code Section 66477.2. All such offers may be accepted by CITY in its sole discretion at any later date without further notice to SUBDIVIDER as provided by law.

By way of explanation only, it is the current intention of CITY to accept all or part of such irrevocable offers to dedicate upon acceptance of the improvements called for in this Agreement.

2. Improvements - Time Limit. SUBDIVIDER agrees to cause all improvements to be made and constructed in the Subdivision to fully comply with the requirements of the Roseville Municipal Code and the Subdivision Map Act of the State of California according to the improvement plans for the Subdivision prepared by Baker Williams Engineering Group, dated April 10, 2020 and approved by the City Engineer and including any changes or alterations to such improvements required by the City Engineer, and to install, on or before December 31, 2021, such survey monuments as may be required by the City Engineer ("the Work"). SUBDIVIDER agrees to pay for any materials, provisions or other supplies used in, upon, for or about the performance of the Work, or for any work or labor of any kind done in

connection with the Work, or for any amounts due under the Unemployment Insurance Act with respect to such work or labor.

SUBDIVIDER agrees to complete all of the Work on or before twenty-four (24) months from the date of this Agreement. If in the opinion of the City Engineer of CITY, an extension of this Agreement is not detrimental to the public welfare, he or she is, in his or her sole discretion, hereby authorized to extend the time within which the Work shall be completed for a period not to exceed twelve (12) months. Upon a written application made by SUBDIVIDER, further extensions, not to exceed an additional six (6) months, shall be reviewed and approved at the discretion of the City Engineer of CITY. Any such application extension request by SUBDIVIDER shall fully state the grounds and facts relied upon for the granting of additional extensions.

In the event that SUBDIVIDER shall fail to complete the Work within the time provided by this Agreement, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, enter upon the Subdivision and complete the Work and recover the full cost and expense of such construction from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

If at anytime prior to the expiration of the time provided by this Agreement the City Engineer of CITY determines that a safety hazard exists within an existing public right-of-way, the City Engineer shall give written notice to SUBDIVIDER to eliminate the safety hazard. If SUBDIVIDER fails to eliminate the safety hazard within five (5) calendar days of the written notice, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, eliminate the safety hazard and recover the full cost and expense of such work from SUBDIVIDER, SUBDIVIDER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

3. Acquisition and Dedication of Easements or Rights-of-Ways. If any of the Work is to be constructed or installed on land not within the Subdivision or already existing public right-of-way, no construction or installation shall be commenced before:

a. The irrevocable offer of dedication or conveyance to CITY of appropriate right-of-ways, easements or other interest in real property, and appropriate authorization from the property owner to allow construction or installation of the improvements or work; or

b. The issuance of an order of possession by a court of competent jurisdiction pursuant to the State Eminent Domain Law. SUBDIVIDER shall comply in all respects with any such order of possession.

Nothing in this Section 3 shall be construed as authorizing or granting an extension of time to SUBDIVIDER for completion of the Work.

4. Inspection Fees and Costs. The City Engineer shall inspect all of the Work improvements made in the Subdivision to see that they comply with CITY's subdivision regulations and specifications. SUBDIVIDER shall deposit the estimated inspection fee and reimburse CITY for the cost of such inspections in accordance with Roseville Municipal Code section 18.20.070.

5. Securities.

a. SUBDIVIDER shall file with this Agreement two (2) improvement securities as set forth in Roseville Municipal Code Sections 18.20.150 and 18.20.160. Each security shall be in the amount of one hundred percent (100%) of the total estimated cost of the Work as determined by the City Engineer which amount is the sum of \$ ~~1,863,474~~. One improvement security shall secure faithful performance of this Agreement as required by Section 66499.3(a) of the Government Code of the State of California (the "faithful performance" security). The second improvement security shall, as required by Section 66499.3(b) of the Government Code of the State of California, secure the obligations set forth in Title 15

(commencing with Section 3082) of Part 4 of Division 3 of the Civil Code of the State of California for payment to the contractor, his subcontractors and to persons renting equipment or furnishing labor or materials to them for the Work (the "payment security"). The improvement securities required under this paragraph shall also secure placement of monumentation and guarantee payment therefor as provided by California Government Code section 66496.

b. SUBDIVIDER shall also file with this Agreement a "guarantee and warranty security" in the amount of ten percent (10%) of the City Engineer's estimated cost of the Work as set forth in Section 18.20.170 of the Roseville Municipal Code to guarantee and warrant the Work for a period of one year following its completion and acceptance against any defective work or labor done, or defective materials furnished, as required by Section 66499(a)(5) of the Government Code of the State of California. The guarantee and warranty security shall be released upon SUBDIVIDER's request following expiration of the warranty period and subject to the reasonable determination of the City Engineer that SUBDIVIDER's warranty obligations have been satisfied.

c. Any bonds submitted as security pursuant to this section shall be executed by a surety company authorized to transact a surety business in the State of California. All required securities shall be in a form approved by the City Attorney of CITY.

6. Successors and Assigns – Covenant Running with the Land. This Agreement shall inure to the benefit of, and be binding upon, the successors and assigns of the respective parties. It shall be recorded in the Office of the Recorder of Placer County concurrently with the final map of the Subdivision, and shall constitute a covenant running with the land and an equitable servitude upon the real property within the Subdivision.

7. Acceptance of Improvements Upon Completion. Upon satisfactory completion of the Work, in accordance with this Agreement, CITY agrees to accept the Work and its

improvements and the offers of dedication described in paragraph 1, subject to the provisions of paragraphs 1 and 10 of this Agreement.

8. Notice Regarding Construction. SUBDIVIDER shall notify the City Engineer of CITY in writing three (3) days prior to the commencement of construction of the Work.

9. Subdivider's Obligation to Warn Public During Construction. Until final acceptance of the Work, SUBDIVIDER shall give good and adequate warning to the public of each and every dangerous condition which may exist in the Work, and will take all reasonable actions to protect the public from any such dangerous condition.

10. Warranty.

a. SUBDIVIDER guarantees and warrants the public improvements which constitute the Work required by this Agreement, and agrees to remedy any defects in the improvements or the Work arising from faulty or defective materials or construction of said improvements or the Work occurring within twelve (12) months after their acceptance by CITY. SUBDIVIDER agrees to permit inspection of all improvements in the Subdivision by the City Engineer of CITY for such period, and to reimburse CITY for the cost of such inspections.

b. If, within the warranty period, the Work or improvement or any part of the Work done, furnished, installed, or constructed fails to fulfill any of the requirements of this Agreement or the improvement plans and specifications, SUBDIVIDER shall, without delay or cost to CITY, repair, replace or reconstruct any defective or otherwise unsatisfactory part or parts of the Work. CITY may, at its sole option, perform such repair or replacement itself if SUBDIVIDER has failed to commence such repair within twenty (20) days after CITY has mailed written notice of default to SUBDIVIDER and to SUBDIVIDER'S Surety. In such event, SUBDIVIDER agrees to pay the cost of such repair and replacement by CITY and CITY may, at its option, recover such cost as a lien against the Subdivision should the cost exceed the inspection fee deposited pursuant to paragraph 4 of this Agreement.

Should CITY determine that the public safety requires repairs or replacements to be made before SUBDIVIDER can be notified, CITY may, in its sole discretion, make the necessary repairs or replacement or perform the necessary work. SUBDIVIDER shall pay to CITY the cost of such repairs and CITY may at its option recover such cost as a lien against the Subdivision.

11. Indemnification. To the fullest extent allowed by law, SUBDIVIDER shall defend, indemnify, and save and hold harmless CITY, its officers, agents, employees and volunteers from any claims, suits or actions of every name, kind and description brought forth, or on account of, injuries to or death of any person (including but not limited to workers and the public), or damage to property, resulting from or arising out of SUBDIVIDER 's willful misconduct or negligent act or omission while engaged in the performance of obligations or exercise of rights created by this Agreement, except those matters arising from CITY's sole or active negligence or willful misconduct. The parties intend that this provision shall be broadly construed.

SUBDIVIDER's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law. The defense and indemnity obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.

12. Insurance. SUBDIVIDER agrees to continuously maintain, in full force and effect, at a minimum the following policies of insurance during the term of this Agreement.

COVERAGE

LIMITS OF LIABILITY

General Liability

\$2,000,000 per occurrence

\$3,000,000 aggregate

Personal Injury:

\$2,000,000 per occurrence

\$3,000,000 aggregate

Automobile Liability

\$1,000,000 combined single limit

a. Form. SUBDIVIDER shall submit a certificate evidencing such coverage for the period covered by this Agreement in a form satisfactory to Risk Management and the City Attorney, prior to undertaking any work hereunder. Any insurance written on a claims made basis is subject to the approval of Risk Management and the City Attorney.

b. Additional Insureds. SUBDIVIDER shall also provide a separate endorsement form or section of the policy showing CITY, its officers, agents, employees and volunteers as additional insureds for each type of coverage, except for Workers' Compensation, for ongoing and completed operations. Such insurance shall specifically cover the contractual liability of SUBDIVIDER. The additional insured coverage under the SUBDIVIDER's policy shall be primary and noncontributory, as evidenced by a separate endorsement or section of the policy, and shall not seek contribution from CITY's insurance or self-insurance. In addition, the additional insured coverage shall be at least as broad as the Insurance Services Office ("ISO") CG 20 01 Endorsement. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

c. Cancellation/Modification. SUBDIVIDER shall provide ten (10) days written notice to CITY prior to cancellation or modification of any insurance required by this Agreement.

d. Umbrella/Excess Insurance. The limits of insurance required in this Agreement may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply

on a primary and noncontributory basis for the benefit of CITY (if agreed to in a written contract) before CITY's own insurance shall be called upon to protect it as a named insured.

e. Self-Insured Retentions. All self-insured retentions ("SIR") must be disclosed to Risk Management for approval and shall not reduce the limits of liability. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or CITY. CITY reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

f. Waiver of Subrogation. SUBDIVIDER hereby agrees to waive subrogation which any insurer of SUBDIVIDER may acquire from SUBDIVIDER by virtue of the payment of any loss under a Workers Compensation, Commercial General Liability or Automobile Liability policy. All Workers Compensation, Commercial General Liability and Automobile Liability policies shall be endorsed with a waiver of subrogation in favor of CITY, its officers, agents, employees and volunteers for all work performed by SUBDIVIDER, its employees, agents and subcontractors.

g. Liability/Remedies. Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve SUBDIVIDER of liability in excess of such coverage, nor shall it preclude CITY from taking such other actions as are available to it under any other provisions of this Agreement or law.

13. Irrevocability of Security. The improvement securities furnished pursuant to paragraph 5 shall be irrevocable, shall not be limited as to time (except as to the one-year guarantee and warranty period specified in paragraph 10) and shall provide that they may be released, in whole or part, only upon the written approval of the City Engineer of CITY.

14. Attorney's Fees; Venue; Governing Law. Any action by any party to this Agreement, or any action concerning a security furnished pursuant to paragraph 5, shall be

brought in the appropriate court of competent jurisdiction within the County of Placer, State of California, notwithstanding any other provision of law which may provide that such action may be brought in some other location. In the event it becomes necessary for either party to bring an action with respect to enforcement of the provisions of this Agreement, or the security therefor, the prevailing party in such action shall be awarded a reasonable attorney's fee, as may be determined by the Court. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

15. Release of Faithful Performance Security. Release of faithful performance security shall be in compliance with and pursuant to the procedures set forth in Government Code Section 66499.7. Upon the completion of all secured Work by SUBDIVIDER and written acceptance of that completed Work by CITY, and the furnishing of the warranty security as required by paragraph 5(b), the City Engineer shall authorize the release of the remaining faithful performance security.

16. Release of Payment Security. Thirty-five (35) days after a notice of completion is recorded with respect to the Work, the City Engineer of CITY may authorize the release of the payment security, in the event that no claims have been filed against said security. In the event that claims or actions are filed against the security, the City Engineer may release so much of such security as is in excess of the total of the claims made against it, plus a reasonable amount of costs and attorney's fees.

17. Automatic Termination Upon Completion and Sale of Residential Unit. This Agreement and any lien pursuant hereto shall automatically be terminated, without any further action by either party or need to record any additional document, with respect to any single-family residential lot within a parcel designated by the Specific Plan for residential use, upon completion of construction and issuance by the City of a final inspection for a dwelling unit upon such residential lot and conveyance of such improved residential lot to a bona-fide good faith

purchaser thereof. In connection with its issuance of a final inspection for such improved lot, City shall confirm that: (i) all improvements which are required to serve the lot, as determined by City, have been accepted by City; (ii) the lot is included within the Maintenance CFD required by Section 3.20 or other financing mechanism acceptable to the City, to the extent required hereby; and (iii) if and to the extent applicable to such lot, an affordable purchase or rental housing agreement has been recorded on the lot. Termination of this Agreement for any such residential lot as provided for in this section shall not in any way be construed to terminate or modify any assessment district or Mello-Roos Community Facilities District lien affecting such lot at the time of termination.

18. Failure of Performance. In addition to any other remedies provided in this Agreement or by law, in the event SUBDIVIDER fails to perform one or more of the covenants or conditions of this Agreement, CITY shall have recourse to the security given to guarantee the performance of such acts. CITY may do, or cause to be done, those acts required of SUBDIVIDER, and shall have recourse against so much of the security as is necessary to discharge the responsibility of SUBDIVIDER. In the event CITY seeks recourse against a security, CITY shall also have recourse against SUBDIVIDER for any and all amounts necessary to complete the obligations of SUBDIVIDER in the event the security is insufficient to pay such amounts. All administrative costs, including reasonable attorney's fees pursuant to Section 66499.4 of the Government Code, incurred by CITY, in addition to the costs of the improvements, shall be a proper charge against the security and SUBDIVIDER.

19. Integration. This Agreement is an integrated agreement. It supersedes all prior negotiations, representations, or agreements, either written or oral.

20. Modification. This Agreement and each provision contained herein may be waived, amended, supplemented or eliminated only by mutual written agreement of the parties.

21. Notices. Any notices sent to the parties relating to this Agreement shall be sent by first class mail, postage prepaid or delivered to the following addresses:

Marc Stout, City Engineer
City of Roseville
311 Vernon Street
Roseville, CA 95678

Steve A. Schnable
John Mourier Construction, Inc.
1430 Blue Oaks Blvd, Suite 190
Roseville, CA 95747

Either party may amend its address by giving written notice to the other.

22. Severability. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attestation by its City Clerk under authority of Resolution No. ____, adopted by the Council of the City of Roseville on the ____ day of _____, 20__, and SUBDIVIDER has caused this Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation,

John Mourier Construction, Inc. _____,
a California corporation

BY: _____
DOMINICK CASEY
City Manager

BY: 
its: 

ATTEST:

BY: _____
SONIA OROZCO
City Clerk

and

BY: 
its: President

APPROVED AS TO FORM:

(NOTARIZATION REQUIRED)

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUFFICIENCY:

BY: 
MARC STOUT
City Engineer

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT**CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Placer)On May 21, 2020 before me, Karen Headley, a notary public,
Date Here Insert Name and Title of the Officerpersonally appeared Rod Yamanaka and John L. Mowier III
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature

Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____ Document Date: _____

Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Corporate Officer — Title(s): _____☐ Partner — ☐ Limited ☐ General☐ Individual ☐ Attorney in Fact☐ Trustee ☐ Guardian or Conservator☐ Other: _____

Signer Is Representing: _____

Signer's Name: _____

☐ Corporate Officer — Title(s): _____☐ Partner — ☐ Limited ☐ General☐ Individual ☐ Attorney in Fact☐ Trustee ☐ Guardian or Conservator☐ Other: _____

Signer Is Representing: _____



COUNCIL COMMUNICATION

CC #: 0841

File #: 0400-04-18-1 & 0400-07

Title: Campus Oaks CO-04 Final Map and Subdivision Agreement

Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 7.13.

RECOMMENDATION TO COUNCIL

It is recommended that the City Council take the following actions:

1. Approve the final map on file with the City Clerk and accept on behalf of the public, Lot A, and accept subject to improvement, Lots B, C, K, L, M & N, and the rights of way and the public easements offered thereon; and approve the abandonment of the easements listed thereon.
2. Adopt the attached resolution approving the Subdivision Agreement and authorize the City Manager to execute the agreement on behalf of the City.

BACKGROUND

The Development Services Department, Engineering Division, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 132 residential lots, 7 public landscape lots and 7 private common area lots.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

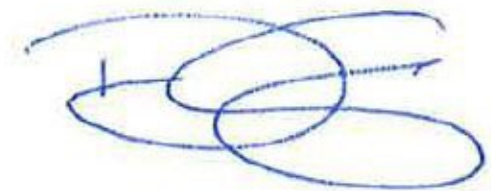
Approval of the Campus Oaks CO-04 final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Campus Oaks CO-04 final map was accomplished with the preparation of an Addendum to the Hewlett-Packard Master Plan Environmental Impact Report (HPMP EIR) as part of the analysis for the Campus Oaks Master Plan project (Hewlett-Packard Campus Oaks Addendum), which was approved by City Council on August 5, 2015. Because the Campus Oaks CO-04 final map is consistent with project evaluated in the Hewlett-Packard Campus Oaks Addendum, no new effects would be expected to occur and all applicable mitigation measures identified in the Addendum to the HPMP

will be implemented. As such, no additional CEQA action is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

Resolution No. 20-258

Subdivision Agreement

OWNER'S STATEMENT

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTEREST IN THE REAL PROPERTY INCLUDED WITHIN THE SUBDIVISION SHOWN UPON THIS FINAL MAP OF "CAMPUS OAKS CO-4, 5 & 15" AND DO HEREBY CONSENT TO THE PREPARATION AND RECORDATION OF THIS FINAL MAP; HEREBY OFFER FOR DEDICATION, AND DO HEREBY DEDICATE FOR PARTICULAR PURPOSES THE FOLLOWING:

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS AN EASEMENT FOR PUBLIC PURPOSES:

(A) PUBLIC EASEMENTS FOR THE INSTALLATION AND MAINTENANCE OF, BUT NOT LIMITED TO, ELECTROLIERS, WATER AND GAS PIPES, AND SEWER PIPES, AND FOR UNDERGROUND WIRES AND CONDUITS FOR ELECTRIC, TELEPHONE, AND TELEVISION, SERVICES AND TRAFFIC CONTROL APPURTENANCES TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER UNDER AND ACROSS LOTS A AND B AND THOSE STRIPS OF LAND LYING CONTIGUOUS TO THE PUBLIC RIGHT OF WAY AS SHOWN HEREON AND DESIGNATED "P.U.E." (PUBLIC UTILITY EASEMENT).

(B) PUBLIC EASEMENTS FOR THE INSTALLATION AND MAINTENANCE OF, BUT NOT LIMITED TO, WATER AND GAS PIPES, AND SEWER PIPES, AND FOR UNDERGROUND WIRES AND CONDUITS FOR ELECTRIC, TELEPHONE, AND TELEVISION, AND SERVICES TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER AND ACROSS LOTS E, F, G, H, I, J, K, L, M, AND N AND THOSE STRIPS OF LAND LYING BETWEEN THE LINES OF THE LOTS SHOWN HEREON AND DESIGNATED "P.U.E." (PUBLIC UTILITY EASEMENT).

(C) PUBLIC EASEMENTS FOR THE INSTALLATION AND MAINTENANCE OF, DRAINAGE PIPES, TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON,OVER, UNDER AND ACROSS LOT E AND THOSE STRIPS OF LAND LYING BETWEEN THE LINES OF THE LOTS SHOWN HEREON AND DESIGNED "D.E." (DRAINAGE EASEMENT).

(D) EMERGENCY ACCESS EASEMENTS FOR THE INGRESS AND EGRESS OF EMERGENCY SERVICE VEHICLES, ON, OVER AND ACROSS THOSE STRIPS OF LAND LYING BETWEEN THE LINES OF THE LOTS SHOWN HEREON AND DESIGNATED "E.V.A.E." (EMERGENCY VEHICLE ACCESS EASEMENT).

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED IN FEE FOR PUBLIC PURPOSES:

(A) BRAVE HAWK LOOP AND EDGECOMB WAY, TOGETHER WITH LOTS B AND C, K, L, M AND N, AS PUBLIC RIGHT OF WAY.

(B) LOT A, FOR PUBLIC PASEO AND PUBLIC UTILITY PURPOSES.

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS AN EASEMENT FOR PRIVATE PURPOSES:

(A) ACCESS EASEMENTS FOR INGRESS AND EGRESS PURPOSES ACROSS THOSE STRIPS OF LAND SHOWN HEREON AS "ACCESS EASEMENT" FOR THE MUTUAL BENEFIT OF ALL LOTS SHOWN HEREON.

(B) PEDESTRIAN EASEMENTS FOR PEDESTRIAN INGRESS AND EGRESS PURPOSES ACROSS THOSE STRIPS OF LAND SHOWN HEREON AS "P.E." (PEDESTRIAN EASEMENT) FOR THE MUTUAL BENEFIT OF ALL LOTS SHOWN HEREON.

THE REAL PROPERTY DESCRIBED BELOW IS RESERVED, BY THE OWNER, AS AN EASEMENT, FOR FUTURE DEDICATION TO THE HOME OWNERS ASSOCIATION.

(A) ACCESS EASEMENTS FOR INGRESS AND EGRESS PURPOSES ACROSS THOSE STRIPS OF LAND SHOWN HEREON AS "ACCESS EASEMENT" FOR THE MUTUAL BENEFIT OF ALL LOTS SHOWN HEREON.

(B) PEDESTRIAN EASEMENTS FOR PEDESTRIAN INGRESS AND EGRESS PURPOSES ACROSS THOSE STRIPS OF LAND SHOWN HEREON AS "P.E." (PEDESTRIAN EASEMENT) FOR THE MUTUAL BENEFIT OF ALL LOTS SHOWN HEREON.

(C) PRIVATE EASEMENTS FOR THE INSTALLATION AND MAINTENANCE OF DRAINAGE PIPES, TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER AND ACROSS THOSE STRIPS OF LAND LYING BETWEEN THE LINES OF THE LOTS SHOWN HEREON AND DESIGNATED "P.D.E." (PRIVATE DRAINAGE EASEMENT).

LENNAR HOMES OF CALIFORNIA INC., A CALIFORNIA CORPORATION

PRINT NAME _____ PRINT NAME _____
TITLE _____ TITLE _____

FINAL MAP
CAMPUS OAKS - CO-4

SUBDIVISION NO. PL 18-147
BEING A SUBDIVISION OF LOT 7 & A PORTION OF LOT 10,
DD MAPS 47, PLACER COUNTY RECORDS TOGETHER WITH
RESULTANT LOT 8, CERTIFICATE OF COMPLIANCE,
DOC. NO. 2017-0031660, PLACER COUNTY OFFICIAL RECORDS
SITUATE IN SECTION 20, T.11N., R.6E., M.D.M.

CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA

JUNE 2020

MORTON & PITALO, INC.

NOTARY'S STATEMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____

COUNTY OF _____

ON _____, BEFORE ME, _____,A NOTARY
PUBLIC PERSONALLY APPEARED_____

WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL

NOTARY PUBLIC, STATE OF _____

PRINT NAME _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY

MY COMMISSION NO. _____

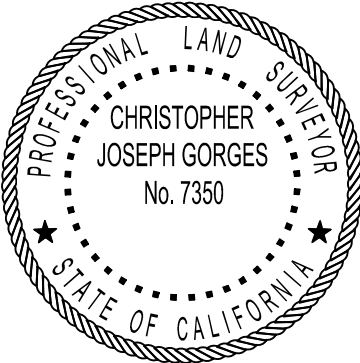
MY COMMISSION EXPIRES _____

SURVEYOR'S STATEMENT

THIS FINAL MAP OF "CAMPUS OAKS CO-4, 5 & 15" WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCES AT THE REQUEST OF LENNAR HOMES OF CALIFORNIA, INC., A CALIFORNIA CORPORATION, IN MARCH, 2019. I HEREBY STATE THAT THIS FINAL MAP OF "CAMPUS OAKS CO-4, 5 & 15" SUBSTANTIALLY CONFORMS TO THE APPROVED OR CONDITIONALLY APPROVED TENTATIVE MAP, AND THAT ALL THE MONUMENTS ARE OF THE CHARACTER AND OCCUPY THE POSITIONS INDICATED, OR THAT THEY WILL BE SET IN THOSE POSITIONS ON OR BEFORE DECEMBER 31, 2022 AND THAT THE MONUMENTS ARE, OR WILL BE, SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED.

CHRISTOPHER J. GORGES, P.L.S. 7350

DATE _____



CITY ENGINEER'S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS FINAL MAP OF "CAMPUS OAKS CO-4, 5 & 15" AND FIND IT TO BE SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS THEREOF; THAT ALL PROVISIONS OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES HAVE BEEN COMPLIED WITH.

DATED _____
MARC STOUT, R.C.E. 69879
CITY ENGINEER, CITY OF ROSEVILLE
LICENSE EXPIRATION DATE: 9/30/2020

I HEREBY STATE THAT I AM SATISFIED THIS FINAL MAP OF "CAMPUS OAKS CO-4 5 & 15" IS TECHNICALLY CORRECT.

FOR MARC STOUT, CITY ENGINEER, CITY OF ROSEVILLE

DATED _____
TIMOTHY G. BLAIR, P.L.S. 8278
EXPIRATION DATE: 12/31/2021



CITY CLERK'S STATEMENT

I HEREBY STATE THAT THE CITY COUNCIL, CITY OF ROSEVILLE, HAS APPROVED THIS FINAL MAP OF "CAMPUS OAKS CO-4, 5 & 15" AND HAS ACCEPTED, ON BEHALF OF THE PUBLIC, LOT A, AND HAS ACCEPTED, SUBJECT TO IMPROVEMENT, LOTS B, C, K, L, M AND N AND THE PUBLIC RIGHT OF WAY AND ALL PUBLIC EASEMENTS HEREON OFFERED FOR DEDICATION, AND THE CITY COUNCIL HAS ALSO APPROVED THE ABANDONMENT OF THE EASEMENTS LISTED HEREON WITHIN NOTE 4 ON SHEET 3.

CITY CLERK, CITY OF ROSEVILLE

DATED _____
ASSISTANT CITY CLERK

RECORDER'S STATEMENT

ACCEPTED FOR RECORD AND FILED IN THE OFFICE OF THE RECORDER OF PLACER COUNTY, STATE OF CALIFORNIA, AT _____ MINUTES AFTER _____ O'CLOCK ON THE DAY OF _____, 2020, AND RECORDED IN BOOK ____ OF MAPS, AT PAGE ____, AT THE REQUEST OF MORTON & PITALO, INC.

FILE NO. _____
COUNTY RECORDER OF PLACER COUNTY

FEE: _____ BY: _____
DEPUTY

FINAL MAP
CAMPUS OAKS - CO-4

SUBDIVISION NO. PL 18-147

BEING A SUBDIVISION OF LOT 7 & A PORTION OF LOT 10,
DD MAPS 47, PLACER COUNTY RECORDS TOGETHER WITH
RESULTANT LOT 8, CERTIFICATE OF COMPLIANCE,
DOC. NO. 2017-0031660, PLACER COUNTY OFFICIAL RECORDS
SITUATE IN SECTION 20, T.11N., R.6E., M.D.M.

CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JUNE 2020 SCALE: 1"=80'
MORTON & PITALO, INC.

NOTES

- TOTAL AREA OF THIS SUBDIVISION IS 13.795 ACRES, CREATING 132 RESIDENTIAL LOTS, 7 PUBLIC LANDSCAPE LOTS, AND 7 PRIVATE COMMON AREA LOTS.
- A DECLARATION OF CONDITIONS, COVENANTS AND RESTRICTIONS FOR THIS SUBDIVISION HAS BEEN RECORDED AS DOCUMENT NO. _____.
- THE PLACES (ACCESS EASEMENTS) SHOWN HEREON ARE PRIVATE AND SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
- PURSUANT TO SECTION 66499.20.2 OF THE GOVERNMENT CODE, THE LAND SHOWN HEREON IS HEREBY MERGED AND RESUBDIVIDED AND THE FOLLOWING EASEMENTS ARE HEREBY ABANDONED:

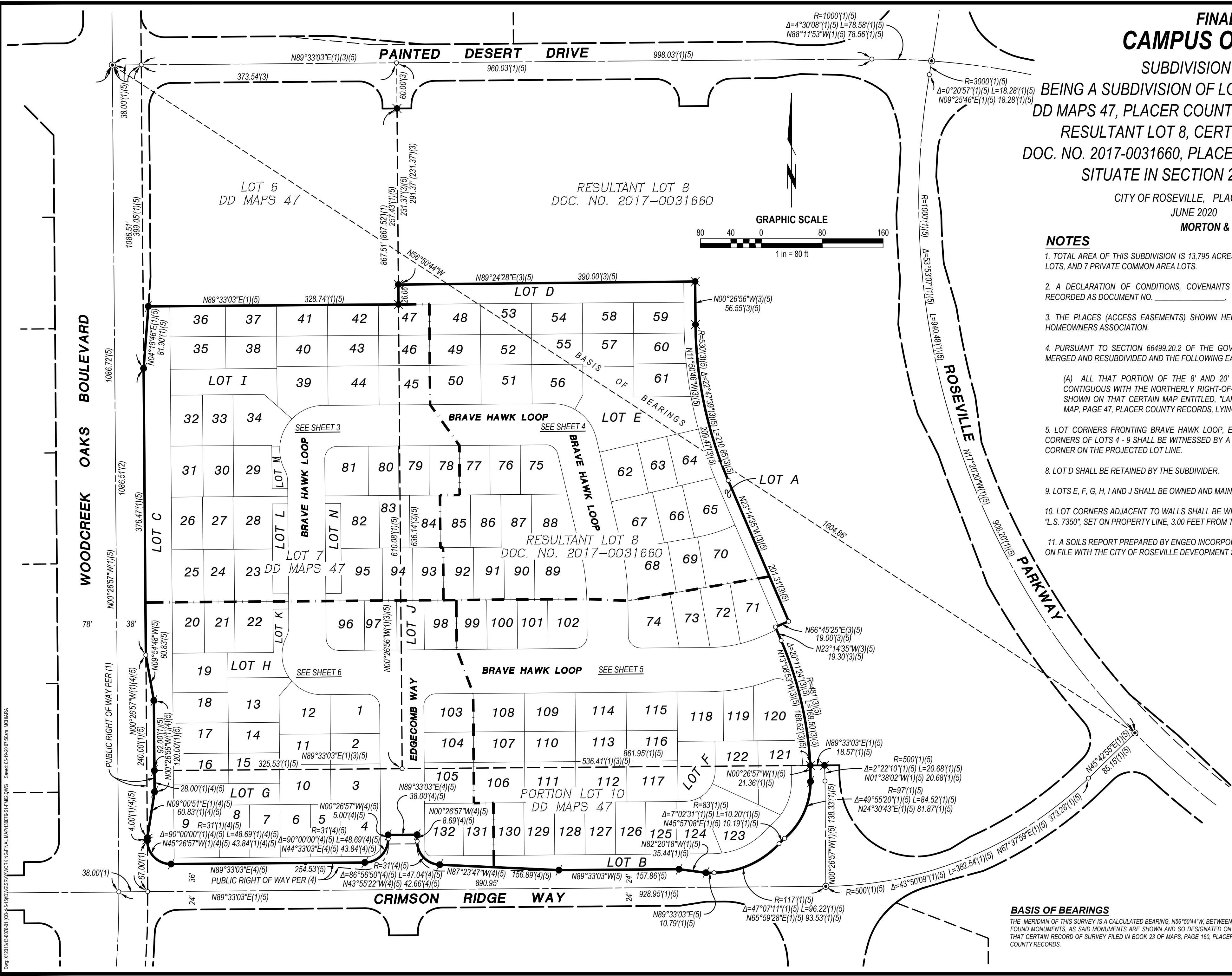
(A) ALL THAT PORTION OF THE 8' AND 20' PUBLIC UTILITY EASEMENT AND PEDESTRIAN EASEMENT CONTIGUOUS WITH THE NORTHERLY RIGHT-OF-WAY OF CRIMSON RIDGE DRIVE, AS SAID EASEMENTS ARE SHOWN ON THAT CERTAIN MAP ENTITLED, "LARGE LOT FINAL MAP CAMPUS OAKS" FILED IN BOOK DD OF MAP, PAGE 47, PLACER COUNTY RECORDS, LYING WITHIN THE NUMBERED LOTS SHOWN HEREON.
- LOT CORNERS FRONTING BRAVE HAWK LOOP, EDGEComb WAY AND CAMPUS PARKWAY AND THE FRONT CORNERS OF LOTS 4 - 9 SHALL BE WITNESSED BY A 1" BRASS DISC TAGGED "L.S. 7350" SET 1.0 FEET FROM THE CORNER ON THE PROJECTED LOT LINE.
- LOT D SHALL BE RETAINED BY THE SUBDIVIDER.
- LOTS E, F, G, H, I AND J SHALL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.
- LOT CORNERS ADJACENT TO WALLS SHALL BE WITNESSED BY A 1" IRON PIPE WITH ALUMINUM CAP STAMPED "L.S. 7350", SET ON PROPERTY LINE, 3.00 FEET FROM THE TRUE CORNER.
- A SOILS REPORT PREPARED BY ENGEO INCORPORATED, PROJECT NO. 11216.000.000, DATED JULY 7, 2014 IS ON FILE WITH THE CITY OF ROSEVILLE DEVELOPMENT SERVICES - ENGINEERING DEPARTMENT.

LEGEND

- DIMENSION POINT, NOTHING FOUND OR SET
- SET 1" GALVANIZED PIPE TAGGED "L.S. 7350"
- SET 1" BRASS DISC STAMPED "L.S. 7350"
- SET BRONZE DISC STAMPED "L.S. 7350" SET IN CITY STANDARD WELL
- FOUND 3/4" REBAR, NO TAG (COPPER COLLAR, STAMPED "L.S. 4751" PER (1)(5))
- FOUND BRASS DISC STAMPED "L.S. 4751" PER (5)
- FOUND BRONZE DISC STAMPED "L.S. 4751" IN WELL PER (1)(5)
- E.V.A.E. EMERGENCY VEHICLE ACCESS EASEMENT
- N.T.S. NOT TO SCALE
- P.E. PEDESTRIAN EASEMENT
- P.D.E. PRIVATE DRAINAGE EASEMENT
- P.U.E. PUBLIC UTILITY EASEMENT
- P.P.E. PUBLIC PEDESTRIAN EASEMENT
- S.F. SQUARE FEET
- (1)..... RECORD PER DD MAPS 47
- (2)..... RECORD PER DOC. NO. 2016-0083144
- (3)..... RECORD PER DOC. NO. 2017-0031660
- (4)..... RECORD PER DOC. NO. 2018-0044522
- (5)..... RECORD PER 23 R.S. 160

BASIS OF BEARINGS

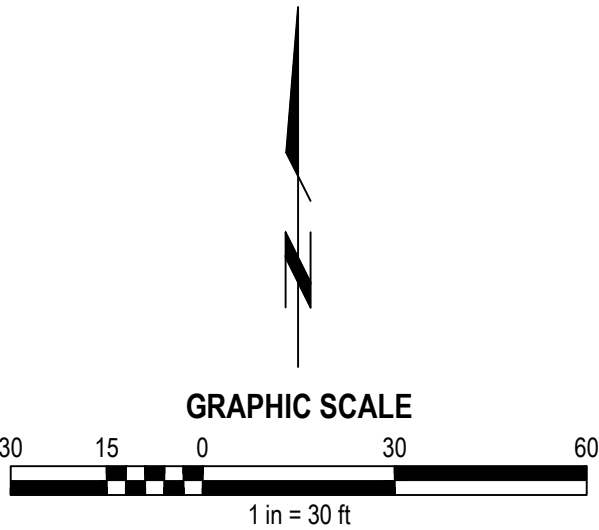
THE MERIDIAN OF THIS SURVEY IS A CALCULATED BEARING, N56°50'44"W, BETWEEN FOUND MONUMENTS. AS SAID MONUMENTS ARE SHOWN AND SO DESIGNATED ON THAT CERTAIN RECORD OF SURVEY FILED IN BOOK 23 OF MAPS, PAGE 160, PLACER COUNTY RECORDS.



FINAL MAP
CAMPUS OAKS - CO-4

SUBDIVISION NO. PL 18-147
BEING A SUBDIVISION OF LOT 7 & A PORTION OF LOT 10,
DD MAPS 47, PLACER COUNTY RECORDS TOGETHER WITH
RESULTANT LOT 8, CERTIFICATE OF COMPLIANCE,
DOC. NO. 2017-0031660, PLACER COUNTY OFFICIAL RECORDS
SITUATE IN SECTION 20, T.11N., R.6E., M.D.M.

CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JUNE 2020 SCALE: 1"=30'
MORTON & PITALO, INC.



NOTES
1. SEE SHEET 2 FOR NOTES, LEGEND, AND BASIS OF BEARINGS.

COURSE TABLE

C1.....	R=58°	Δ=9°54'04"	L=10.02'
		N38°49'17"E	10.01'
C2.....	R=58°	Δ=31°23'40"	L=31.78'
		N12°10'24"W	31.38'
C3.....	R=31°	Δ=27°25'18"	L=14.84'
		N14°09'35"W	14.70'

LOT 6
DD MAPS 47

RESULTANT LOT 8
DOC. NO. 2017-0031660

LOT D
9972 S.F.

20' P.D.E.

375.00'

20' P.D.E.

375.00'

20' P.D.E.

375.00'

20' P.D.E.

375.00'

20' P.D.E.

375.00'

20' P.D.E.

375.00'

20' P.D.E.

375.00'

20' P.D.E.

375.00'

20' P.D.E.

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20' P.D.E.

375.00'

20' P.D.E.

375.00'

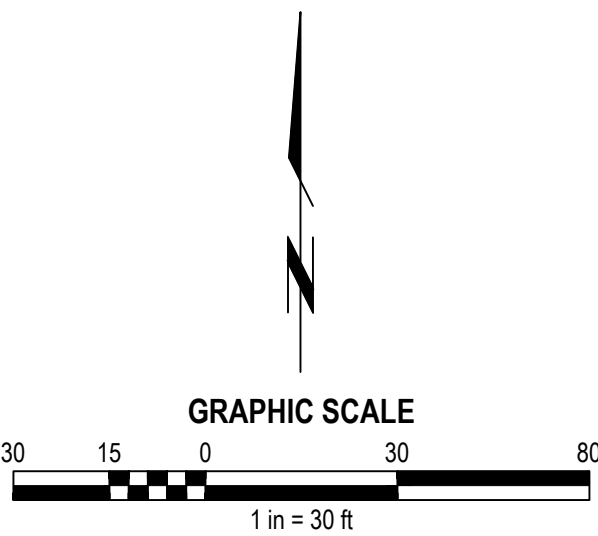
20' P.D.E.

375.00'

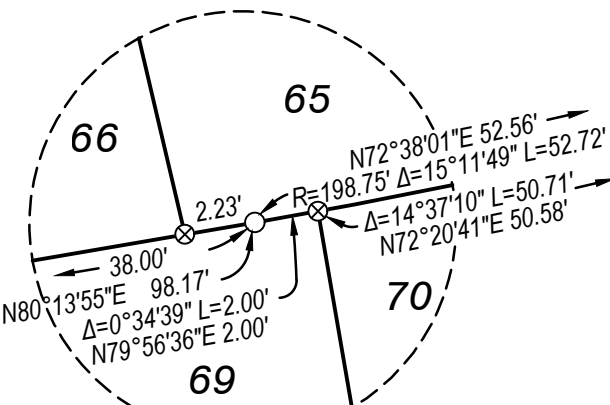
FINAL MAP
CAMPUS OAKS - CO-4

SUBDIVISION NO. PL 18-147
BEING A SUBDIVISION OF LOT 7 & A PORTION OF LOT 10,
DD MAPS 47, PLACER COUNTY RECORDS TOGETHER WITH
RESULTANT LOT 8, CERTIFICATE OF COMPLIANCE,
DOC. NO. 2017-0031660, PLACER COUNTY OFFICIAL RECORDS
SITUATE IN SECTION 20, T.11N., R.6E., M.D.M.

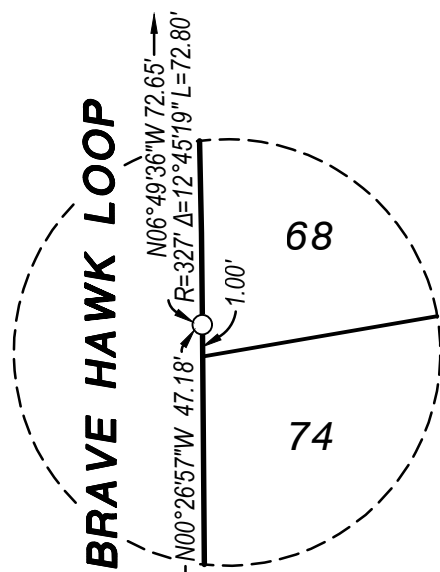
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JUNE 2020 SCALE: 1"=30'
MORTON & PITALO, INC.



NOTES
1. SEE SHEET 2 FOR NOTES, LEGEND, AND BASIS OF BEARINGS.



DETAIL "A"
N.T.S.



DETAIL "B"
N.T.S.

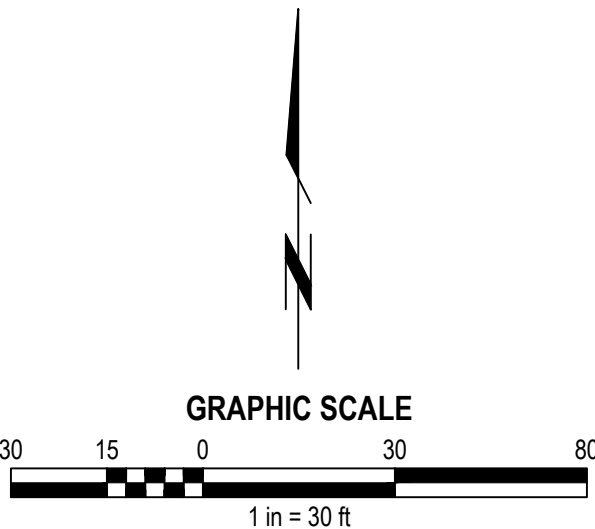


Doc: X:\2013\130076\01 CO-4-5\BID\GIS\WORKING\FINAL MAP\130076-S1-FINAL.DWG | Saved: 06-19-2020 07:44am | MCHARA

FINAL MAP
CAMPUS OAKS - CO-4

SUBDIVISION NO. PL 18-147
BEING A SUBDIVISION OF LOT 7 & A PORTION OF LOT 10,
DD MAPS 47, PLACER COUNTY RECORDS TOGETHER WITH
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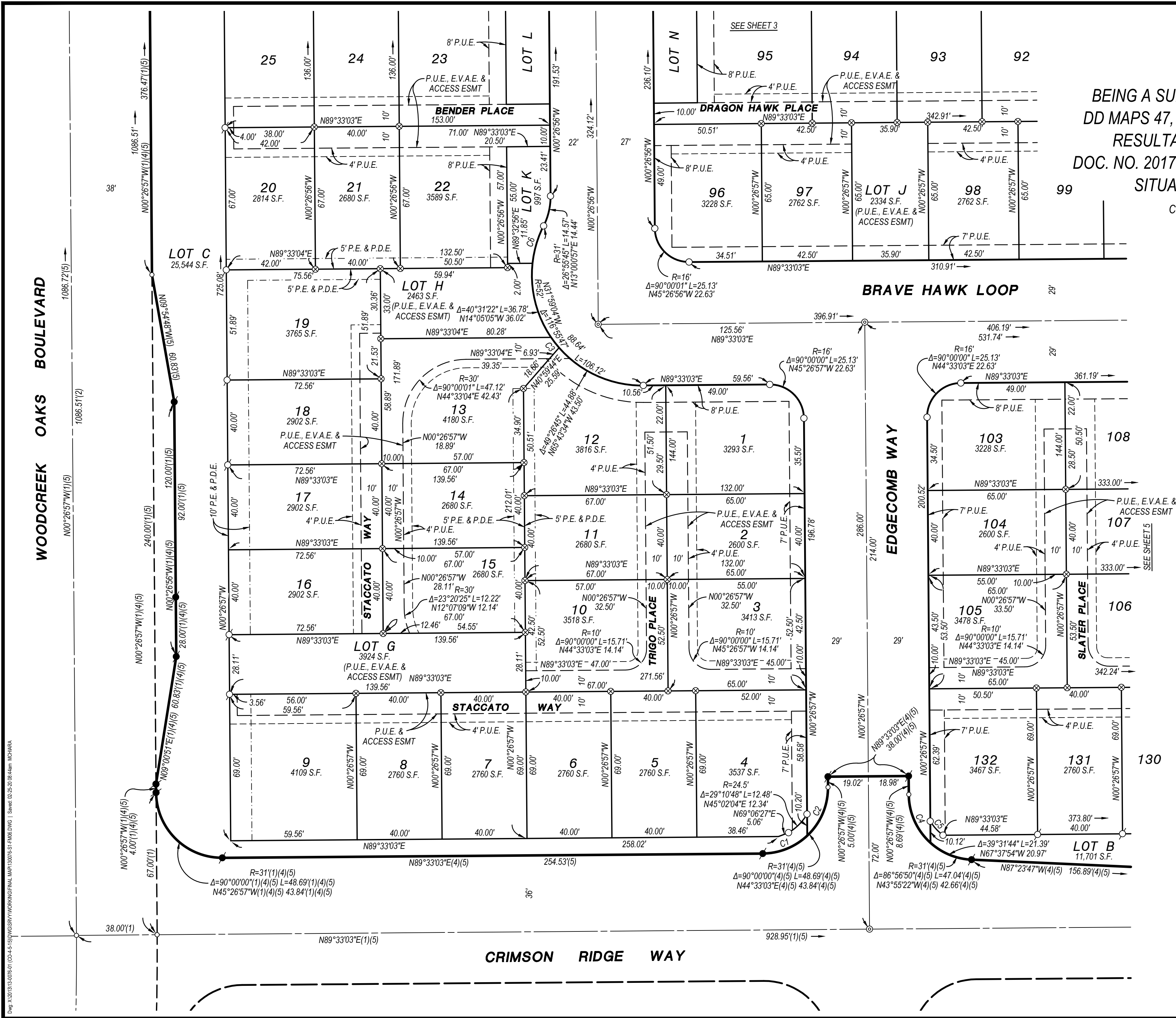
CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JUNE 2020 SCALE: 1"=30'
MORTON & PITALO, INC.



NOTES
1. SEE SHEET 2 FOR NOTES, LEGEND, AND BASIS OF BEARINGS.

COURSE TABLE

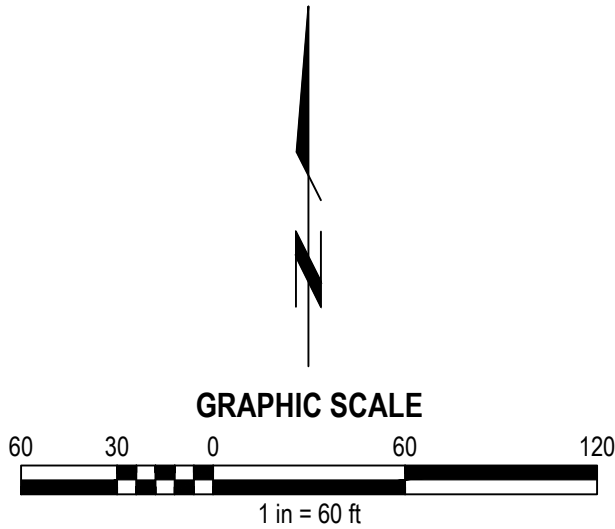
C1.....	R=31°(4)(5)	Δ=42°42'10" L=23.10'
		N68°11'58"E 22.57'
C2.....	R=31°(4)(5)	Δ=47°17'50" L=25.59'
		N23°11'58"E 24.87'
C3.....	R=52°	Δ=6°39'26" L=6.04'
		N37°40'29"W 6.04'
C4.....	R=31°(4)(5)	Δ=47°25'05" L=25.66'
		N24°09'29"W 24.93'
C5.....	R=24.50'	Δ=20°52'22" L=8.93'
		N42°19'32"W 8.88'
C6.....	R=52°	Δ=20°18'15" L=18.43'
		N16°19'43"E 18.33'



FINAL MAP
CAMPUS OAKS - CO-4

SUBDIVISION NO. PL 18-147
BEING A SUBDIVISION OF LOT 7 & A PORTION OF LOT 10,
DD MAPS 47, PLACER COUNTY RECORDS TOGETHER WITH
RESULTANT LOT 8, CERTIFICATE OF COMPLIANCE,
DOC. NO. 2017-0031660, PLACER COUNTY OFFICIAL RECORDS
SITUATE IN SECTION 20, T.11N., R.6E., M.D.M.

CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JUNE 2020 SCALE: 1"=80'
MORTON & PITALO, INC.



LOCAL AGENCY ADDITIONAL INFORMATION SHEET

THE ADDITIONAL INFORMATION SHOWN ON THIS SHEET IS FOR INFORMATIONAL PURPOSES AS REQUIRED BY SECTION 66434.2 OF THE SUBDIVISION MAP ACT, AS AMENDED, AND LOCAL ORDINANCES.

THE INFORMATION SHOWN HEREON DESCRIBES CONDITIONS AS OF THE DATE OF FILING. IT IS NOT INTENDED TO AFFECT RECORD TITLE INTEREST. THE INFORMATION IS DERIVED FROM PUBLIC RECORDS OR REPORTS AND DOES NOT IMPLY THE CORRECTNESS OR SUFFICIENCY OF THOSE RECORDS OR REPORTS BY THE PREPARER OF THIS ADDITIONAL INFORMATION SHEET.

(A) EACH RESIDENTIAL DWELLING CONSTRUCTED ON ANY OF THE LOTS INDICATED SHALL BE FITTED WITH A SEWER BACKFLOW VALVE AS APPROVED BY THE CITY OF ROSEVILLE. IT SHALL BE THE RESPONSIBILITY OF THE OWNER OF SAID DWELLING TO MAINTAIN THE VALVE AND PREVENT DAMAGE FROM OCCURRING THERETO. THE CITY OF ROSEVILLE SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OR PERFORMANCE OF THE VALVE, AND THE CITY OF ROSEVILLE SHALL NOT BE LIABLE FOR ANY DAMAGE OCCURRING TO ANY SUCH DWELLING, OR ITS CONTENTS, DUE TO FAILURE OF THE VALVE FOR ANY REASON WHATSOEVER.

LEGEND

* DENOTES SEWER BACKFLOW PREVENTER VALVE REQUIRED ON SANITARY SEWER CONNECTION BY THE CITY OF ROSEVILLE WITH THE BUILDING PERMIT AND MAINTAINED THEREAFTER BY THE OWNER.

NOTES

1. SEE SHEET 2 FOR NOTES, LEGEND, AND BASIS OF BEARINGS.



RESOLUTION NO. 20-258

APPROVING A SUBDIVISION AGREEMENT, BY AND BETWEEN THE CITY OF
ROSEVILLE AND BBC ROSEVILLE OAKS, LLC AND LENNAR HOMES OF
CALIFORNIA, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON
BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a subdivision agreement, by and between the City of Roseville and BBC
Roseville Oaks, LLC and Lennar Homes of California, Inc., for the Campus Oaks – CO-4
subdivision, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that
said agreement is approved and that the City Manager is authorized to execute it on behalf of the
City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of
_____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**RECORDING REQUESTED BY AND WHEN
RECORDED, PLEASE RETURN TO:**

**City Clerk
CITY OF ROSEVILLE
311 Vernon Street
Roseville, CA 95678**

Exempt from recording fees
Pursuant to Govt. Code §27383

SUBDIVISION AGREEMENT

Campus Oaks – CO-04 Subdivision

THIS AGREEMENT, made and entered into this ____ day of _____,
20____, by and between the CITY OF ROSEVILLE, a municipal corporation (“CITY”), and
BBC Roseville Oaks LLC, an Illinois limited liability company (the “DEVELOPER”) and
Lennar Homes of California Inc., a California corporation (the “BUILDER”).

W I T N E S S E T H:

WHEREAS, BUILDER is possessed and owner of a tract of land lying in the City of
Roseville, County of Placer, known as “Campus Oaks – CO-04 Subdivision” (Subdivision no.
PL18-147; “the Subdivision”); and

WHEREAS, a tentative map of the Subdivision was approved by the City Planning
Commission on the 27th day of September, 2018, and the final map of the Subdivision has been
approved subject to the execution of this Agreement; OR

WHEREAS, the final map has been filed on the ____ day of _____,
20____ in Book _____ of Parcel/Subdivision Maps at Page _____ in the Official
Records, Placer County Recorder, file no. _____; and

WHEREAS, BUILDER has purchased the Subdivision ("Property") from the
DEVELOPER; and

WHEREAS, Section 18.20.110 of the Roseville Municipal Code, regulating the
subdivision of land in the City, requires that DEVELOPER shall execute and file an agreement
between itself and CITY relating to the improvements to be made in a subdivision, prior to the
approval by the City Council of the final map.

NOW, THEREFORE, the parties agree as follows:

1. Rights-of-Way. Except as otherwise provided by this Agreement, CITY rejects
all lands, right-of-ways, and easements offered for dedication on the final map of the
Subdivision. All such offers shall, however, remain open, and shall constitute irrevocable offers
of dedication in accordance with Government Code Section 66477.2. All such offers may be
accepted by CITY in its sole discretion at any later date without further notice to DEVELOPER
as provided by law.

By way of explanation only, it is the current intention of CITY to accept all or
part of such irrevocable offers to dedicate upon acceptance of the improvements called for in this
Agreement.

2. Improvements - Time Limit. DEVELOPER agrees to cause all improvements to
be made and constructed in the Subdivision to fully comply with the requirements of the
Roseville Municipal Code and the Subdivision Map Act of the State of California according to

the improvement plans for the Subdivision prepared by Morton & Pitalo Inc., dated June 12, 2019 and approved by the City Engineer and including any changes or alterations to such improvements required by the City Engineer, and to install, on or before December 31, 2020, such survey monuments as may be required by the City Engineer ("the Work"). DEVELOPER agrees to pay for any materials, provisions or other supplies used in, upon, for or about the performance of the Work, or for any work or labor of any kind done in connection with the Work, or for any amounts due under the Unemployment Insurance Act with respect to such work or labor.

DEVELOPER agrees to complete all of the Work on or before twenty-four (24) months from the date of this Agreement. If in the opinion of the City Engineer of CITY, an extension of this Agreement is not detrimental to the public welfare, he or she is, in his or her sole discretion, hereby authorized to extend the time within which the Work shall be completed for a period not to exceed twelve (12) months. Upon a written application made by DEVELOPER, further extensions, not to exceed an additional six (6) months, shall be reviewed and approved at the discretion of the City Engineer of CITY. Any such application extension request by DEVELOPER shall fully state the grounds and facts relied upon for the granting of additional extensions.

In the event that DEVELOPER shall fail to complete the Work within the time provided by this Agreement, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, enter upon the Subdivision and complete the Work and recover the full cost and expense of such construction from DEVELOPER, DEVELOPER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

If at any time prior to the expiration of the time provided by this Agreement the City Engineer of CITY determines that a safety hazard exists within an existing public right-of-way, the City Engineer shall give written notice to DEVELOPER to eliminate the safety hazard. If DEVELOPER fails to eliminate the safety hazard within five (5) calendar days of the written notice, CITY may, in its sole discretion and in addition to any other remedy provided in this Agreement or by law, eliminate the safety hazard and recover the full cost and expense of such work from DEVELOPER, DEVELOPER's successors and assigns, or from the then owner of the Subdivision, and/or place a lien upon the Subdivision for such cost and expense.

3. Acquisition and Dedication of Easements or Rights-of-Ways. If any of the Work is to be constructed or installed on land not within the Subdivision or already existing public right-of-way, no construction or installation shall be commenced before:

a. The irrevocable offer of dedication or conveyance to CITY of appropriate right-of-ways, easements or other interest in real property, and appropriate authorization from the property owner to allow construction or installation of the improvements or work; or

b. The issuance of an order of possession by a court of competent jurisdiction pursuant to the State Eminent Domain Law. DEVELOPER shall comply in all respects with any such order of possession.

Nothing in this Section 3 shall be construed as authorizing or granting an extension of time to DEVELOPER for completion of the Work.

4. Inspection Fees and Costs. The City Engineer shall inspect all of the Work improvements made in the Subdivision to see that they comply with CITY's subdivision regulations and specifications. DEVELOPER shall deposit the estimated inspection fee and

reimburse CITY for the cost of such inspections in accordance with Roseville Municipal Code section 18.20.070.

5. Securities.

a. DEVELOPER and BUILDER have agreed that BUILDER shall file with this Agreement two (2) improvement securities as set forth in Roseville Municipal Code Sections 18.20.150 and 18.20.160. Each security shall be in the amount of one hundred percent (100%) of the total estimated cost of the Work as determined by the City Engineer which amount is the sum of \$ 4,736,407.73. One improvement security shall secure faithful performance of this Agreement as required by Section 66499.3(a) of the Government Code of the State of California (the "faithful performance" security). The second improvement security shall, as required by Section 66499.3(b) of the Government Code of the State of California, secure the obligations set forth in Title 15 (commencing with Section 3082) of Part 4 of Division 3 of the Civil Code of the State of California for payment to the contractor, his subcontractors and to persons renting equipment or furnishing labor or materials to them for the Work (the "payment security"). The improvement securities required under this paragraph shall also secure placement of monumentation and guarantee payment therefor as provided by California Government Code section 66496.

b. DEVELOPER shall file with this Agreement a "guarantee and warranty security" in the amount of ten percent (10%) of the City Engineer's estimated cost of the Work as set forth in Section 18.20.170 of the Roseville Municipal Code to guarantee and warrant the Work for a period of one year following its completion and acceptance against any defective work or labor done, or defective materials furnished, as required by Section 66499(a)(5) of the Government Code of the State of California. The guarantee and warranty security shall be

released upon DEVELOPER's request following expiration of the warranty period and subject to the reasonable determination of the City Engineer that DEVELOPER's warranty obligations have been satisfied.

c. Any bonds submitted as security pursuant to this section shall be executed by a surety company authorized to transact a surety business in the State of California. All required securities shall be in a form approved by the City Attorney of CITY.

6. Successors and Assigns – Covenant Running with the Land. This Agreement shall inure to the benefit of, and be binding upon, the successors and assigns of the respective parties. It shall be recorded in the Office of the Recorder of Placer County concurrently with the final map of the Subdivision, and shall constitute a covenant running with the land and an equitable servitude upon the real property within the Subdivision.

7. Acceptance of Improvements Upon Completion. Upon satisfactory completion of the Work, in accordance with this Agreement, CITY agrees to accept the Work and its improvements and the offers of dedication described in paragraph 1, subject to the provisions of paragraphs 1 and 10 of this Agreement.

8. Notice Regarding Construction. DEVELOPER shall notify the City Engineer of CITY in writing three (3) days prior to the commencement of construction of the Work.

9. DEVELOPER's Obligation to Warn Public During Construction. Until final acceptance of the Work, DEVELOPER shall give good and adequate warning to the public of each and every dangerous condition which may exist in the Work, and will take all reasonable actions to protect the public from any such dangerous condition.

10. Warranty.

a. DEVELOPER guarantees and warrants the public improvements which constitute the Work required by this Agreement, and agrees to remedy any defects in the improvements or the Work arising from faulty or defective materials or construction of said improvements or the Work occurring within twelve (12) months after their acceptance by CITY. DEVELOPER agrees to permit inspection of all improvements in the Subdivision by the City Engineer of CITY for such period, and to reimburse CITY for the cost of such inspections.

b. If, within the warranty period, the Work or improvement or any part of the Work done, furnished, installed, or constructed fails to fulfill any of the requirements of this Agreement or the improvement plans and specifications, DEVELOPER shall, without delay or cost to CITY, repair, replace or reconstruct any defective or otherwise unsatisfactory part or parts of the Work. CITY may, at its sole option, perform such repair or replacement itself if DEVELOPER has failed to commence such repair within twenty (20) days after CITY has mailed written notice of default to DEVELOPER and to DEVELOPER'S Surety. In such event, DEVELOPER agrees to pay the cost of such repair and replacement by CITY and CITY may, at its option, recover such cost as a lien against the Subdivision should the cost exceed the inspection fee deposited pursuant to paragraph 4 of this Agreement.

Should CITY determine that the public safety requires repairs or replacements to be made before DEVELOPER can be notified, CITY may, in its sole discretion, make the necessary repairs or replacement or perform the necessary work. DEVELOPER shall pay to CITY the cost of such repairs and CITY may at its option recover such cost as a lien against the Subdivision.

11. Indemnification. To the fullest extent allowed by law, DEVELOPER shall defend, indemnify, and save and hold harmless CITY, its officers, agents, employees and

volunteers from any claims, suits or actions of every name, kind and description brought forth, or on account of, injuries to or death of any person (including but not limited to workers and the public), or damage to property, resulting from or arising out of DEVELOPER 's willful misconduct or negligent act or omission while engaged in the performance of obligations or exercise of rights created by this Agreement, except those matters arising from CITY's sole or active negligence or willful misconduct. The parties intend that this provision shall be broadly construed.

DEVELOPER's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law. The defense and indemnity obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.

12. Insurance. DEVELOPER agrees to continuously maintain, in full force and effect, at a minimum the following policies of insurance during the term of this Agreement.

<u>COVERAGE</u>	<u>LIMITS OF LIABILITY</u>
General Liability	\$2,000,000 per occurrence \$4,000,000 aggregate Personal Injury: \$2,000,000 per occurrence \$4,000,000 aggregate
Automobile Liability	\$1,000,000 combined single limit
Workers' Compensation	Statutory

a. Form. DEVELOPER shall submit a certificate evidencing such coverage for the period covered by this Agreement in a form satisfactory to Risk Management and the City Attorney, prior to undertaking any work hereunder. Any insurance written on a claims made basis is subject to the approval of Risk Management and the City Attorney.

b. Additional Insureds. DEVELOPER shall also provide a separate endorsement form or section of the policy showing CITY, its officers, agents, employees and volunteers as additional insureds for each type of coverage, except for Workers' Compensation, for ongoing and completed operations. Such insurance shall specifically cover the contractual liability of DEVELOPER. The additional insured coverage under the DEVELOPER's policy shall be primary and noncontributory, as evidenced by a separate endorsement or section of the policy, and shall not seek contribution from CITY's insurance or self-insurance. In addition, the additional insured coverage shall be at least as broad as the Insurance Services Office ("ISO") CG 20 01 Endorsement. Any available insurance proceeds in excess of the specified minimum insurance coverage requirements and limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be: (1) the minimum coverage and limits specified in this Agreement; or (2) the full coverage and maximum limits of any insurance proceeds available to the named insureds, whichever is greater.

c. Cancellation/Modification. DEVELOPER shall provide ten (10) days written notice to CITY prior to cancellation or modification of any insurance required by this Agreement.

d. Umbrella/Excess Insurance. The limits of insurance required in this Agreement may be satisfied by a combination of primary and excess insurance. Any excess insurance shall contain or be endorsed to contain a provision that such coverage shall also apply on a primary and noncontributory basis for the benefit of CITY (if agreed to in a written contract) before CITY's own insurance shall be called upon to protect it as a named insured.

e. Self-Insured Retentions. All self-insured retentions ("SIR") must be disclosed to Risk Management for approval and shall not reduce the limits of liability.

Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named insured or CITY. CITY reserves the right to obtain a full certified copy of any insurance policy and endorsements. The failure to exercise this right shall not constitute a waiver of such right.

f. Waiver of Subrogation. DEVELOPER hereby agrees to waive subrogation which any insurer of DEVELOPER may acquire from DEVELOPER by virtue of the payment of any loss under a Workers Compensation, Commercial General Liability or Automobile Liability policy. All Workers Compensation, Commercial General Liability and Automobile Liability policies shall be endorsed with a waiver of subrogation in favor of CITY, its officers, agents, employees and volunteers for all work performed by DEVELOPER, its employees, agents and subcontractors.

g. Liability/Remedies. Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve DEVELOPER of liability in excess of such coverage, nor shall it preclude CITY from taking such other actions as are available to it under any other provisions of this Agreement or law.

13. Irrevocability of Security. The improvement securities furnished pursuant to paragraph 5 shall be irrevocable, shall not be limited as to time (except as to the one-year guarantee and warranty period specified in paragraph 10) and shall provide that they may be released, in whole or part, only upon the written approval of the City Engineer of CITY.

14. Attorney's Fees; Venue; Governing Law. Any action by any party to this Agreement, or any action concerning a security furnished pursuant to paragraph 5, shall be brought in the appropriate court of competent jurisdiction within the County of Placer, State of California, notwithstanding any other provision of law which may provide that such action may

be brought in some other location. In the event it becomes necessary for either party to bring an action with respect to enforcement of the provisions of this Agreement, or the security therefor, the prevailing party in such action shall be awarded a reasonable attorney's fee, as may be determined by the Court. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

15. Release of Faithful Performance Security. Release of faithful performance security shall be in compliance with and pursuant to the procedures set forth in Government Code Section 66499.7. Upon the completion of all secured Work by DEVELOPER and written acceptance of that completed Work by CITY, and the furnishing of the warranty security as required by paragraph 5(b), the City Engineer shall authorize the release of the remaining faithful performance security.

16. Release of Payment Security. Thirty-five (35) days after a notice of completion is recorded with respect to the Work, the City Engineer of CITY may authorize the release of the payment security, in the event that no claims have been filed against said security. In the event that claims or actions are filed against the security, the City Engineer may release so much of such security as is in excess of the total of the claims made against it, plus a reasonable amount of costs and attorney's fees.

17. Automatic Termination Upon Completion and Sale of Residential Unit. This Agreement and any lien pursuant hereto shall automatically be terminated, without any further action by either party or need to record any additional document, with respect to any single-family residential lot within a parcel designated by the Specific Plan for residential use, upon completion of construction and issuance by the City of a final inspection for a dwelling unit upon such residential lot and conveyance of such improved residential lot to a bona-fide good faith

purchaser thereof. In connection with its issuance of a final inspection for such improved lot, City shall confirm that: (i) all improvements which are required to serve the lot, as determined by City, have been accepted by City; (ii) the lot is included within the Maintenance CFD required by Section 3.20 or other financing mechanism acceptable to the City, to the extent required hereby; and (iii) if and to the extent applicable to such lot, an affordable purchase or rental housing agreement has been recorded on the lot. Termination of this Agreement for any such residential lot as provided for in this section shall not in any way be construed to terminate or modify any assessment district or Mello-Roos Community Facilities District lien affecting such lot at the time of termination.

18. Failure of Performance. In addition to any other remedies provided in this Agreement or by law, in the event DEVELOPER fails to perform one or more of the covenants or conditions of this Agreement, CITY shall have recourse to the security given to guarantee the performance of such acts. CITY may do, or cause to be done, those acts required of DEVELOPER, and shall have recourse against so much of the security as is necessary to discharge the responsibility of DEVELOPER. In the event CITY seeks recourse against a security, CITY shall also have recourse against DEVELOPER for any and all amounts necessary to complete the obligations of DEVELOPER in the event the security is insufficient to pay such amounts. All administrative costs, including reasonable attorney's fees pursuant to Section 66499.4 of the Government Code, incurred by CITY, in addition to the costs of the improvements, shall be a proper charge against the security and DEVELOPER.

19. Integration. This Agreement is an integrated agreement. It supersedes all prior negotiations, representations, or agreements, either written or oral.

20. Modification. This Agreement and each provision contained herein may be waived, amended, supplemented or eliminated only by mutual written agreement of the parties.

21. Notices. Any notices sent to the parties relating to this Agreement shall be sent by first class mail, postage prepaid or delivered to the following addresses:

CITY: Marc Stout, City Engineer
City of Roseville
311 Vernon Street
Roseville, CA 95678

DEVELOPER: BBC Roseville Oaks LLC
130 Diamond Creek Place, #1
Roseville, CA 95747

BUILDER: Larry Gualco, VP
Lennar Homes of California, Inc.
1025 Creekside Ridge Drive, Suite 240
Roseville, CA 95678

Parties may amend their address by giving written notice to the other parties.

22. Severability. If any of the provisions contained in this Agreement are for any reason held invalid or unenforceable, such holding shall not affect the remaining provisions or the validity and enforceability of the Agreement as a whole.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Agreement in duplicate by its City Manager and attestation by its City Clerk under authority of Resolution No. ____, adopted by the Council of the City of Roseville on the ____ day of _____, 20____, and DEVELOPER and BUILDER have caused this Agreement to be executed.

[SIGNATURES ON FOLLOWING PAGE]

CITY OF ROSEVILLE, a
municipal corporation,

BY: _____
DOMINICK CASEY
City Manager

ATTEST:

BY: _____
SONIA OROZCO
City Clerk

APPROVED AS TO FORM:

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUFFICIENCY:

BY: _____
MARC STOUT
City Engineer

DEVELOPER:
BBC Roseville Oaks, LLC, an
Illinois limited liability company

BY: _____
its: _____

and

BY: _____
its: _____

BUILDER:
Lennar Homes of California, Inc., a
California corporation

BY: _____
its: _____

and

BY: _____
its: _____

(NOTARIZATION REQUIRED)

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer

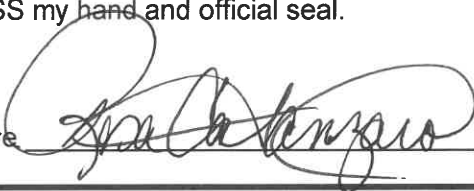
On June 9, 2020 before me, Rosa Catanzaro, Notary Public
(insert name and title of the officer)

personally appeared Stephen Lee Desjardins,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~
subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in
his/her/their authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

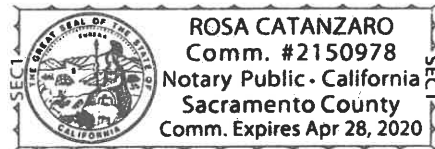
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature



(Seal)



"The notary commission extended pursuant to
Executive Order N-63-20"

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer

On June 9, 2020 before me, Rosa Catanzaro, Notary Public
(insert name and title of the officer)

personally appeared Larry Gualco and Earl Keith,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) ~~is~~ are
subscribed to the within instrument and acknowledged to me that ~~he~~ ~~she~~ they executed the same in
~~his~~ ~~her~~ their authorized capacity(ies), and that by ~~his~~ ~~her~~ their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

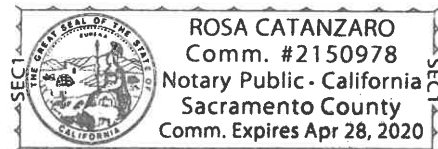
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature



(Seal)



"The notary commission extended pursuant to
Executive Order N-63-20"



COUNCIL COMMUNICATION

CC #: 0847

File #: 0400-04-09-1

Title: Fiddymment Ranch - Phase 2 F-71 Off-Site Infrastructure Project - Notice of Completion

Contact: Darin Crockett 916-751-9196 dcrockett@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 7.14.

RECOMMENDATION TO COUNCIL

Staff recommends that the City Council adopt a resolution accepting Fiddymment Ranch - Phase 2 F-71 Off-Site Infrastructure project, CWJ #190177, as complete and authorizing the City Engineer to execute the Notice of Completion.

BACKGROUND

The Engineering Division has made a final inspection of the above project and has found the roadway infrastructure work complete in accordance with the improvement plans and City specifications.

FISCAL IMPACT

The actions requested as part of this action have no impact to the City's General Fund. Construction costs were paid by the developer.

ENVIRONMENTAL REVIEW

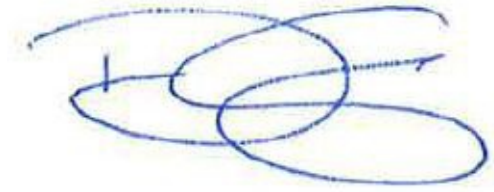
The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378.

Approving a Notice of Completion for the Fiddymment Ranch - Phase 2 F-71 Off-Site Infrastructure project meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Darin Crockett, Construction Inspector

Mike Isom, Development Services Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Exhibit A

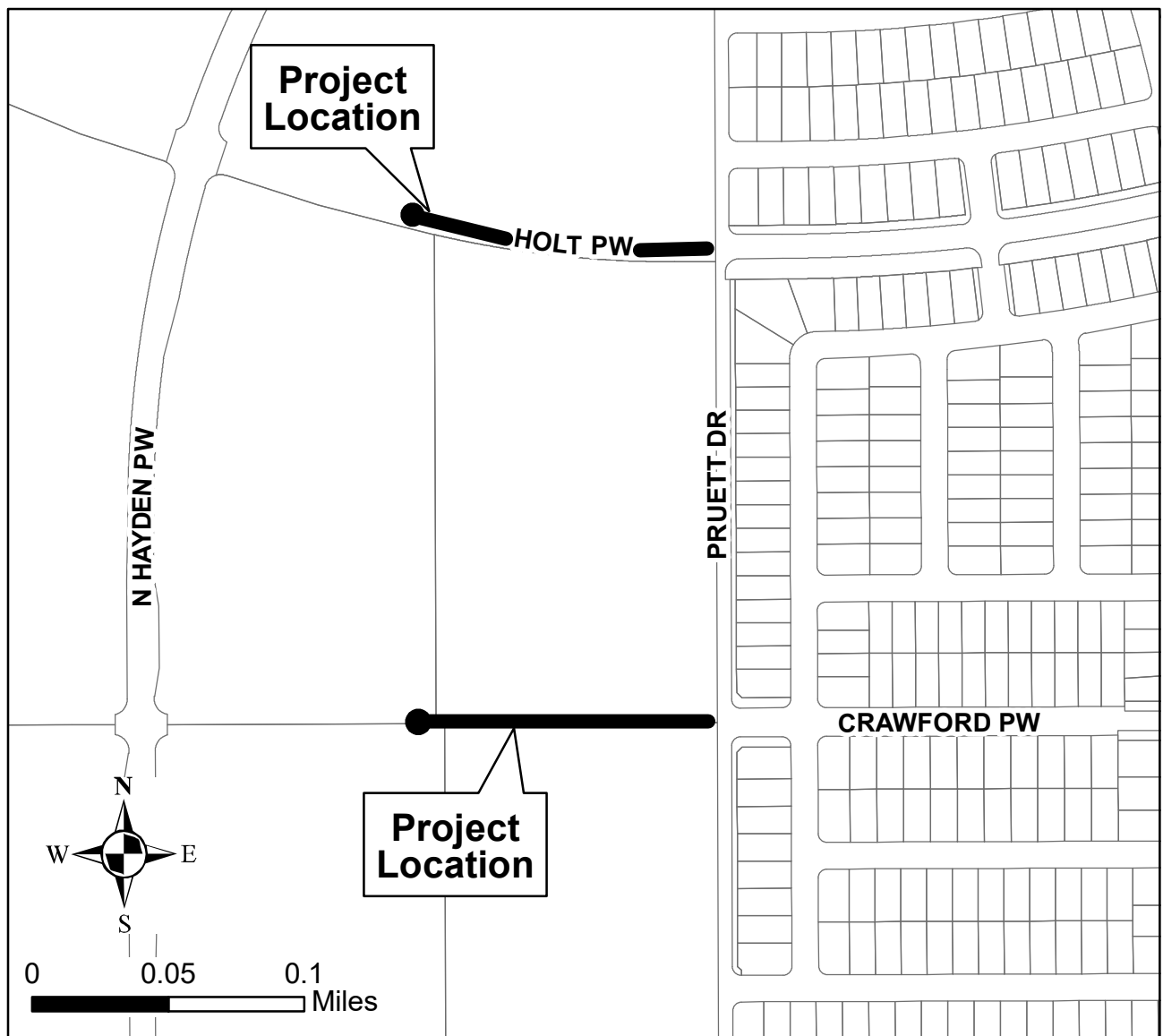
Resolution No. 20-262

NOC

Final Map

EXHIBIT A

City of Roseville Fiddymment Ranch - Phase 2 F-71 Off-Site Infrastructure



RESOLUTION NO. 20-262

RESOLUTION OF THE COUNCIL OF THE CITY OF ROSEVILLE ACCEPTING THE PUBLIC WORK KNOWN AS **Fiddymment Ranch - Phase 2 F-71 Off-Site Infrastructure** PROJECT, APPROVING THE "NOTICE OF COMPLETION", AND AUTHORIZING AND DIRECTING THE CITY ENGINEER TO EXECUTE SAID NOTICE ON BEHALF OF THE CITY OF ROSEVILLE, THEREFORE, AND ACCEPTING A PORTION OF THE DEDICATIONS OFFERED ON THE RECORDED MAP OF THE SUBDIVISION.

BE IT RESOLVED by the Council of the City of Roseville as follows:

1. The "Notice of Completion" on file in the City Clerk's Department relative to that public work known as the **Fiddymment Ranch – Phase 2 F-71 Off-Site Infrastructure** is hereby approved and the public work accepted.
2. A portion of the right-of-way and easements offered for dedication on the final map of **Fiddymment Ranch Phase 3** recorded in Book **EE** of Maps, Page **74**, in the office of the recorder of Placer County, is hereby accepted by the City in part as said dedications relates to the improvement plan set known as **Fiddymment Ranch – Phase 2 F-71 Off-Site Infrastructure**
3. The City Engineer is hereby authorized and directed to execute said Notice on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville, this _____ day of _____, 20____, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

CITY CLERK

RECORDING REQUESTED BY AND WHEN
RECORDED MAIL TO:

CITY CLERK
CITY OF ROSEVILLE
311 VERNON STREET
ROSEVILLE, CA 95678

Exempt from recording fees
Pursuant to Gov't Code §27383

NOTICE OF COMPLETION

NOTICE IS HEREBY GIVEN that the public work of improvement known as the _____ Project was completed and accepted by the City of Roseville on _____. The location is situated in the City of Roseville, County of Placer, State of California and is indicated on the attached map, marked as Exhibit "A" and incorporated herein by this reference. The real property herein described is owned by the City of Roseville, 311 Vernon Street, Roseville CA 95678.

The direct/general contractor on said project was _____

The surety on said project was _____

year.

City of Roseville
Owner

ATTEST:

Sonia Orozco, City Clerk

State of California)
County of Placer)

I, _____, being first duly sworn, depose and say: I am the _____ of the City of Roseville, a municipal corporation in the State of California, owner of the property described in the above Notice. I am duly authorized to make this verification for and on behalf of the City of Roseville. I have read the Notice of Completion and know its contents and the facts stated therein are true.

City of Roseville

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.
--

State of California)
County of Placer)

Subscribed and sworn to (or affirmed) before
me on this _____ day of _____,
20____, _____
proved to me on the basis of satisfactory
evidence to be the person(s) who appeared
before me.

Place Notary Seal and/or Stamp Above

Signature of Notary Public

OWNER'S STATEMENT

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTEREST IN THE REAL PROPERTY INCLUDED WITHIN THE BOUNDARIES OF THIS SUBDIVISION MAP, FINAL MAP OF FIDDYMENT RANCH PHASE 3 LARGE LOT SUBDIVISION AS SHOWN UPON THIS MAP, AND DO HEREBY CONSENT TO THE PREPARATION AND RECORDING OF SAID MAP AND THAT THE CONSENT OF NO OTHER PERSON IS NECESSARY. WE HEREBY OFFER FOR DEDICATION AND DO HEREBY DEDICATE FOR SPECIFIC PURPOSES THE FOLLOWING:

THE REAL PROPERTY DESCRIBED BELOW IS IRREVOCABLY OFFERED IN FEE FOR PUBLIC PURPOSES:

- A. LOT 9 AS A PUBLIC PARK.
- B. AS PUBLIC RIGHT-OF-WAY, THE STRIPS OF LAND SHOWN HEREON AND DESIGNATED "JOD/RW" (IRREVOCABLE OFFER OF DEDICATION OF RIGHT OF WAY).
- C. LOTS 1 AND 5 AS PUBLIC OPEN SPACE.

THE REAL PROPERTY DESCRIBED BELOW IS IRREVOCABLY OFFERED AS AN EASEMENT FOR PUBLIC PURPOSES:

- A. PUBLIC EASEMENTS FOR THE INSTALLATION, CONSTRUCTION AND MAINTENANCE OF, BUT NOT LIMITED TO, WATER, SANITARY SEWER, GAS AND DRAINAGE PIPES; ELECTROLIERS, TRAFFIC CONTROL APPURTENANCES, AND FOR ELECTRIC, TELEVISION, AND TELEPHONE SERVICES, TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO, ON, OVER, UNDER AND ACROSS THE STRIPS OF LAND SHOWN HEREON AND DESIGNATED AS "JOD/PUE" (IRREVOCABLE OFFER OF DEDICATION/PUBLIC UTILITY EASEMENT) AND "JOD/RW" (IRREVOCABLE OFFER OF DEDICATION/RIGHT OF WAY).
- B. PUBLIC EASEMENT FOR ACCESS, CONSTRUCTION, AND MAINTENANCE OF TRAIL FACILITIES ON, OVER, AND ACROSS THAT 50 FOOT STRIP OF LAND SHOWN HEREON AND DESIGNATED "TRAIL ESMT" (PUBLIC TRAIL EASEMENT).
- C. PUBLIC EASEMENT FOR INSTALLATION AND MAINTENANCE OF A BUS SHELTER TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER AND ACROSS THOSE STRIPS OF LAND SHOWN HEREON AND DESIGNATED "BUS SHELTER EASEMENT".
- D. PUBLIC EASEMENT FOR PEDESTRIAN ACCESS ACROSS THOSE STRIPS OF LAND SHOWN HEREON AND DESIGNATED "PE" (PEDESTRIAN EASEMENT).

THE REAL PROPERTY BELOW IS BEING DEDICATED AS AN EASEMENT FOR PUBLIC PURPOSES:

- A. PUBLIC EASEMENT FOR THE INSTALLATION AND MAINTENANCE OF SANITARY SEWER PIPES AND ALL APPURTENANCES THERETO ON, OVER, UNDER, AND ACROSS THAT STRIP OF LAND SHOWN HEREON AND DESIGNATED AS "SSE" (SANITARY SEWER EASEMENT).

THE REAL PROPERTY DESCRIBED BELOW IS RESERVED FOR PUBLIC PURPOSES:

- A. LOT 8 IS HEREBY RESERVED TO BE DEDICATED IN FEE IN THE FUTURE AS A PUBLIC SCHOOL SITE.

ATC REALTY ONE, LLC
A DELAWARE LIMITED LIABILITY COMPANY

BY: David L. Ash
ITS: SENIOR VICE PRESIDENT

FINAL MAP OF
FIDDYMENT RANCH PHASE 3

LARGE LOT SUBDIVISION
SUBDIVISION NO. PL-0364

BEING THE DESIGNATED REMAINDER AND LOT 19 OF THAT CERTAIN FINAL MAP ENTITLED "FIDDYMENT RANCH PHASE 2A, FILED IN BOOK DD OF MAPS, AT PAGE 88 OF O.R.P.C. AND SITUATE IN SECTIONS 13 AND 24, T11N., R5E., M.D.M. CITY OF ROSEVILLE COUNTY OF PLACER STATE OF CALIFORNIA

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C ST., 808, 100-8 TEL 916.341.7760
SACRAMENTO, CA 95816 FAX 916.341.7767

SEPTEMBER 2019

Sheet 1 of 10
1027.152

CITY ENGINEER'S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS FINAL MAP OF FIDDYMENT RANCH PHASE 3 LARGE LOT SUBDIVISION AND FIND IT TO BE SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS THEREOF; THAT ALL PROVISIONS OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES HAVE BEEN COMPLIED WITH.

Marc Stout 9/5/19
CITY ENGINEER, CITY OF ROSEVILLE
R.C.E. #69879 EXPIRATION DATE 09/30/2020

I HEREBY STATE THAT I AM SATISFIED THAT THIS FINAL MAP OF FIDDYMENT RANCH PHASE 3 LARGE LOT SUBDIVISION IS TECHNICALLY CORRECT.

FOR MARC STOUT, CITY ENGINEER, CITY OF ROSEVILLE

Timothy G. Blum
TIMOTHY G. BLUM, P.L.S. 8278
EXPIRATION DATE: 12/31/2019

9/9/19
DATE



NOTARY'S ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

San Francisco
STATE OF CALIFORNIA) SS
COUNTY OF San Francisco

ON 08 DAY OF August, 2019 BEFORE ME, Auxiliadora Ros
A NOTARY PUBLIC PERSONALLY APPEARED

WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/they EXECUTED THE SAME IN HIS/HER/their AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/their SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL: Auxiliadora Ros
PRINTED NAME: Auxiliadora Ros

MY PRINCIPLE PLACE OF BUSINESS IS IN THE
COUNTY OF: San Francisco

MY COMMISSION EXPIRES: March 25, 2021

MY COMMISSION No.: 4188278

CITY CLERK'S STATEMENT

I HEREBY STATE THAT THE CITY COUNCIL, CITY OF ROSEVILLE HAS APPROVED THIS FINAL MAP OF FIDDYMENT RANCH PHASE 3 LARGE LOT SUBDIVISION AND HAS ACCEPTED ON BEHALF OF THE PUBLIC THE SANITARY SEWER EASEMENT OFFERED HEREON, BUT HAS REJECTED AT THIS TIME, BUT RESERVES THE RIGHT TO ACCEPT AT A LATER DATE, ON BEHALF OF THE PUBLIC, ALL IRREVOCABLE OFFERS OF LANDS, RIGHTS-OF-WAY AND EASEMENTS OFFERED HEREON, IN ACCORDANCE WITH THE TERMS OF THOSE OFFERS AND HAS APPROVED THE ABANDONMENT OF THE IRREVOCABLE OFFERS OF DEDICATION FOR THE RIGHTS-OF-WAY AND PUBLIC UTILITY EASEMENTS LISTED WITHIN NOTE 5 ON SHEET 2.

09/9/19
DATE

CITY CLERK, CITY OF ROSEVILLE
BY: [Signature]
ASSISTANT CITY CLERK

RECORDER'S STATEMENT

FILED THIS 8th DAY OF November, 2019, AT 9:44 A.M.
IN BOOK EE OF MAPS, AT PAGE 74 AT THE
REQUEST OF WOOD RODGERS, INC.

FEES: \$ 110.00

DOCUMENT NO.: 2019-009384

BY: Ryan Ronco
RYAN RONCO
COUNTY RECORDER
COUNTY OF PLACER

BY: [Signature]
DEPUTY RECORDER

SURVEYOR'S STATEMENT

THIS FINAL MAP OF FIDDYMENT RANCH PHASE 3 LARGE LOT SUBDIVISION WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF ATC REALTY ONE, LLC, A DELAWARE LIMITED LIABILITY COMPANY, IN MAY 2019. I HEREBY STATE THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE CONDITIONALLY APPROVED TENTATIVE MAP; THAT ALL THE MONUMENTS SHOWN HEREON ARE OF THE CHARACTER AND WILL OCCUPY THE POSITIONS AS INDICATED, OR THAT THEY WILL BE SET BY SEPTEMBER 31, 2021 AND THAT THE MONUMENTS ARE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED.

WOOD RODGERS, INC.



DENNIS L. BARBER
P.L.S. 8067 EXP. 12/31/2019

08/27/19
DATE

REFERENCES:

- | | |
|------------------|---|
| (1) BB MAPS 24 | FINAL MAP OF FIDDYMENT RANCH PHASE 2 - LARGE LOT SUBDIVISION |
| (2) DD MAPS 9 | FINAL MAP OF FIDDYMENT RANCH PHASE 2 - VILLAGES F-9 & F-19 |
| (3) DD MAPS 73 | FINAL MAP OF FIDDYMENT RANCH PHASE 2 - VILLAGE F-13B1 |
| (4) 2015-0081570 | GRANT DEED TO CITY OF ROSEVILLE |
| (5) DD MAPS 88 | FINAL MAP OF FIDDYMENT RANCH PHASE 2A - LARGE LOT SUBDIVISION |

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE NORTH LINE OF SECTION 13, T.11N., R.5E., M.D.M. SAID BEARING IS TAKEN AS NORTH 89°26'37" EAST PER THE FINAL MAP OF FIDDYMENT RANCH PHASE 2 - LARGE LOT SUBDIVISION, FILED IN BOOK 88 OF MAPS, AT PAGE 24, O.R.P.C.

LEGEND

- | | |
|--------------|--|
| | FOUND 5/8" REBAR WITH CAP STAMPED "LS 6815" PER DD MAPS 9 |
| | FOUND 5/8" REBAR WITH CAP STAMPED "LS 8067" PER DD MAPS 73 |
| | FOUND MONUMENT AS DESCRIBED |
| | FOUND SECTION CORNER AS DESCRIBED |
| | FOUND QUARTER CORNER AS DESCRIBED |
| | FOUND 5/8" REBAR WITH CAP STAMPED "LS 8067" PER DD MAPS 88 |
| | BRASS DISK STAMPED "LS 6046" IN MONUMENT WELL TO BE SET PER BB MAPS 24 |
| | FOUND BRASS DISK STAMPED "LS 6046" IN MONUMENT WELL PER AA MAPS 10 |
| | FOUND BRASS DISK STAMPED "LS 8067" IN MONUMENT WELL PER DD MAPS 73 |
| | FOUND BRASS DISK STAMPED "LS 8067" IN MONUMENT WELL |
| | SET 5/8" REBAR WITH CAP STAMPED "LS 8067" |
| (CL) | CENTERLINE DIMENSION |
| IOD | IRREVOCABLE OFFER OF DEDICATION |
| N.A.P.O.T.S. | NOT A PART OF THIS SUBDIVISION |
| (OA) | OVERALL DIMENSION |
| O.R.P.C. | OFFICIAL RECORDS OF PLACER COUNTY |
| PE | PEDESTRIAN EASEMENT |
| PUE | PUBLIC UTILITY EASEMENT |
| (R) | RADIAL BEARING |
| REF | INDICATES REFERENCE NUMBER |
| RW | RIGHT-OF-WAY |
| SSE | SANITARY SEWER EASEMENT |

NOTES

- ALL CURVES DIMENSIONED WITH RADIUS, DELTA, ARC LENGTH, CHORD BEARING, AND CHORD LENGTH. CHORD LENGTHS MAY CONTAIN SOME ROUNDING ERROR.
- ALL DISTANCES SHOWN HEREON ARE EXPRESSED IN FEET AND DECIMALS THEREOF.
- DUE TO ROUNDING THE SUM OF THE INDIVIDUAL DIMENSIONS MAY NOT EQUAL THE OVERALL DIMENSION.
- TOTAL AREA FOR THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 3 LARGE LOT SUBDIVISION" SUBDIVISION IS 377.88± ACRES, CONSISTING OF 6 DEVELOPMENT LOTS, 1 PUBLIC PARK LOT, 1 SCHOOL SITE LOT, AND 2 OPEN SPACE LOTS.
- PURSUANT TO SECTION 86434(g) OF THE GOVERNMENT CODE, THE FOLLOWING PUBLIC IRREVOCABLE OFFERS OF DEDICATION/RIGHTS OF WAY (IOD/RW) AND PUBLIC UTILITY EASEMENTS ARE HEREBY ABANDONED:
 - THOSE PORTIONS OF THE IOD/RW FOR PRUETT DRIVE AS DEPICTED ON THE MAP ENTITLED "FIDDYMENT RANCH PHASE 2A - LARGE LOT SUBDIVISION", FILED IN BOOK DD OF MAPS, AT PAGE 88, O.R.P.C., WHICH LIE WITHIN THE BOUNDARY OF THIS MAP THAT ARE NOT SHOWN HEREON.
 - THOSE PORTIONS OF THE RIGHT-OF-WAY FOR HAYDEN PARKWAY AND THE PUBLIC UTILITY EASEMENT ADJACENT THERETO AS DEPICTED ON THE MAP ENTITLED "FIDDYMENT PHASE 2 - LARGE LOT MAP SUBDIVISION", FILED IN BOOK BB OF MAPS, AT PAGE 24, O.R.P.C., WHICH LIE WITHIN THE BOUNDARY OF THIS MAP THAT ARE NOT SHOWN HEREON.
- THE FOLLOWING TABLE IS TO RELATE THE LOT NUMBERS SHOWN HEREON TO THAT OF THE APPROVED TENTATIVE MAP AND THE WEST ROSEVILLE SPECIFIC PLAN:

LOT NUMBERING		
FINAL MAP	TENTATIVE MAP	WEST ROSEVILLE SPECIFIC PLAN
1	F-80	F-80
2	F-10A-1/F-10A-2/F-10B-1/F-10B-2/F-10C-1/F-10C-2/F-94	F-10A/F-10B/F-10C/F-94
3	F-6A-F-6A-2/F-6B/F-6D	F-6A-F-6B/F-6D
4	F-6C-1/F-6C-2	F-6C
5	F-85	F-85
6	F-8A	F-8A
7	F-8B	F-8B
8	F-71	F-71
9	F-51	F-51
10	F-11B	F-11B

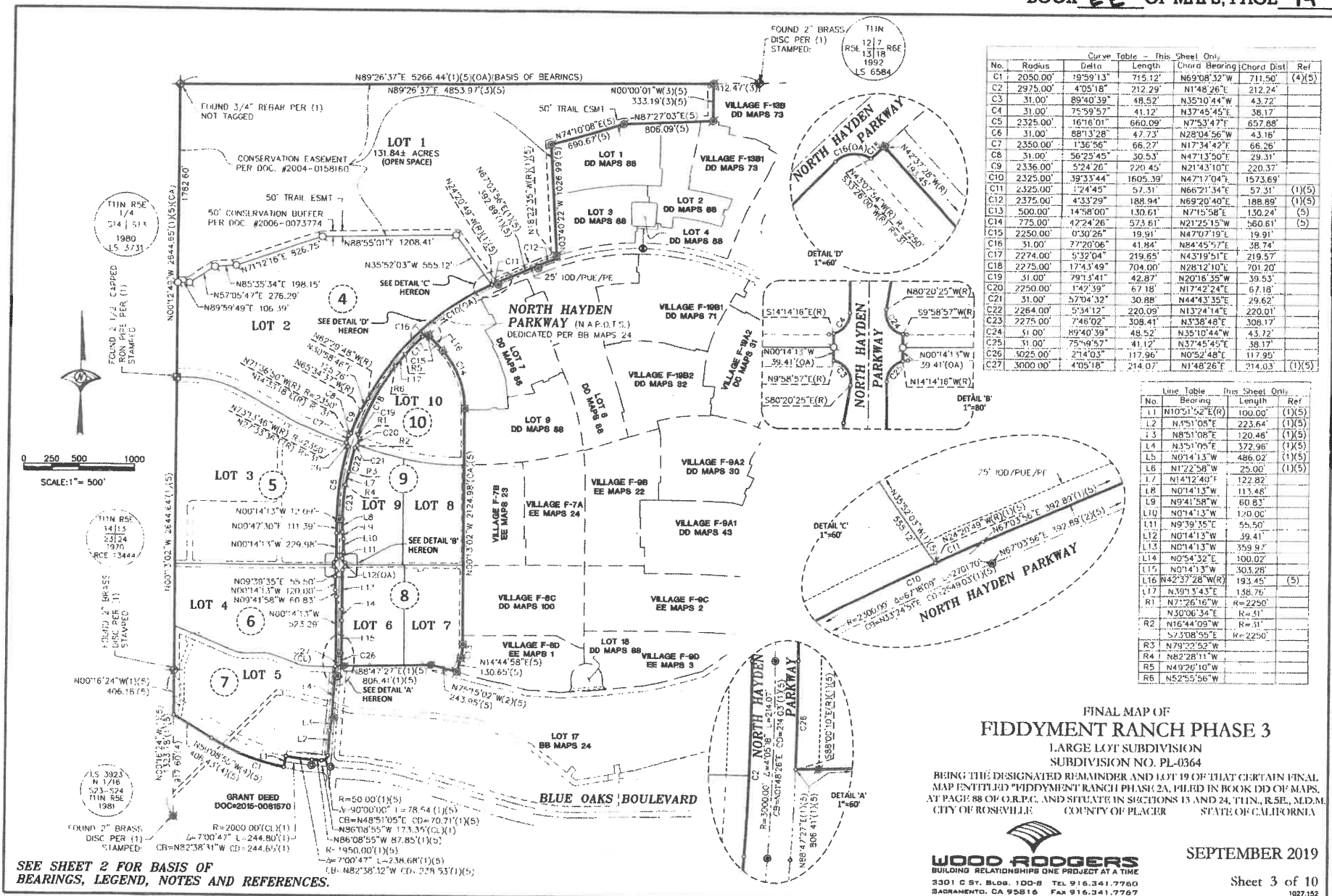
FINAL MAP OF
FIDDYMENT RANCH PHASE 3
 LARGE LOT SUBDIVISION
 SUBDIVISION NO. PL-0364

BEING THE DESIGNATED REMAINDER AND LOT 19 OF THAT CERTAIN FINAL MAP ENTITLED "FIDDYMENT RANCH PHASE 2A, FILED IN BOOK DD OF MAPS, AT PAGE 88 OF O.R.P.C. AND SITUATE IN SECTIONS 13 AND 24, T.11N., R.5E., M.D.M. CITY OF ROSEVILLE COUNTY OF PLACER STATE OF CALIFORNIA

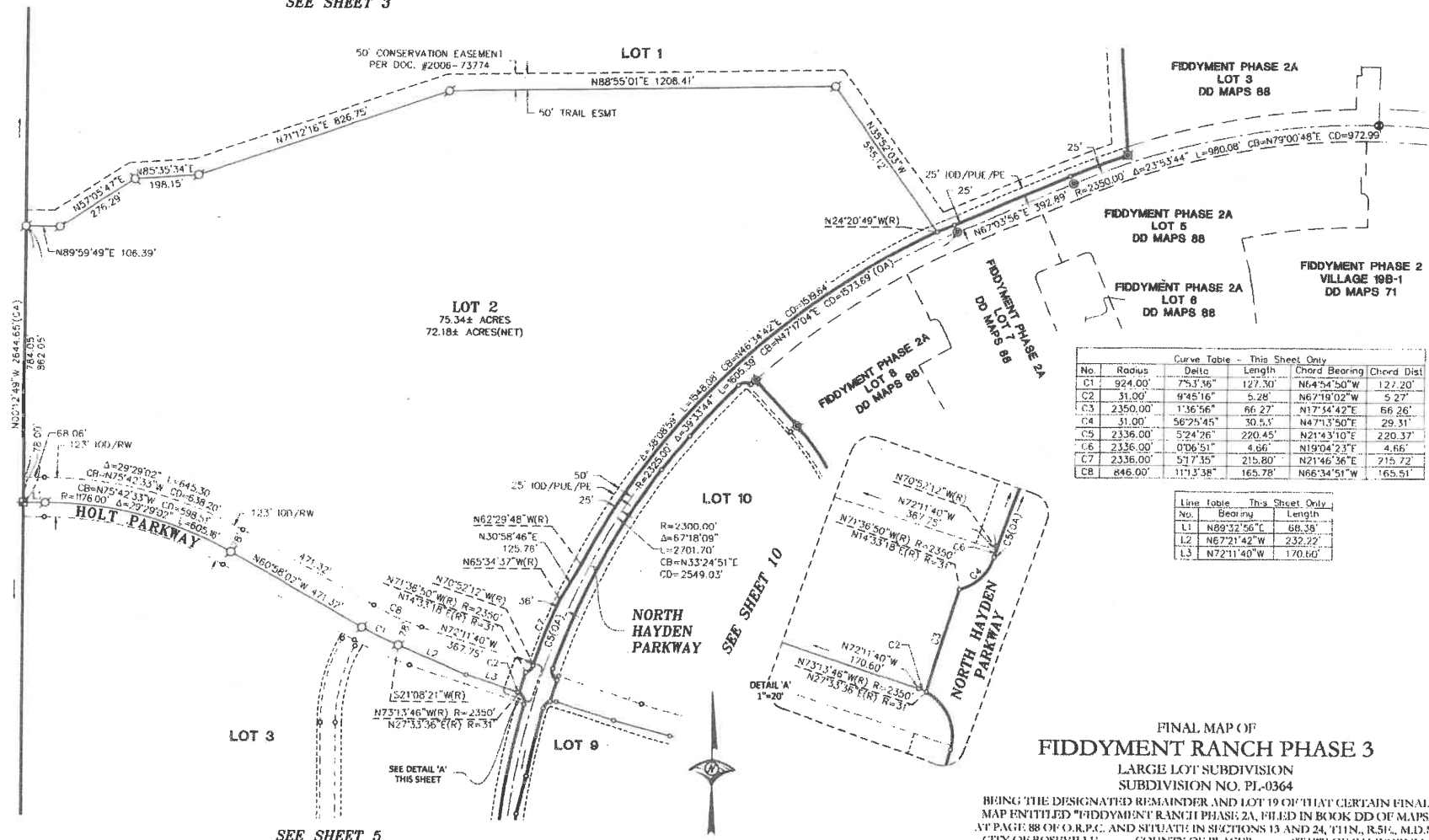
WOOD RODGERS
 BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
 3301 O St., Bldg. 100-B TEL 916.341.7760
 SACRAMENTO, CA 95816 FAX 916.341.7767

SEPTEMBER 2019

Sheet 2 of 10
 1027152



SEE SHEET 3



Curve Table - This Sheet Only					
No.	Radius	Delta	Length	Chord Bearing	Chord Dist
C1	924.00'	75°3'36"	127.30'	N64°54'50"W	127.20'
C2	31.00'	9°45'56"	5.28'	N67°19'02"W	5.27'
C3	2350.00'	1°36'56"	66.27'	N17°54'42"E	66.26'
C4	31.00'	56°25'45"	30.53'	N47°13'50"E	29.31'
C5	2336.00'	5°24'26"	220.45'	N21°43'10"E	220.37'
C6	2336.00'	0°06'51"	4.66'	N19°04'23"E	4.66'
C7	2336.00'	5°17'35"	215.80'	N21°46'36"E	215.72'
C8	846.00'	11°13'38"	165.78'	N66°34'51"W	165.51'

Line Table - This Sheet Only		
No.	Bearing	Length
L1	N89°32'56"E	68.38'
L2	N67°21'42"W	232.22'
L3	N72°11'40"W	170.60'

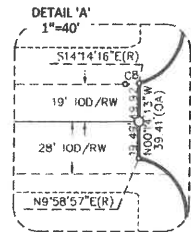
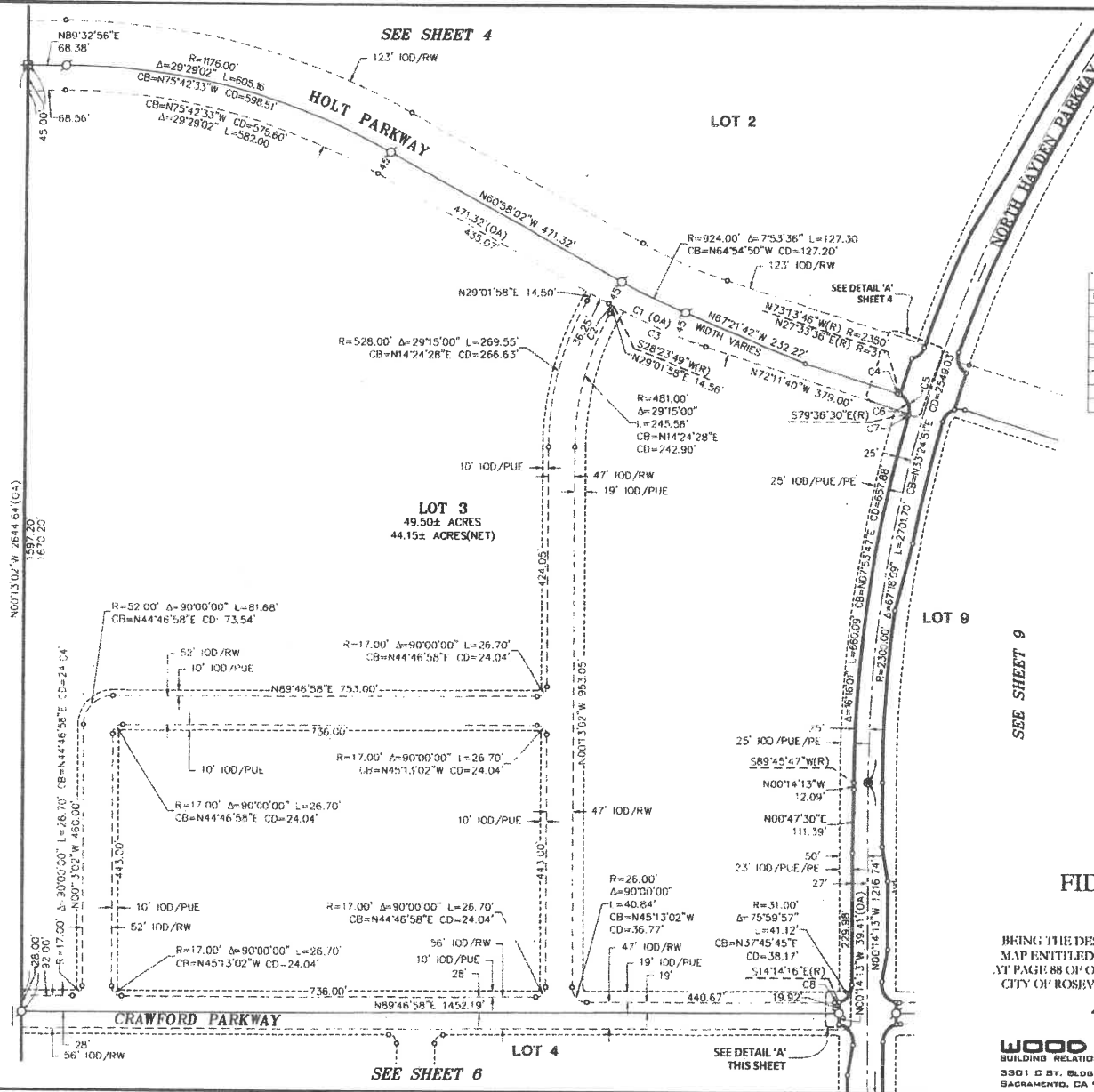
**FINAL MAP OF
FIDDYMENT RANCH PHASE 3
LARGE LOT SUBDIVISION
SUBDIVISION NO. PL-0364**

BEING THE DESIGNATED REMAINDER AND LOT 19 OF THAT CERTAIN FINAL MAP ENTITLED "FIDDYMENT RANCH PHASE 2A, FILED IN BOOK DD OF MAPS, AT PAGE 88 OF O.R.P.C. AND SITUATE IN SECTIONS 13 AND 24, T11N., R5E., M.D.M. CITY OF ROSHVILLE COUNTY OF PLACER STATE OF CALIFORNIA

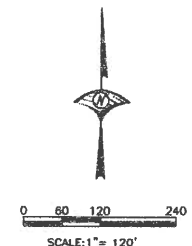
WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
3301 C ST. BLDG. 100-B TEL 916.341.7760
SACRAMENTO, CA 95816 FAX 916.341.7767

SEPTEMBER 2019

Sheet 4 of 10
1027.192



Curve Table - This Sheet Only					
No.	Radius	Delta	Length	Chord Bearing	Chord Dist
C1	969.00'	11°13'38"	189.86'	N66°34'51"W	189.58'
C2	969.00'	0°38'09"	10.75'	N61°17'06"W	10.75'
C3	969.00'	10°35'30"	179.13'	N66°53'55"W	178.87'
C4	31.00'	9°45'13"	5.28'	N67°19'01"W	5.27'
C5	31.00'	78°28'12"	42.46'	N23°12'18"W	39.22'
C6	31.00'	72°49'55"	39.41'	N28°01'27"W	36.81'
C7	31.00'	5°38'17"	3.05'	N13°12'39"E	3.05'
C8	31.00'	14°01'14"	7.59'	N82°46'21"E	7.57'



FINAL MAP OF
FIDDYMENT RANCH PHASE 3
 LARGE LOT SUBDIVISION
 SUBDIVISION NO. PL-0364

BEING THE DESIGNATED REMAINDER AND LOT 19 OF THAT CERTAIN FINAL MAP ENTITLED "FIDDYMENT RANCH PHASE 2A," FILED IN BOOK DD OF MAPS, AT PAGE 88 OF O.R.P.C. AND SITUATE IN SECTIONS 13 AND 24, T11N, R5E, M.D.M. CITY OF ROSEVILLE COUNTY OF PLACER STATE OF CALIFORNIA

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SEPTEMBER 2019
 Sheet 5 of 10
 1027.152

SEE SHEET 5

LOT 3

CRAWFORD PARKWAY

LOT 4
27.10± ACRES
26.17± ACRES (NET)

LOT 5

SEE SHEET 7

LOT 6

LOT 6

SEE SHEET 8

Curve Table - This Sheet Only					
No.	Radius	Delta	Length	Chord Bearing	Chord Dist.
C1	276.00'	22°43'36"	109.48'	N80°11'44"W	108.76'
C2	276.00'	21°16'07"	102.45'	N79°27'59"W	101.87'
C3	276.00'	1°27'29"	7.02'	N89°10'13"E	7.02'
C4	224.00'	21°57'01"	85.82'	N80°35'01"W	85.29'
C5	276.00'	19°11'52"	92.48'	N79°12'27"W	92.05'
C6	3000.00'	4°05'18"	214.07'	N1°48'26"E	214.03'
C7	31.00'	89°40'39"	48.52'	N35°10'44"W	43.72'
C8	31.00'	34°35'30"	18.72'	N62°43'18"W	18.43'
C9	31.00'	55°05'09"	29.80'	N17°52'59"W	28.67'
C10	2975.00'	2°24'28"	125.02'	N0°58'01"E	125.01'

Line Table - This Sheet Only		
No.	Bearing	Length
L1	N67°13'35"E	14.94'
L2	N67°12'28"W	15.12'
L3	N49°13'48"E	28.23'
L4	N40°46'12"W	20.00'
L5	N49°13'48"E	18.29'
L6	N67°12'28"W	31.78'
L7	N37°52'25"W	19.37'
L8	N68°49'56"W	27.57'
L9	N22°17'51"E	32.20'
L10	N67°42'29"W	20.00'
L11	N22°17'51"E	31.81'
L12	N68°52'41"W	54.06'
L13	N81°14'31"W	109.52'



0 40 80 160
SCALE: 1" = 80'

FINAL MAP OF
FIDDYMENT RANCH PHASE 3
LARGE LOT SUBDIVISION
SUBDIVISION NO. PL-0364

BEING THE DESIGNATED REMAINDER AND LOT 19 OF THAT CERTAIN FINAL MAP ENTITLED "FIDDYMENT RANCH PHASE 2A, FILED IN BOOK DD OF MAPS, AT PAGE 88 OF O.R.P.C. AND SITUATE IN SECTIONS 13 AND 24, T11N., R5E., M.D.M. CITY OF ROSEVILLE, COUNTY OF PLACER, STATE OF CALIFORNIA

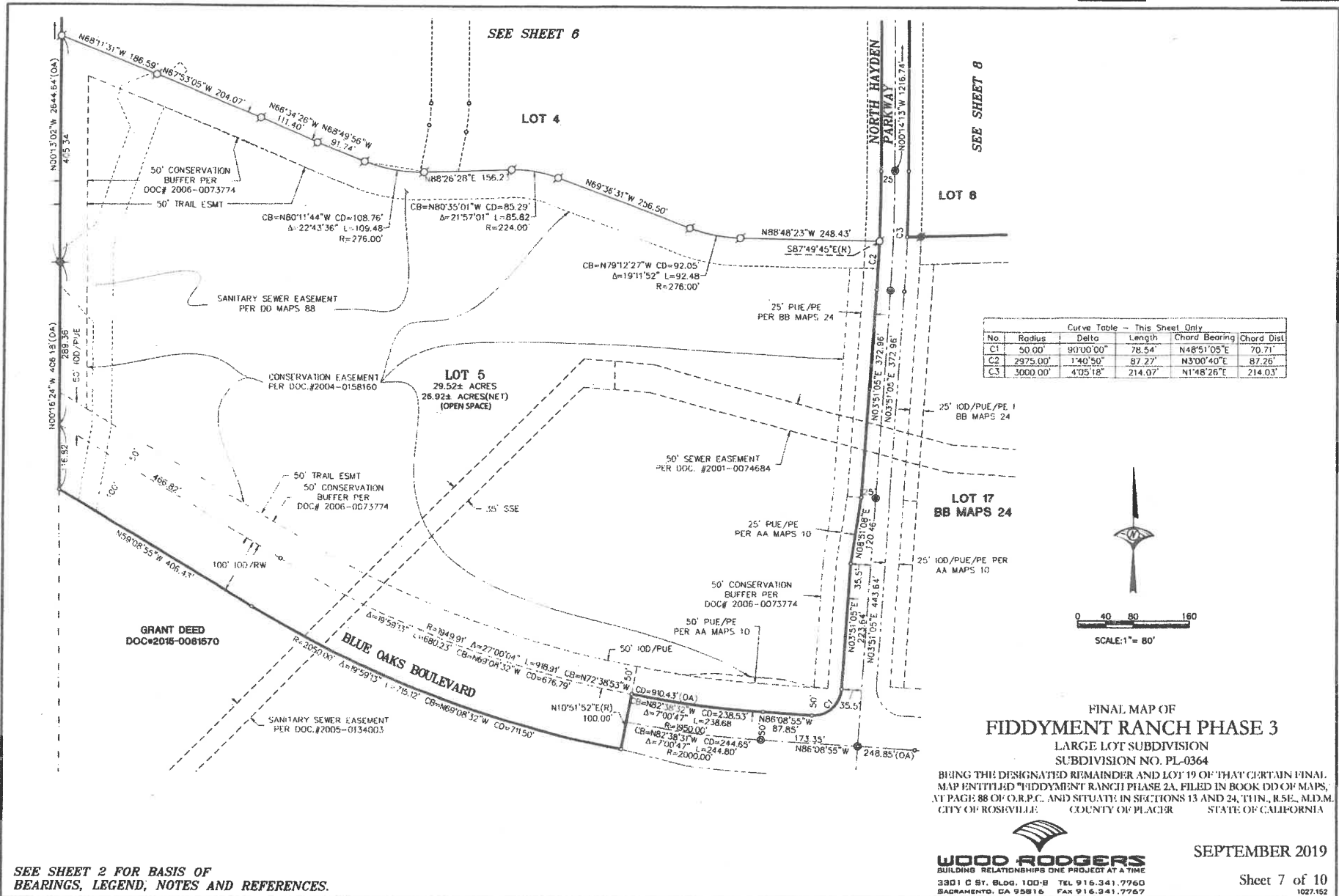
SEE SHEET 2 FOR BASIS OF
BEARINGS, LEGEND, NOTES AND REFERENCES.

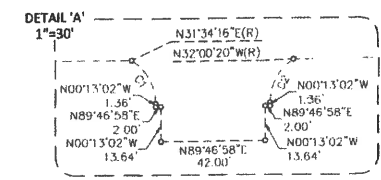
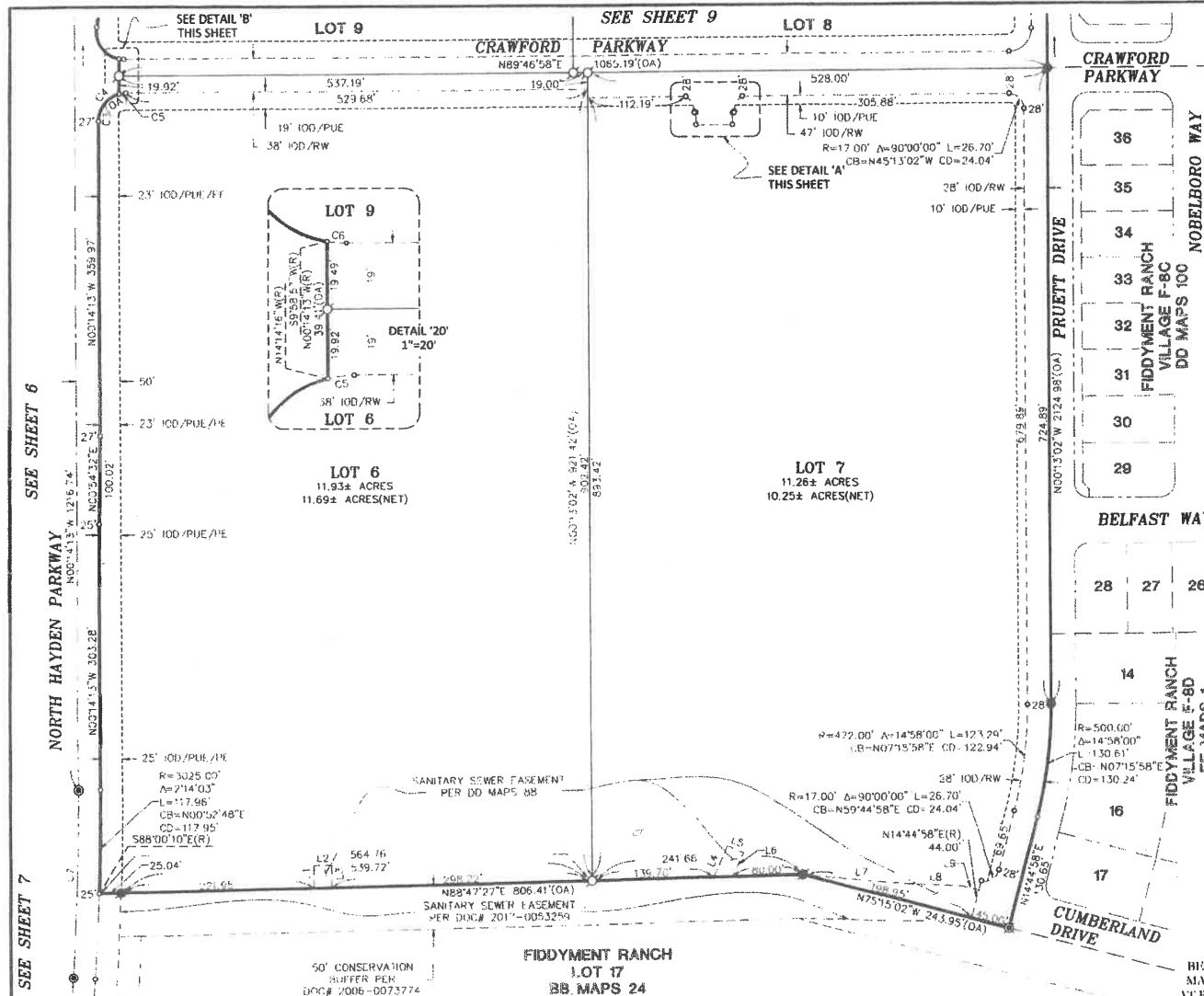
WOOD RODGERS
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SACRAMENTO, CA 95816 FAX 916.341.7767

SEPTEMBER 2019

Sheet 6 of 10

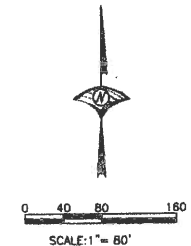
1027.152





Curve Table - This Sheet Only					
No.	Radius	Delta	Length	Chord Bearing	Chord Dist.
C1	20.00'	58°12'42"	20.32'	N29°19'23"W	19.48'
C2	20.00'	58°12'42"	20.32'	N28°55'19"E	19.46'
C3	31.00'	90°01'11"	48.71'	N44°46'22"E	43.85'
C4	31.00'	75°59'57"	41.12'	N37°45'45"E	36.17'
C5	31.00'	14°01'14"	7.59'	N82°46'21"E	7.57'
C6	31.00'	10°11'59"	5.52'	N85°07'03"W	5.51'
C7	3000.00'	4°05'18"	214.07'	N1°48'26"E	214.03'

Line Table - This Sheet Only		
No.	Bearing	Length
L1	N0°42'01"W	26.03'
L2	N89°17'59"E	20.00'
L3	N0°19'06"E	25.86'
L4	N23°07'50"E	59.14'
L5	N66°52'10"W	20.00'
L6	N23°07'50"E	30.09'
L7	N84°59'38"W	120.94'
L8	N84°11'02"W	80.73'
L9	N75°15'00"W	19.46'



FINAL MAP OF
FIDDYMMENT RANCH PHASE 3
 LARGE LOT SUBDIVISION
 SUBDIVISION NO. PL-0364
 BEING THE DESIGNATED REMAINDER AND LOT 19 OF THAT CERTAIN FINAL
 MAP ENTITLED "FIDDYMMENT RANCH PHASE 2A, FILED IN BOOK DD OF MAPS,
 AT PAGE 88 OF O.R.P.C. AND SITUATE IN SECTIONS 13 AND 24, T11N., R54E., M.D.M.
 CITY OF ROSEVILLE COUNTY OF PLACER STATE OF CALIFORNIA

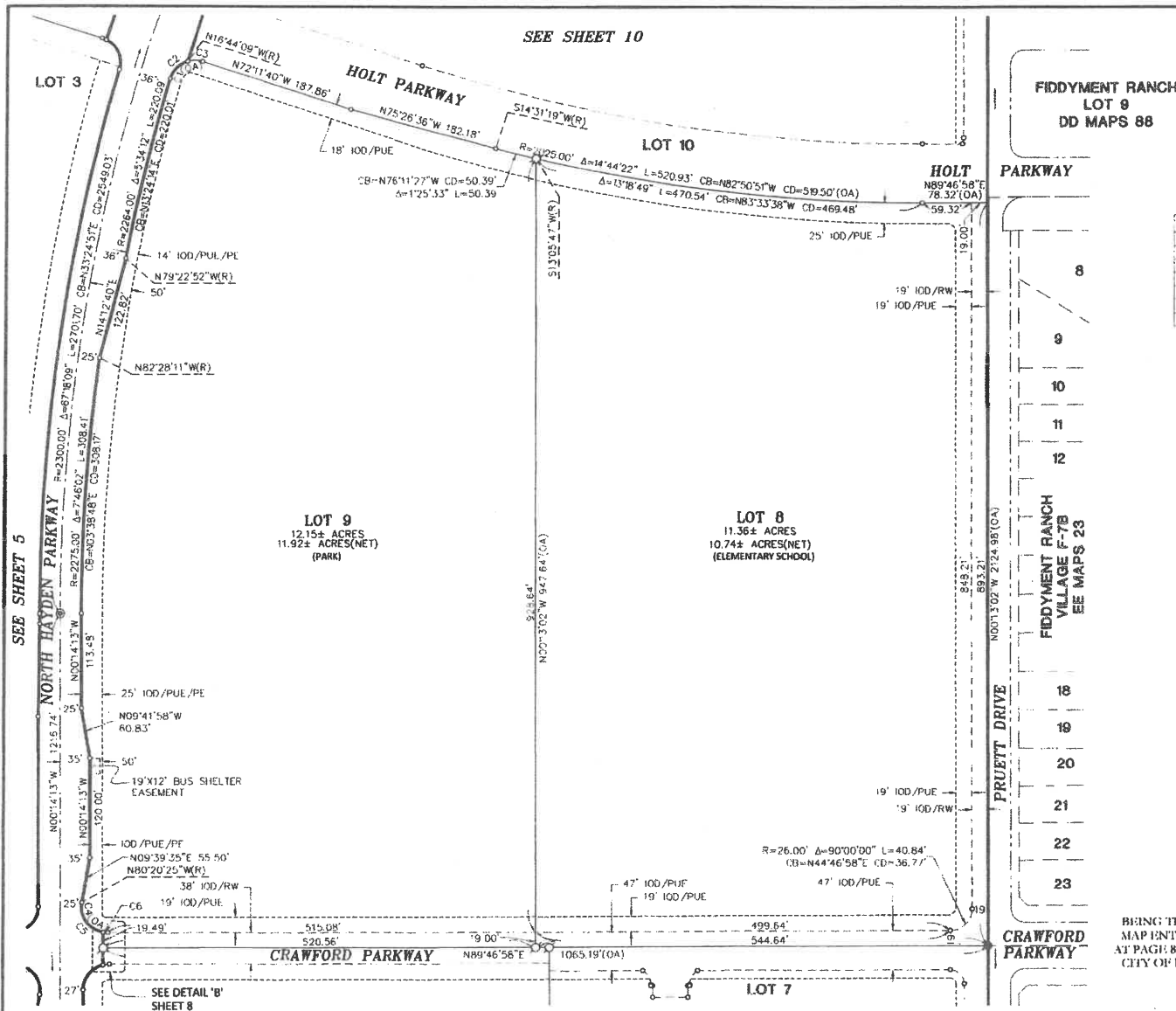
WOOD RODGERS
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 3301 C ST., Bldg. 100-B TEL 916.341.7760
 SACRAMENTO, CA 95816 FAX 916.341.7767

SEPTEMBER 2019

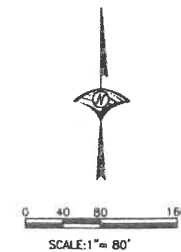
Sheet 8 of 10
 1027152

SEE SHEET 6
 NORTH HAYDEN PARKWAY
 SEE SHEET 7

SEE SHEET 2 FOR BASIS OF
 BEARINGS, LEGEND, NOTES AND REFERENCES.



No.	Radius	Delta	Length	Chord Bearing	Chord Dist
C1	31.00'	91°37'00"	49.57'	N61°59'50"E	44.45'
C2	31.00'	57°04'32"	30.88'	N44°43'35"E	29.62'
C3	31.00'	34°32'28"	18.69'	N89°27'54"W	18.41'
C4	31.00'	99°52'38"	54.04'	N40°16'43"W	47.45'
C5	31.00'	89°40'39"	48.52'	N35°10'44"W	43.72'
C6	31.00'	101°11'59"	55.51'	N85°07'03"W	5.51'



FINAL MAP OF
FIDDYMENT RANCH PHASE 3
LARGE LOT SUBDIVISION
SUBDIVISION NO. PL-0364

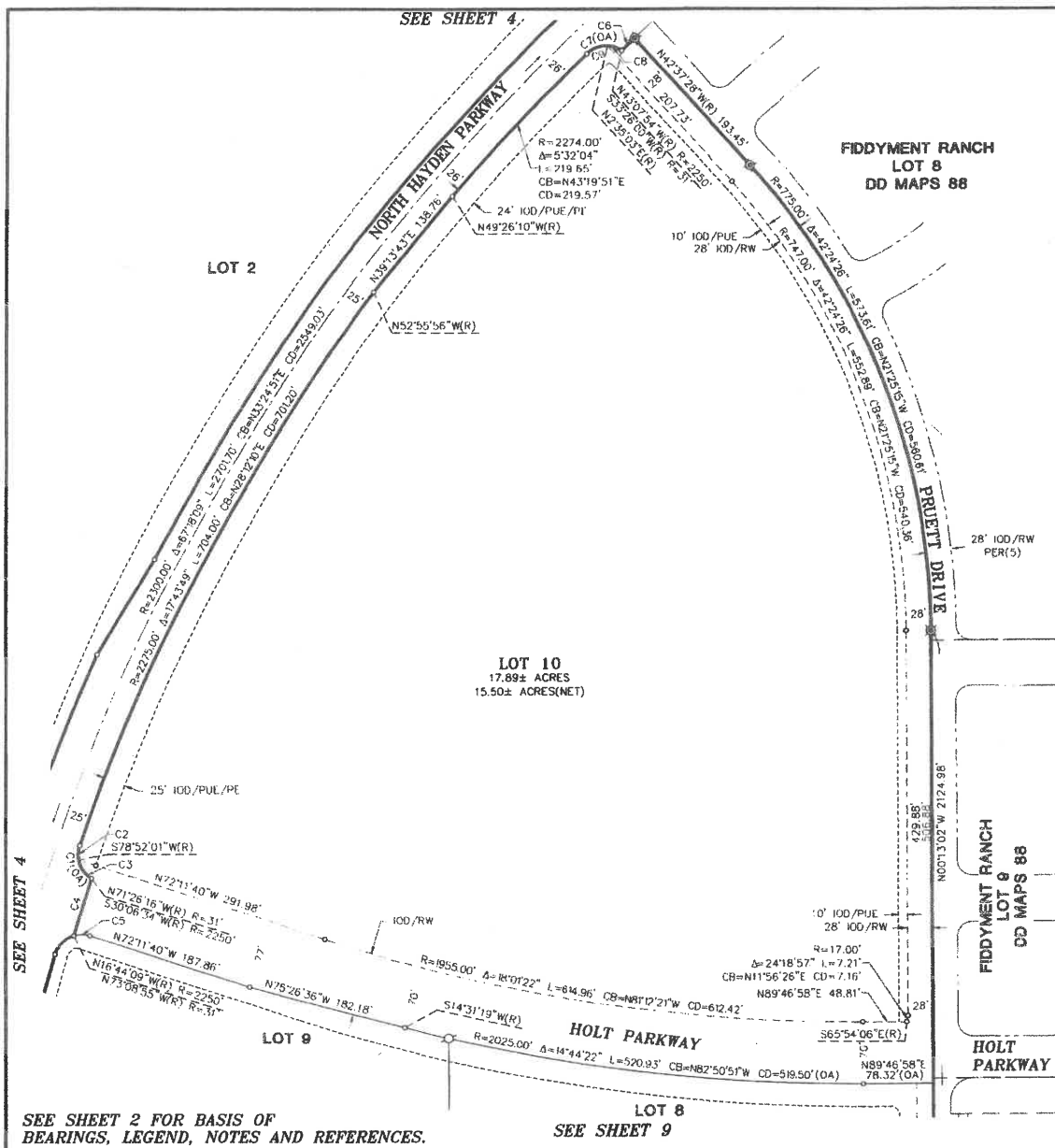
BEING THE DESIGNATED REMAINDER AND LOT 19 OF THAT CERTAIN FINAL MAP ENTITLED "HIDDYMENT RANCH PHASE 2A, FILED IN BOOK DD OF MAPS, AT PAGE 88 OF O.R.P.C. AND SITUATE IN SECTIONS 13 AND 24, T11N., R5E., M.D.M. CITY OF ROSEVILLE COUNTY OF PLACER STATE OF CALIFORNIA



WOOD ROGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
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SACRAMENTO, CA 95816 FAX 916.341.7767

SEPTEMBER 2019

Sheet 9 of 10
1027.152



Curve Table - This Sheet Only					
No.	Radius	Delta	Length	Chord Bearing	Chord Dist
C1	31.00'	79°13'41"	42.87'	N20°16'35"W	39.53'
C2	31.00'	30°28'14"	16.49'	N4°06'08"E	16.29'
C3	31.00'	48°45'27"	26.38'	N35°30'42"W	25.59'
C4	2250.00'	1°42'39"	67.18'	N17°42'24"E	67.18'
C5	31.00'	34°32'28"	18.69'	N89°27'54"W	18.41'
C6	2250.00'	0°30'26"	19.91'	N47°07'19"E	19.91'
C7	31.00'	77°20'06"	41.84'	N84°45'57"E	38.74'
C8	31.00'	30°50'57"	16.69'	N71°58'29"W	16.49'
C9	31.00'	46°29'10"	25.15'	N69°20'28"E	24.47'



0 40 80 160
SCALE: 1" = 80'

FINAL MAP OF
FIDDYMENT RANCH PHASE 3
LARGE LOT SUBDIVISION
SUBDIVISION NO. PL-0364

BEING THE DESIGNATED REMAINDER AND LOT 19 OF THAT CERTAIN FINAL MAP ENTITLED "FIDDYMENT RANCH PHASE 2A, FILED IN BOOK DD OF MAPS, AT PAGE 88 OF O.R.P.C. AND SITUATE IN SECTIONS 13 AND 24, T11N, R5E, M.D.M. CITY OF ROSEVILLE COUNTY OF PLACER STATE OF CALIFORNIA

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
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SACRAMENTO, CA 95816 FAX 916.341.7767

SEPTEMBER 2019

Sheet 10 of 10

1027.152



COUNCIL COMMUNICATION

CC #: 0846

File #: 0114

Title: Federal Advocacy Services - Professional Services Agreement Amendment

Contact: Mark Wolinski 916-774-5179 mwolinski@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 7.15.

RECOMMENDATION TO COUNCIL

Staff recommends the City Council adopt a resolution to approve the Third Amendment to Professional Services Agreement with The Ferguson Group, LLC (TFG) to extend by one year a professional services agreement to provide federal advocacy services, and authorize the City Manager to execute it.

BACKGROUND

Over the past 15 years, City Council and staff have become increasingly involved in working with federal elected officials and agencies on a number of issues that are significantly important to Roseville and the region. The undertakings have demonstrated that having a strong local presence at the federal level increases the possibilities of realizing positive outcomes on funding, policy and regulatory matters. To support these efforts, the City has contracted with TFG to provide professional representation on federal issues.

The services provided by TFG include a comprehensive, bipartisan government strategy that assists Roseville with the development and implementation of an effective federal legislative and regulatory program. Services include legislative and administrative representation with Members of Congress, Senators, House and Senate staff and pertinent federal agencies and departments. The services also include meeting with federal authorities and representing the City's interests as directed by the City.

Scope of Services

TFG works to secure federal grants, to provide the City's perspective to federal elected officials and agencies and to support various coalition efforts of City departments. The scope of services provided by TFG builds upon the professional representation they have provided to the City over the years and focuses on the following areas:

- Law enforcement funding, including for body cameras;
- Endangered Species Act and assistance with the Army Corp of Engineers and U.S. Fish and Wildlife permitting processes;
- Cybersecurity;
- Funding/grants for Fire Department equipment and training;

- Irrigation and flood control funding, regulations and policy;
- Land use issues as impacted by federal policy and permitting;
- Transportation policy and funding, including transit, highway funding and rail safety;
- Economic development
- Municipal government finance and revenue protection; and,
- Housing, homelessness, and social services including veteran's affairs.

TFG's more than 31 years of experience and presence in Washington D.C. gives them extensive and strong relationships with congressional leaders, the California congressional delegation, and key congressional committee staff.

In addition to their Capitol Hill relationships, TFG also has long-standing working relationships with key federal agencies relevant to Roseville including the Army Corps of Engineers, the Environmental Protection Agency, the Department of Transportation, the Department of Housing and Urban Development, the White House Office of Intergovernmental Affairs, and the Department of Veterans Affairs. Furthermore, this experience and understanding of Roseville's federal legislative history, concerns, and interests continue to be critical as funding levels for federal programs and services are discussed during budget discussions underway in Congress.

A recent example of TFG's work involves their focused and timely interactions with Congress regarding the federal pandemic relief bills. During this national emergency that has impacted the nation, state, and Roseville, TGF has provided well-timed, insightful information on the actions being considered by Congress regarding the pandemic. In addition to keeping the City informed, TGF advocated for funding and programs that were critically important to Roseville and our entire community. TFG's strong understanding of how the discussions unfolded provides exceptional direction and support to staff to ensure the City's interests are represented effectively in the discussion and with the City's congressional delegation.

FISCAL IMPACT

There is no change to the total annual cost of \$87,635 for the professional services under this amendment. Funding for the professional services agreement is included in the City Council's FY2020-21 budget.

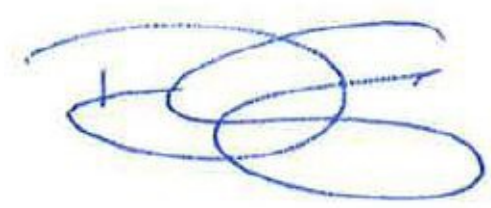
ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378. Approval for a third amendment to a professional services agreement for Federal Advocacy Services meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Mark Wolinski, Government Relations Administrator

Megan MacPherson, Deputy City Manager



Dominick Casey, City Manager

ATTACHMENTS:

Description

Resolution No. 20-261

Professional Services Agreement Amendment

RESOLUTION NO. 20-261

APPROVING A THIRD AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT,
BY AND BETWEEN THE CITY OF ROSEVILLE AND THE FERGUSON GROUP, LLC,
AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF
THE CITY OF ROSEVILLE

WHEREAS, a third amendment to professional services agreement for federal advocacy services, by and between the City of Roseville and The Ferguson Group, LLC, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said third amendment is hereby approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**THIRD AMENDMENT TO
PROFESSIONAL SERVICES AGREEMENT**

Federal Advocacy Services

THIS THIRD AMENDMENT TO AGREEMENT is made and entered into this ____ day of _____, 20__, by and between the City of Roseville, a municipal corporation (“CITY”), and The Ferguson Group, LLC, a District of Columbia limited liability company (“CONSULTANT”); and

W I T N E S S E T H:

WHEREAS, CITY and CONSULTANT previously entered into a Professional Services Agreement dated October 19, 2016, amended August 15, 2018 and June 3, 2019 (“Agreement”) regarding Federal Advocacy Services (“Project”); and

WHEREAS, CITY desires to amend the Agreement to extend the term of the agreement for one (1) additional year; and

WHEREAS, CONSULTANT is willing and able to provide such additional services.

NOW, THEREFORE, the parties agree as follows:

1. CONSULTANT shall continue to provide services as described in Exhibit “A” of the Agreement.
2. Paragraph 1 of the Agreement is amended by adding an additional paragraph to read as follows:

"Term. The term of this Agreement shall commence on July 1, 2020 and expire on June 30, 2021."

3. Paragraph 2 of the Agreement is amended by adding an additional paragraph to read as follows:

"CITY shall pay eighty-seven thousand, six hundred thirty-five dollars (\$87,635.00), in consideration of the additional term as set forth in the Third Amendment to Agreement. This brings the total not to exceed contract amount for CITY work to four hundred seventy-four thousand, five hundred seventy dollars (\$474,570.00)."

4. All other provisions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this Third Amendment to Agreement in duplicate by its City Manager and attested to by its City Clerk under the authority of Resolution No. _____, adopted by the Council of the City of Roseville on the ____ day of _____, 20__, and CONSULTANT has caused this Third Amendment to Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation

BY: _____
DOMINICK CASEY
City Manager

THE FERGUSON GROUP, LLC a
District of Columbia limited liability
company

BY:  _____
its: CEO

[SIGNATURES CONTINUED ON FOLLOWING PAGE]

ATTEST:

and

BY: 

President

its: _____

BY: _____

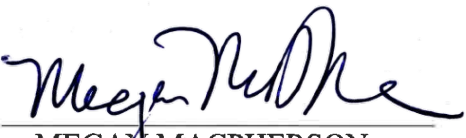
SONIA OROZCO
City Clerk

APPROVED AS TO FORM:

BY: _____

ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:

BY: 

MEGAN MACPHERSON
Deputy City Manager



COUNCIL COMMUNICATION

CC #: 0844
File #: 0800-03

Title: Roseville Energy Park Turbine Upgrade Project - Professional Services Agreement
Contact: Nathan Ribordy 916-746-1673 nribordy@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.16.

RECOMMENDATION TO COUNCIL

Staff recommends City Council adopt a resolution authorizing the City Manager to execute a Professional Services Agreement with DayZen, LLC. (Consultant) for services in support of the required amendment to the Roseville Energy Park's (REP) permit to operate with the California Energy Commission (CEC) and Placer County Air Pollution Control District (PCAPCD).

BACKGROUND

Siemens Energy, Inc., the manufacturer of the two Roseville Energy Park (REP) gas turbines, has proposed upgrades to enhance power output and efficiency. The proposed enhancements increase maximum power output by over 5%, reduce the minimum stable power output by over 25%, and improve operating efficiency by over 10%. This will allow the plant to produce more power and have greater operating flexibility to better accommodate renewable energy, all at a lower cost.

To realize the full benefits of the upgrade modifications must be made to the REP's permit to operate. This requires coordinating air modeling, preparing submittals, attending required meetings with external agencies, and providing professional oversight to the process on behalf of the City. In support of this effort, DayZen, LLC has been selected to provide this professional service. DayZen staff is uniquely qualified due to their previous experience permitting the REP and providing legal support.

FISCAL IMPACT

The total cost of the service is not to exceed \$112,000. Funding is included in the Electric Department's Turbine and Heat Recovery Steam Generator Rehabilitation project budget.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not

considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378. A professional services agreement for consulting services meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Nathan Ribordy, Senior Power Plant Engineer

Michelle Bertolino, Electric Utility Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Resolution No. 20-260

Professional Services Agreement

RESOLUTION NO. 20-260

APPROVING A PROFESSIONAL SERVICES AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND DAYZEN, LLC, AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a professional services agreement for consulting services for the Roseville Energy Park Turbine Upgrade project, by and between the City of Roseville and DayZen, LLC, has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said agreement is hereby approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk



COUNCIL COMMUNICATION

CC #: 0842

File #: 0709-03-01

Title: Campus Oaks CO-4 Belle Maison - Affordable Purchase Housing Agreement

Contact: Trisha Isom 916-746-1239 tisom@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 7.17.

RECOMMENDATION TO COUNCIL

Staff recommends that City Council adopt a resolution approving the attached Affordable Purchase Housing Agreement (APHA) for Lennar Homes - Campus Oaks Master Plan Parcel CO-4 (aka Belle Maison) and authorize the City Manager to execute the agreement and any related documents.

BACKGROUND

The City of Roseville's General Plan Housing Element requires a 10% affordable housing obligation for residential development and recommends that developers provide a distribution of the required affordable housing as follows: 40% very low; 40% low and 20% middle income. Since the 1980's, the City's Housing Division has implemented the General Plan's recommended distribution for compliance with the 10% affordable housing obligation. The proposed Affordable Purchase Housing Agreement (APHA) will assist the City in meeting its affordable housing policy goals and Regional Housing Needs Allocation (RHNA).

On September 27, 2018, the Planning Commission approved the Lennar Homes - Campus Oaks Master Plan Parcel CO-4 (aka Belle Maison) tentative subdivision map. A condition of approval of the map requires the developer, Lennar Homes, to enter into an APHA with the City to implement the affordable housing obligations. Based on the affordable rental units already obligated on Parcel CO-22 & CO-23 in the Campus Oaks Master Plan, it is determined that the developer has an obligation to provide 8 affordable purchase units.

The North Roseville Specific Plan Development Agreement language allows the affordable units in North Roseville Specific Plan DC30-31 to be transferred outside the Plan area. The developer has proposed to transfer 6 middle income affordable units from DC30-33 to Campus Oaks Master Plan CO-4. On Parcel CO-4, the developer will build a total of fourteen (14) of the subdivision's one hundred thirty-two (132) homes as affordable to middle income households.

The proposed APHA establishes the methods and terms by which the affordable housing is sold to income-qualified affordable buyers, see Attachment 1. The subsidies to buyers are captured as a silent second loan on title that gets repaid to the City's affordable housing funds upon resale or

thirty (30) years, whichever comes first. The repayment is then used to assist new income-qualified buyers to purchase and/or can assist in other affordable housing development.

FISCAL IMPACT

The subsidies for implementing the Campus Oaks Master Plan APHA are funded by the developer and do not impact the General Fund. The subsidies to buyers are captured as a silent second loan on title that gets repaid to the City's affordable housing funds upon resale or thirty (30) years, whichever comes first. The repayment is then reinvested into the community to assist new income-qualified buyers to purchase and/or can assist in other affordable housing development.

ENVIRONMENTAL REVIEW

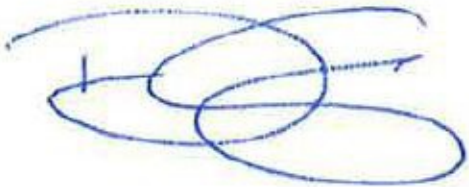
The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378.

The Affordable Purchase Housing Agreement for Parcel CO-4 meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Trisha Isom, Housing Manager

Laura Matteoli, Economic Development Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Resolution No. 20-259

Belle Maison CO-4 APHA

RESOLUTION NO. 20-259

APPROVING AN AFFORDABLE PURCHASE HOUSING AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND LENNAR HOMES OF CALIFORNIA, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT AND ALL RELATED DOCUMENTS ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, an Affordable Purchase Housing Agreement regarding Lennar Homes – Belle Maison – (CO Parcel 4), by and between the City of Roseville and Lennar Homes of California, Inc., has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said agreement is hereby approved and that the City Manager is authorized to execute it and all related documents on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

RECORDING REQUESTED BY
City of Roseville

WHEN RECORDED, PLEASE RETURN TO:

City Clerk
CITY OF ROSEVILLE
311 Vernon Street
Roseville, CA 95678

AFFORDABLE PURCHASE HOUSING AGREEMENT

Project Name: Lennar Homes – Belle Maison – (CO Parcel 4)

This Affordable Purchase Housing Agreement ("the APHA" or "Agreement") is made and entered into this _____ day of _____, 2020, between the City of Roseville, a municipal corporation ("CITY"), and Lennar Homes of California, Inc., a California corporation ("DEVELOPER"), and

W I T N E S S E T H:

WHEREAS, on June 13, 2013, CITY approved the updated Housing Element of the General Plan which applies a ten percent (10%) affordability requirement to all new specific plan areas or properties for which zoning is amended to change residential density; and

WHEREAS, on September 27, 2018, CITY approved the Campus Oaks Master Plan Parcel CO-4 (Lennar Homes) tentative subdivision map (Subdivision Map no. PL18-0147; "the Subdivision"); and

WHEREAS, the conditions of approval of the Subdivision require that eight (8) of the 132 lots in the Subdivision be improved with single-family dwellings and made available for sale at prices affordable to middle income families (the "Affordable Units"); and

WHEREAS, CITY has approved the transfer of six (6) Affordable Units from Parcel DC 30-33 project site to Parcel CO-4 for a total of fourteen (14) Affordable Units; and

WHEREAS, the conditions of approval of the Subdivision require DEVELOPER to enter into an affordable housing agreement to the satisfaction of City Attorney of CITY, implementing the affordable housing obligations of DEVELOPER; and

WHEREAS, DEVELOPER and CITY enter into this APHA in order to implement DEVELOPER's affordable housing obligations; and

WHEREAS, the Affordable Units will be governed by the "Special Development and Use Standards" ("the Standards"), which are attached to this APHA, marked as Exhibit "B," and are incorporated herein by this reference; and

NOW, THEREFORE, the parties agree as follows:

1. Subject Property. The real property which is the subject of this APHA (the "Subject Property") is described in Exhibit "A," which is attached to this APHA and incorporated herein by reference. The Subject Property consists of all real property within the Subdivision.
2. Ownership. DEVELOPER represents that it has a legal interest in the Subject Property and that all other persons holding legal or equitable interests, if any, in the Subject Property have signed an "acknowledgment and consent certificate," in a form approved by the City Attorney of CITY, acknowledging and consenting to the terms of this Agreement. All persons holding any legal or equitable interest in the Subject Property shall be bound by this Agreement.
3. Covenants Run with the Land. This APHA shall run with the land. The burdens of this APHA bind, and the benefits of the APHA inure to, the successors in interest of the parties. This APHA shall be recorded in the Office of the Placer County Recorder.

DEVELOPER's obligations under this APHA shall terminate with respect to each of the Affordable Units upon sale of each such Affordable Unit as a completed home, if such sale is in conformance with the requirements of this APHA; provided that the City agrees to execute and record in the Office of the Placer County Recorder (at DEVELOPER's cost) concurrently with each market unit sale a Notice of Termination. Responsibility for compliance with this APHA to each Affordable Unit shall thereafter be the burden of the then owner of such Affordable Unit.

DEVELOPER shall remain responsible for compliance with this APHA as to all other Affordable Units.

Those units which have not been designated as Affordable Units ("the Market Rate Units") shall be released from this APHA upon compliance by DEVELOPER with the terms and conditions of the Standards governing release. CITY's City Manager, or designee, ("the City Manager"), will execute and acknowledge a satisfaction and release of this APHA for each such Market Rate Unit within the Subject Property.

4. Standards. The parties agree that the Standards shall apply to the Subject Property. To the extent not specified in the Standards, or in this APHA, development of the Subject Property shall be governed by this Agreement and the provisions of the Roseville Municipal Code as they now exist or may hereafter be modified.

5. Due Diligence. DEVELOPER agrees to proceed in good faith and in a reasonable and diligent manner to implement the provisions of this APHA.

6. Changes to Regulations of No Effect. Except as provided in paragraph 4, CITY agrees that, unless this APHA is amended or canceled pursuant to the provisions of paragraphs 8, 9 or 15 below, this APHA shall be enforceable by the CITY and DEVELOPER or their respective successors in interest despite any change in any applicable general plan, specific plan, zoning ordinance, subdivision ordinance, or building regulations adopted by CITY, which change alters or amends the Standards.

7. Monitoring\Breach\Cure. DEVELOPER's compliance with the provisions of this APHA shall be reviewed at least annually, and at such other times as CITY may require, upon thirty (30) days prior written notice. During any such review, DEVELOPER shall bear the burden of proof to demonstrate good faith compliance with the terms of this APHA. If, as a result of such review, CITY finds and determines that DEVELOPER has not complied in good faith with the terms and conditions of this Agreement, CITY shall give written notice to DEVELOPER of its findings and of the exact nature of DEVELOPER's non-compliance. DEVELOPER shall be given a period of sixty (60) days after receipt of any such notice in which to cure, to the reasonable satisfaction of CITY, any inconsistencies or conditions of default. In the event CITY fails to give DEVELOPER notice of a failure to comply at or before the annual review, DEVELOPER shall not be held responsible for any failure to comply with the terms and conditions of this Agreement during that year.

8. CITY Remedies for Breach. If DEVELOPER is unwilling or unable to cure any such conditions of default within sixty (60) days after its receipt of notice pursuant to paragraph 7, CITY may, in addition to any other remedy provided by law or equity, modify or terminate this APHA, withhold further building permits, seek liquidated damages in accordance with this APHA, or take any action available to it under this Agreement.

In particular, and without limitation by reason of enumeration, DEVELOPER acknowledges and agrees that any default by DEVELOPER under this APHA shall, at the option of the CITY, constitute a default under this Agreement as to all other property within the Subdivision that is then subject to the APHA.

In addition, and without limitation by reason of enumeration, DEVELOPER acknowledges and agrees that CITY shall have the right to withhold issuance of all building permits within the Subdivision until such breach is cured.

9. Amendments. Except as otherwise provided herein, this APHA may be amended only by mutual written consent of the parties or their successors in interest. Such amendment shall be recorded in the Office of the Placer County Recorder.

10. Force Majeure. Performance by either party hereunder shall not be deemed to be in default where delays or defaults are due to war, insurrection, strikes, walkouts, riots, floods, earthquakes, fires, casualties, acts of God, governmental entities, or enactment of conflicting state or federal laws or regulations.

11. No Waiver. CITY does not waive any claim or defect in performance by DEVELOPER if upon review it does not propose to modify or terminate the APHA or otherwise seek enforcement of its provisions.

12. Notices. All notices required by this APHA shall be in writing and delivered in person or sent by U.S. mail, first class postage prepaid, to the following addresses:

CITY

Housing Manager
City of Roseville
316 Vernon Street, #150
Roseville, CA 95678

DEVELOPER

Lennar Homes of California, Inc.
Attn: Larry Gualco
1025 Creekside Ridge Drive, Ste. #240
Roseville, CA 95678

Either party may change its address by giving notice in writing to the other party.

13. Indemnification. DEVELOPER shall defend, indemnify and hold harmless CITY, its officers, agents, employees and volunteers, from liability or claims for damage of any nature, including but not limited to personal injury to any person, bodily injury to any person, including death, or property damage, which may arise from or be connected with the direct or indirect operations, inaction, or actions of DEVELOPER or its contractors, subcontractors, agents or employees arising out of or connected with this APHA, except those matters arising from the sole active negligence of CITY. This provision is intended to be broadly construed and extends to, among other things, any challenge to the validity of this APHA, except that it shall not extend to claims regarding the validity or invalidity of any adopted City policy.

14. Attorney Fees. If legal action is brought by either party against the other for breach of this Agreement or to compel performance of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees and costs. Any action arising out of this Agreement shall be brought in Placer County, California, regardless of where else venue may lie.

15. Term. The term of this APHA shall begin immediately upon its execution by the parties and shall end fifteen (15) years after the close of escrow on the last Affordable Unit sold to a Qualified Purchaser and/or after the release by CITY of such affordable obligation pursuant to Section 3.c of the Standards. Notwithstanding the foregoing, this APHA may be terminated or modified pursuant to the provisions of paragraphs 8 and 9 above.

16. Notice upon Transfer. DEVELOPER shall notify the CITY in writing thirty (30) days prior to any transfer of all or substantially all of its interest in the Subject Property. Said notice shall include the legal name of the new party(ies) and their current mailing address.

17. Liquidated Damages. The parties agree that, were DEVELOPER to fail to comply with the terms of this APHA subject to all applicable notice and cure periods and Force Majeure delay, the damage to CITY would be large but immeasurable. The parties estimate such damages at, and therefore agree to set the amount of liquidated damages for breach of this APHA by DEVELOPER at, the sum of one thousand dollars (\$1,000) per day during a default by

DEVELOPER under this Agreement following the expiration of the cure period described in paragraph 7 hereof (which cure period shall be extended for periods of Force Majeure delay).

18. Developer Payment. In order to partially offset the cost of the annual review to be performed, DEVELOPER agrees to pay to CITY the sum of six hundred dollars (\$600) when each affordable unit is sold. The payment shall be paid upon close of escrow.

19. Integration. This is an integrated agreement, and contains all of the terms, considerations, understanding and promises of the parties. It shall be read as a whole.

20. Consent of Lien Holders. The acknowledgment and consent of those (besides Developer) holding a legal interest in all or any part of the Subject Property is attached hereto as Exhibit "F."

21. Severability. The parties agree that the provisions of this Agreement are severable. If any provision is deemed invalid by a court of competent jurisdiction, the balance of this Agreement shall be considered to remain intact and be enforceable on its terms consistent with the findings and purposes set forth herein.

[Signatures on the following page]

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of the Agreement in duplicate by its Acting City Manager and attested to by its City Clerk under the authority of Resolution No. _____, adopted by the City of Roseville on the ____ day of _____, 2020, and DEVELOPER has caused this Agreement to be executed.

CITY OF ROSEVILLE,
a municipal corporation:

LENNAR HOMES OF CALIFORNIA,
INC., a California corporation

BY: _____
DOMINICK CASEY
City Manager

BY: _____
LARRY GUALCO
Vice President

ATTEST:

and

BY: _____
SONIA OROZCO
City Clerk

BY: _____
EARL KEITH
Division Controller

(notarization required)

APPROVED AS TO FORM:

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:

BY: _____
LAURA MATTEOLI
Economic Development Director

This Agreement contains 6 exhibits:

- A. Description of the Subject Property
- B. Special Development and Use Standards
- C. Part 1: Certification of Qualified Purchaser Eligibility
Part 2: Income Verification
Part 3: Checklist for Affordable Purchase Program
- D. Deed of Trust and Assignment of Rents
- D-1. Promissory Note
- E. Acknowledgment and Consent

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Placer

On June 3, 2020 before me, Rosa Catanzaro, Notary Public
(insert name and title of the officer)

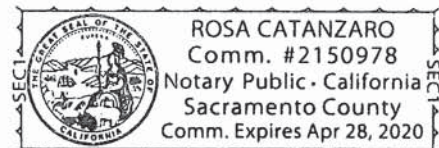
personally appeared Larry Gualco and Earl Keith,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) ~~is~~ are
subscribed to the within instrument and acknowledged to me that he/she/they executed the same in
~~his/her~~ their authorized capacity(ies), and that by ~~his/her~~ their signature(s) on the instrument the
person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing
paragraph is true and correct.

WITNESS my hand and official seal.

Signature 

(Seal)



"The notary commission extended pursuant to
Executive Order N-63-20"

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of the Agreement in duplicate by its Acting City Manager and attested to by its City Clerk under the authority of Resolution No. _____, adopted by the City of Roseville on the ____ day of _____, 2020, and DEVELOPER has caused this Agreement to be executed.

CITY OF ROSEVILLE,
a municipal corporation:

LENNAR HOMES OF CALIFORNIA,
INC., a California corporation

BY: _____
DOMINICK CASEY
City Manager

BY: _____
LARRY GUALCO
Vice President

ATTEST:

and

BY: _____
SONIA OROZCO
City Clerk

BY: _____
EARL KEITH
Division Controller

(notarization required)

APPROVED AS TO FORM:

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:

BY: Laura Matteoli
LAURA MATTEOLI
Economic Development Director

This Agreement contains 6 exhibits:

- A. Description of the Subject Property
- B. Special Development and Use Standards
- C. Part 1: Certification of Qualified Purchaser Eligibility
Part 2: Income Verification
Part 3: Checklist for Affordable Purchase Program
- D. Deed of Trust and Assignment of Rents
- D-1. Promissory Note
- E. Acknowledgment and Consent

EXHIBIT "A"
Legal Description

Real Property in the City of Roseville, County of Placer, State of California, described as follows:

PARCEL 1:

LOTS 7 AND 10 AS DESIGNATED ON THE LARGE LOT FINAL MAP CAMPUS OAKS SUBDIVISION NO. PL14-0373 FILED IN BOOK DD OF MAPS PAGE 47, PLACER COUNTY RECORDS. EXCEPTING THEREFROM THAT PORTION OF LOT 10 AS CONVEYED TO THE CITY OF ROSEVILLE, BY A GRANT DEED RECORDED JUNE 21, 2018, AS INSTRUMENT NO. 2018-0044522, OF OFFICIAL RECORDS.

PARCEL 2:

A PORTION OF LOT 8 AND ALL THAT PORTION OF LOT 9 AS SHOWN ON THE LARGE LOT FINAL MAP OF "CAMPUS OAKS" FILED IN BOOK DD OF MAPS AT PAGE 47, PLACER COUNTY RECORDS, LOCATED IN SECTION 20, TOWNSHIP 11 NORTH, RANGE 6 EAST, M.D.B.M., CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA, DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF WOODCREEK OAKS BOULEVARD AND PAINTED DESERT DRIVE, SAID INTERSECTION BEING MARKED BY A 1-1/2" BRONZE MONUMENT IN A CITY OF ROSEVILLE STANDARD MONUMENT WELL; THENCE FROM THE POINT OF COMMENCEMENT NORTH 89°33'03" EAST ALONG THE CENTERLINE OF SAID PAINTED DESERT DRIVE FOR A DISTANCE OF 373.54 FEET; THENCE LEAVING SAID CENTERLINE SOUTH 00°26'57" EAST FOR A DISTANCE OF 231.37 FEET TO A POINT ON THE WESTERLY LINE OF LOT 8 AND THE POINT OF BEGINNING; THENCE FROM THE POINT OF BEGINNING THE FOLLOWING SEVEN (7) CONTINUOUS COURSES AND DISTANCES:

1. NORTH 89°24'28" EAST FOR A DISTANCE OF 390.00 FEET,
2. SOUTH 0°26'56" EAST FOR A DISTANCE OF 56.55 FEET,
3. ALONG THE ARC OF A TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 530.00 FEET, A CENTRAL ANGLE OF 22°47'39", A LENGTH OF 210.85 FEET, AND A CHORD BEARING SOUTH 11°50'46" EAST FOR A DISTANCE OF 209.47 FEET,
4. SOUTH 23°14'35" EAST FOR A DISTANCE OF 201.31 FEET,
5. SOUTH 66°45'25" WEST FOR A DISTANCE OF 19.00 FEET,
6. SOUTH 23°14'35" EAST FOR A DISTANCE OF 19.30, AND
7. ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT, HAVING A RADIUS OF 481.00 FEET, A CENTRAL ANGLE OF 20°11'24", A LENGTH OF 169.50 FEET, AND A CHORD BEARING SOUTH 13°08'53" EAST FOR A DISTANCE OF 168.62 FEET TO THE INTERSECTION OF THE SOUTH LINE OF SAID LOT 8 AND THE NORTHERLY RIGHT OF WAY OF CRIMSON RIDGE WAY;

THENCE LEAVING SAID INTERSECTION AND ALONG THE SOUTH AND THE WEST LINES OF SAID LOT 8 THE FOLLOWING TWO (2) CONTINUOUS COURSES AND DISTANCES:

1. SOUTH 89°33'03" WEST FOR A DISTANCE OF 536.41 FEET, AND
2. NORTH 0°26'56" WEST FOR A DISTANCE OF 636.14 FEET TO THE POINT OF BEGINNING.

PARCEL 3:

EASEMENTS FOR ACCESS AND UTILITIES FOR THE BENEFIT OF PARCEL 4 OVER THOSE PORTIONS OF PARCELS 1, 2 AND 3 DESIGNATED "RECIPROCAL ACCESS EASEMENT" AS SHOWN ON THAT CERTAIN PARCEL MAP OF HEWLETT-PACKARD SUBDIVISION NO. SUB-000105 FILED FOR RECORD IN THE OFFICE OF THE RECORDER FOR THE COUNTY OF PLACER, STATE OF CALIFORNIA IN BOOK 34 OF PARCEL MAPS AT PAGE 73 AND AS CORRECTED BY THAT

CERTAIN DOCUMENT ENTITLED "GRANT OF EASEMENTS AND CORRECTION TO PRIOR EASEMENTS", RECORDED JULY 14, 2011 AS INSTRUMENT NO. 2011-0053955-00 OF OFFICIAL RECORDS.

PARCEL 4:

EASEMENTS FOR STORM WATER DRAINAGE SYSTEMS OVER PARCELS, 1, 2 AND 3 FOR THE BENEFIT OF PARCEL 4 AS DESCRIBED IN NOTE D OF THE OWNER'S STATEMENT ON THAT CERTAIN PARCEL MAP OF HEWLETT-PACKARD SUBDIVISION NO. SUB-000105 FILED FOR RECORD IN THE OFFICE OF THE RECORDER FOR THE COUNTY OF PLACER, STATE OF CALIFORNIA IN BOOK 34 OF PARCEL MAPS AT PAGE 73 AND AS CORRECTED BY THAT CERTAIN DOCUMENT ENTITLED "GRANT OF EASEMENTS AND CORRECTION TO PRIOR EASEMENTS", RECORDED JULY 14, 2011 AS INSTRUMENT NO. 2011-0053955-00 OF OFFICIAL RECORDS.

APN: 481-260-007, 481-260-024 and 481-260-034

EXHIBIT "B"

SPECIAL DEVELOPMENT AND USE STANDARDS

CITY and DEVELOPER agree that the following special development and use standards shall apply to the Subject Property.

1. The Reservation of Affordable Units. DEVELOPER agrees to reserve fourteen (14) single-family dwelling units (the "Affordable Units") for inclusion within the CITY's Affordable Purchase Housing Program. The Affordable Units shall be located on lots no. 9, 17, 27, 42, 54, 66, 79, 85, 87, 98, 100, 118, 125, and 129 of the Subdivision. DEVELOPER agrees to offer the Affordable Units for sale at an Affordable Price.

2. Definitions.

The following terms shall be defined for purposes of this APHA as set forth in this section:

a. "Affordable Purchase Price" - The sales price to be paid by a Qualified Purchaser for an Affordable Unit as determined in accordance with the provisions of Section 3.b below.

b. "Affordable Unit" - A single-family dwelling unit of at least three bedrooms and one bath, affordable at the time of sale to a Low Income Household or Middle Income Household.

c. "CITY MANAGER" – The City Manager for the City of Roseville and his or her designee.

d. "Immediate Family Member" - Parent, Stepparent, Child, Stepchild, or Spouse.

e. "Initial Subsidy" - The difference between the Affordable Purchase Price and the Market Value at the time of the original purchase under this Agreement.

f. "Market Value" - The fair market value of a unit determined by an independent appraiser approved by the CITY MANAGER.

g. (i) "Middle Income Household" - A family household, approved by the CITY MANAGER, consisting of one (1) or more persons earning no more than 100% of the median household income for a family of four, as defined in accordance with the most recent information issued by the United States Department of Housing and Urban Development (HUD) for the Sacramento—Arden- Arcade—Roseville Metropolitan Statistical Area ("Sacramento MSA"). CITY will use the income limit for a household of four (4) for a one-two (1-2) person household and income limit for a household of six (6) for a three (3) or more person household.

Provided, however, applications of persons or families who submit down payments exceeding twenty percent (20%), possess cash assets in excess of one hundred thousand dollars (\$100,000), receive a gift in excess of ten thousand dollars (\$10,000) toward a down payment, and/or qualify with a co-mortgagor

will be reviewed on a case by case basis, and the City may refuse to qualify such applicants if, in the opinion of the CITY MANAGER, the applicant(s) have sufficient cash assets or other financial support that enables them to purchase new units within the City without relying on this program.

h. "Non-Qualified Purchaser" - Any person or entity other than a Qualified Purchaser.

i. "Qualified Purchaser" – A Low Income Household or Middle Income Household that meets the eligibility criteria required to qualify to purchase an Affordable Unit. Qualified Purchasers are subject to the approval of the CITY MANAGER.

j. "Resale Price" - The sales price for an Affordable Unit paid to an Affordable Purchaser upon resale of the Affordable Unit by an Affordable Purchaser.

3. DEVELOPER's Affordable Housing Obligations. The following provisions apply to the sale of Affordable Units:

a. The Offer of Affordable Units. DEVELOPER shall offer fourteen (14) Affordable Units. The Affordable Units shall be similar in size, quality, fixtures, amenities and architecture to Market Rate Units within the subdivision in which they are located. The Affordable Units may have two-car garages and are not required to include fireplaces.

b. Establishing the Affordable Purchase Price. The Affordable Purchase Price for each Affordable Unit will be established at the time such Affordable Unit is offered for sale to prospective Qualified Purchasers. The Middle Income Affordable Purchase Price shall not exceed, for a three-bedroom unit (14 units), the price at which a four person household earning no more than 95% of the median income can qualify such income level to be determined in accordance with the definition of "Middle Income Household" above), living in the Sacramento MSA, under the financing program offered by DEVELOPER's preferred lender or similar lending institutions. DEVELOPER acknowledges that this amount will vary with time and will be established by the CITY MANAGER in accordance with paragraph 5.

The CITY MANAGER shall review the DEVELOPER's calculation of the proposed Affordable Purchase Price and shall require an appropriate adjustment in the Affordable Purchase Price if the financing program offered by DEVELOPER's preferred lender or similar lending institutions will not, in the CITY MANAGER's discretion, qualify a Low Income Household or Middle Income Household for purchase of the Affordable Unit. The financing program offered by DEVELOPER's preferred lender or similar lending institutions shall not require a down payment of greater than three percent (3%) of the Affordable Purchase Price and must offer a fixed rate loan of thirty (30) years or more.

c. Phasing of Development and Release of Market Rate Units. DEVELOPER expects to develop the Subdivision in phases. The first phase of development will include approximately thirty-two (32) lots, at least three (3) of which will be improved with Affordable Units; the second phase of development

will include approximately twenty-eight (28) lots, at least five (5) of which will be improved with an Affordable Unit; the third phase of development will include approximately fourteen (14) lots, at least one (1) of which will be improved with Affordable Units; the fourth phase of development will include approximately thirty-four (34) lots, at least four (4) of which will be improved with an Affordable Unit; and the fifth phase of development will include approximately twenty-four (24) lots, at least one (1) of which will be improved with an Affordable Unit. Subsequent to the issuance of building permits for Affordable Units for the first phase of development, CITY and DEVELOPER shall record, at DEVELOPER's expense, a notice of termination with respect to each of the Market Rate Units in the first phase of development, releasing each such Market Rate Unit from the force and effect of this APHA.

Prior to the issuance of building permits for each new phase of development, DEVELOPER shall provide the CITY MANAGER with written notification specifying:

- (i) the total number of building permits issued for the prior phase(s);
- (ii) the number and location of the Affordable Units from the prior phase (s) that have been sold to Qualified Purchasers;
- (iii) the total number of units to be included in the new phase of development; and
- (iv) the number and location of the Affordable Units to be included in the new phase of development.

The CITY MANAGER shall review such written notification and shall determine if DEVELOPER is making reasonable progress toward fulfillment of its affordable housing obligations as set forth herein. If the CITY MANAGER concludes reasonable progress is being made, CITY and DEVELOPER shall record, subsequent to the issuance of building permits for the new phase of development, a notice of termination with respect to each of the Market Rate Units in the new phase of development, releasing each such lot from the force and effect of this APHA. Such Notices of Termination shall be recorded at DEVELOPER's expense.

d. Marketing Affordable Units. Once an Affordable Purchase Price has been established, DEVELOPER agrees to use its best efforts to sell the Affordable Unit in accordance with this APHA. Such best efforts shall include, without limitation, (i) special advertising approved by the CITY MANAGER including, but not limited to, advertisements in local newspapers, direct mailers, and e-mails, prior to the release of the Affordable Unit for sale indicating the availability of the Affordable Unit to Middle Income Households, (ii) maintenance of a waiting list of Middle Income Households seeking housing opportunities in the area, (iii) notification of such Middle Income Households (and any other such applicant households identified by the CITY MANAGER) prior to the release of the Affordable Unit, and the pre-release, by at least one week, of the Affordable Unit to such notified households. In addition, for any Affordable Unit for which a contract of sale has not been entered into with a Middle Income Household after the above efforts, DEVELOPER shall not enter into a contract of sale of the available Affordable Unit, except with a Qualified

Purchaser, for ninety (90) days after release of the Affordable Unit to the general public (the "Initial Release Period").

e. Approval of Prospective Qualified Purchasers. DEVELOPER agrees that prior to sale of an Affordable Unit, each prospective Qualified Purchaser shall be required to complete a form substantially similar to the form attached hereto as Exhibit "C." No Affordable Unit shall be sold by DEVELOPER to a prospective purchaser whose household income level, as disclosed on the form or other documents submitted by the prospective purchaser, exceeds the target household income level (either low or middle) for a family of four in the Sacramento MSA, as annually adjusted. DEVELOPER shall maintain copies of all such forms until the termination of this APHA. The originals of such form shall be delivered to the CITY MANAGER who shall determine whether or not such prospective purchasers qualify as Qualified Purchasers.

f. Sale to Non-Qualified Purchaser. If, in spite of DEVELOPER's best efforts, as defined above, a Qualified Purchaser is not found, DEVELOPER may sell the unsold Affordable Unit to a Non-Qualified Purchaser at a market price with the CITY's consent, and shall remit to CITY a fee equal to half of the agreed upon subsidy if not sold to a Qualified Purchaser ("Non-Conversion Fee"). All Non-Conversion Fees will be deposited into CITY's Housing Trust Fund for use in the provision and preservation of affordable housing. Concurrently with such a sale of an Affordable Unit to a Non-Qualified Purchaser in accordance with this Section 3.f, the CITY and DEVELOPER shall record, at DEVELOPER's cost, a notice of termination, releasing such Affordable Unit from the terms of this APHA

g. Sale to a Qualified Purchaser. Each Qualified Purchaser shall be required to purchase the Affordable Unit with cash, a mortgage secured by a first deed of trust on the Affordable Unit, loan(s) from other affordable purchase programs, or a combination of the these sources. If a mortgage is secured, DEVELOPER must ensure that the Qualified Purchaser receives a fixed rate loan of thirty (30) years or more. The Qualified Purchaser must make at least a one percent (1%) downpayment towards the Affordable Purchase Price, excluding closing costs.

h. Notice of Sale to a Qualified Purchaser. Any contract of sale for an Affordable Unit between DEVELOPER and a prospective Qualified Purchaser shall be contingent upon approval of the Qualified Purchaser by the CITY MANAGER. Upon execution of such a contract of sale for an Affordable Unit between DEVELOPER and a Qualified Purchaser and upon approval of the Qualified Purchaser by a lender, DEVELOPER shall, within three (3) working days, notify the CITY MANAGER of the pending escrow. DEVELOPER shall, at the time of notification, also provide information verifying the buyers' qualifications as a Qualified Purchaser, including a copy of a completed form substantially similar to the form attached as Exhibit "C."

i. Approval of Qualified Purchaser. The CITY MANAGER shall within ten (10) working days of receipt from DEVELOPER of a complete buyer qualification package, either approve the prospective purchaser as a Qualified

Purchaser or provide DEVELOPER with a written explanation specifying the reasons the prospective purchaser does not qualify.

j. Appraisal Required. The Market Value of the Affordable Unit to be sold to a Qualified Purchaser shall be determined by an independent appraiser at least fifteen (15) days but not more than six (6) months prior to the contract for sale of an Affordable Unit to a Qualified Purchaser. The appraiser shall be approved by the CITY MANAGER. In lieu of an appraisal and at CITY's sole discretion, CITY may use recent comparable market rate sales within the Subdivision where the Affordable Unit is located to establish Market Value.

k. Note Required. In each sale to a Qualified Purchaser, CITY shall take back a note from the Qualified Purchaser, secured by a first or second deed of trust utilizing documents substantially similar to the documents attached as Exhibit "E," "E-1" and "E-2" in an amount equal to the Initial Subsidy together with the calculated interest as determined in accordance with Section 3.l.i. The provisions of the note and deed of trust shall include the substantial equivalent of the following:

1) No interest; no principal payments; due in thirty (30) years from date of execution.

2) During the first fifteen (15) years after sale of an Affordable Unit to a Qualified Purchaser, the full principal amount of the note shall be: due on sale to any Non-Qualified Purchaser; due on change of use from single-family residential to any other use or if the Affordable Unit is rented; due on any change in title, whether voluntary or involuntary, which adds any person to the title other than a spouse or any other Immediate Family Member provided such Immediate Family Member resided in the Affordable Unit at the time the Qualified Purchaser purchased the Affordable Unit; and due on any refinance of the Affordable Unit either not approved by the CITY MANAGER, or in an amount exceeding the Qualified Purchaser's equity at that time.

3) Reissued to a subsequent Qualified Purchaser approved by the CITY MANAGER if the sale is within fifteen (15) years.

4) Due on sale after fifteen (15) years from the date of original purchase under this Agreement.

5) The note shall include a provision requiring that notice be given to the CITY MANAGER upon the occasion of satisfaction of the note and/or reconveyance of the Affordable Unit pursuant to the terms of the deed of trust.

l. Type of Note. The Qualified Purchaser will execute a Promissory Note with the following provisions:

(i) Promissory Note (Exhibit E-1). Where the Note becomes due for any of the reasons set forth in Section 3.k.2 above, simple interest shall be computed based upon the unpaid balance of the principal amounts and at the annual rate of two percent (2%) for the first 15 years. Beginning at the first day of the sixteenth (16th) year all accrued interest shall be forgiven and the Note shall be retired upon payment of the principal balance only.

If the Affordable Unit is sold to a Qualified Purchaser within fifteen (15) years of the original sale, CITY may reinvest any available affordable funds. CITY's note shall be adjusted, upon reissuance of a new note to the new Qualified Purchaser pursuant to Section 3.k.3 above, to reflect the addition of the CITY's investment. If the Affordable Unit is sold to a Non-Qualified Purchaser within fifteen (15) years of the original sale or to any purchaser thereafter, the interest shall be distributed in accordance with the allocations set forth in this section.

m. Notice to City on Resale. During the first fifteen (15) years after the initial sale by DEVELOPER to a Qualified Purchaser, the Qualified Purchaser shall notify the CITY MANAGER in writing sixty (60) days prior to offering the Affordable Unit for resale in order to allow CITY time to identify, qualify and provide a subsequent Qualified Purchaser. The Qualified Purchaser shall disclose to the CITY MANAGER the proposed Sales Price. Such Sales Price must be consistent with Market Value at the time of sale as determined in an appraisal made at the Qualified Purchaser's expense by an independent appraiser, approved by the CITY MANAGER. Such notice shall be addressed to:

Housing Manager
City of Roseville
316 Vernon Street #150
Roseville, CA 95678

n. Mandatory Resale to City - Provided Qualified Purchaser. CITY shall have sixty (60) days from the date of receipt of notice pursuant to Section 3.m. to identify, qualify and provide a subsequent Qualified Purchaser.

The Qualified Purchaser shall offer to sell the Affordable Unit to the subsequent Affordable Purchaser, if one is provided by CITY.

o. Hazard Insurance. A Qualified Purchaser shall at all times maintain hazard/fire insurance equal to replacement cost of the Affordable Unit.

p. Initial Subsidy of Five Thousand Dollars (\$5,000) or Less. If the difference between the Affordable Purchase Price and the Market Value at the time of original sale under this Agreement is five thousand dollars (\$5,000) or less, the requirements of Section 3.j, 3.k, 3.l, 3.m, 3.n, 3.o and 3.p above shall not apply. Concurrently with the sale of an Affordable Unit to a Qualified Purchaser at an Affordable Purchase Price that is within five thousand dollars (\$5,000) of the original Market Value, CITY and DEVELOPER shall record, at DEVELOPER's cost, a notice of termination, releasing the property under the contract of sale from the terms of this Agreement. For every Affordable Unit for which a notice of termination is recorded pursuant to this Section 3.p, CITY shall waive the monitoring fee set forth in Section 18 of the APHA.

q. Foreclosures. In the event of a foreclosure or deed in lieu of foreclosure of a first deed of trust, any provisions herein or any provisions in any other collateral agreement restricting the use of the Affordable Unit to moderate income households or otherwise restricting the Qualified Purchaser's ability to sell the Affordable Unit shall have no further force or effect on subsequent

owners or purchaser of the Affordable Unit. Any person, including his or her successors or assigns (other than the Qualified Purchaser or a related entity of the Qualified Purchaser), receiving title to the Affordable Unit through a foreclosure or deed in lieu of foreclosure of the first deed of trust, shall receive title to the Affordable Unit free and clear from such restrictions.

4. City Inspection of Records of Sale. DEVELOPER agrees, upon reasonable notice, to make available to CITY for audit, inspection and copying its records of sale for the purpose of assuring compliance with this APHA, including without limitation, those forms maintained pursuant to Section 3.d.

5. Annual Adjustment of Median Income. Median income shall be adjusted annually by the CITY MANAGER to coincide with the changes in the low/middle household income for a four (4) person household for the Sacramento MSA as published in the Federal Register or the most recent available circular distributed by the U.S. Department of Housing and Urban Development. The CITY MANAGER shall notify DEVELOPER in writing of each annual adjustment. If DEVELOPER does not agree with the annual adjustment, DEVELOPER may, within fifteen (15) calendar days of notification by the CITY MANAGER, present to the CITY MANAGER additional information which it wishes the CITY MANAGER to consider. The CITY MANAGER will review this information and, within fifteen (15) calendar days, decide on and notify DEVELOPER of an annual income limit adjustment. The decision of the CITY MANAGER shall be final.

6. Changing the Location of an Affordable Unit. DEVELOPER has reserved the units identified in Section 1 as the locations for the Affordable Units. DEVELOPER may change the location of an Affordable Unit to another location within the Subdivision upon the written approval of the CITY MANAGER, provided, however, that Affordable Units shall not be clustered in one location. If an Affordable Unit is relocated to another location, DEVELOPER shall record a notice, in a form approved by the CITY MANAGER, both on the unit being released from this APHA and on the unit being newly encumbered by this APHA.

7. Right to Cure. In the event that title to an Affordable Unit is conveyed to a Non-Qualified Purchaser in breach of this Agreement, DEVELOPER or DEVELOPER's successor or assignee may cure the default by designating an additional, different unit within the Subject Property as an Affordable Unit. Such designation shall be subject to the written approval of the CITY MANAGER. DEVELOPER or DEVELOPER's successor or assignee shall record a notice, in a form approved by CITY MANAGER, on the unit being newly designated and encumbered as an Affordable Unit under this Agreement. CITY and DEVELOPER shall, at DEVELOPER's cost, record a notice of termination, releasing the unit that was conveyed to a Non-Qualified Purchaser in breach of this Agreement, from the terms of this Agreement.

8. Handbook Required. Prior to sale of any Affordable Unit, DEVELOPER shall give to the Qualified Purchaser a copy of this Agreement and a handbook, prepared

by the CITY, explaining in general the terms and conditions of this Agreement. DEVELOPER shall also require the Qualified Purchaser to sign a statement acknowledging receipt of this Agreement and the handbook. The form of such handbook shall be approved by the CITY MANAGER.

9. Local Residents, Employees and Veterans. Consistent with all federal, state and local laws, DEVELOPER agrees to use its best efforts to sell the affordable units to persons who are employed in the City of Roseville, reside in the City of Roseville or who are honorably discharged veterans and agrees, in cooperation with CITY, to notify major employers in Roseville, in a timely fashion, of the type and availability of housing being constructed by DEVELOPER. If CITY determines at any time that the requirements of this paragraph conflict with applicable law, the CITY MANAGER shall notify DEVELOPER and this paragraph shall thereafter be deemed to be of no further force or effect.

10. Home Buyer Training. DEVELOPER shall ensure the approved affordable purchasers have attended 8 hours of homebuyer training. The training shall be performed by an accredited (either by the U.S. Department of Housing & Urban Development or other recognized entity) home buying counseling agency. A typical training would include 3 hours of home buying process, 2 hours of budgeting and credit workshop, and 3 hours of home maintenance/good neighbor training. The cost of such training shall not be borne by the affordable purchaser.

EXHIBIT "C" -- Part 1

CERTIFICATION OF QUALIFIED PURCHASER ELIGIBILITY

I/We have read and answered truthfully, fully, frankly and personally each of the following questions for all persons who are to purchase the unit being applied for in the above residential project. Listed below are the names of all persons who intend to reside in the unit:

1. Name of Members of the <u>Household</u>	2. Relationship to head of <u>Household</u>	3. <u>Age</u>	4. Social Security <u>Number</u>	5. Place of <u>Employment</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

INCOME COMPUTATION

6. The total anticipated income calculated in accordance with this paragraph 6, of all persons (except children under the age of 18 years) listed above for the 12-month period beginning the date that I/we plan to move into a unit is \$_____.

Included in the total anticipated income listed above are:

- a. All wages and salaries, overtime pay, commissions, fees, bonuses, tips and other compensation for personal services, before payroll deductions.
- b. Net income from operation of a business or profession.
- c. Periodic amounts received from social security, retirement funds, and the like.
- d. Income received in place of earnings (such as unemployment benefits).
- e. Welfare assistance payments.
- f. Periodic allowances like spousal or child support.
- g. Military pay.

Excluded from such anticipated income are:

- a. Casual, sporadic or irregular gifts.
- b. Amounts which are specifically for or in reimbursement of medical expenses for any family member.

- c. Lump sum additions to family assets, such as inheritances, insurance payments (including payments under health and accident insurance and worker's compensation), capital gains and settlement for personal or property losses.
- d. Amounts of student financial assistance paid directly to the student or the educational institution, and amounts paid by the government to a veteran for use in meeting the costs of tuition, fees, books, and equipment. Any amounts of such scholarships or payments to veterans not used for the above purposes are to be included in income.
- e. Hazardous duty pay to a family member in the armed forces who is away from home and exposed to hostile fire.
- f. Foster child or adult care payments.
- g. The value of coupon allotments or Electronic Benefit Transfer ("EBT") cards for the purchase of food pursuant to the Food Stamp Act of 1977.

7. This certificate is made with the knowledge that it will be relied upon by the DEVELOPER to determine maximum income for eligibility to occupy the unit; and I/we declare that all information set forth herein is true, correct and complete and based upon information I/we deem reliable and that the statement of total anticipated income contained in paragraph 6 is reasonable and based upon such investigation as the undersigned deemed necessary.

8. I/We will assist the DEVELOPER in obtaining any information or documents required to verify the statements made herein, including either an income verification from my/our present employer(s) or copies of federal tax returns for the immediately preceding calendar year.

9. I/We acknowledge that I/we have been advised that the making of any misrepresentation or misstatement in this declaration will constitute a material breach of my/our agreement with the DEVELOPER to purchase the unit and will entitle the DEVELOPER to cancel my/our contract for sale.

10. **I/We understand that the property we are buying is subject to an Affordable Purchase Housing Agreement between DEVELOPER and the City of Roseville, and that the Agreement contains provisions which may affect my/our title to the property, right to sell the property, and share of appreciation in the property.** As owners, I/we will be subject to the Agreement, and I/we agree to comply with it. I/We acknowledge receipt of a copy of the Agreement and of a handbook generally explaining its terms, if applicable (if a 2nd mortgage is provided by CITY to ensure affordability).

I/We declare under penalty of perjury that the foregoing is true and correct.

Executed this _____ day of _____, 20____ in the City of _____, California.

Applicant

Applicant

[All persons listed in number 2 above except children under the age of 18 years must sign this form]

FOR COMPLETION BY DEVELOPER OR AGENT:

1. Calculation of eligible income:
 - a. Enter amount for entire household in 6 above: \$ _____
 - b. (1) Deduct this amount which is excluded from such anticipated income according to paragraph 6. Reason for exclusion is _____

c. Total Eligible Income (line 1a less 1b) \$ _____
2. The amount entered in 1c:
 - a. _____ Qualifies the applicant to the guidelines up to 100% of the (middle) or up to 80% (low) median Sacramento Metro Area household income. (circle one)
 - b. Was verified by use of:
_____ Employer income verification.
_____ Copies of tax returns.
_____ Other.
3. Lot Number of Affordable Unit to be conveyed: _____
Affordable Purchase Price: \$ _____
Market Value: \$ _____
2nd Note held by CITY: \$ _____
4. I witnessed the above applicant's signature, and have given him/her/them a copy of the Affordable Purchase Housing Agreement and a handbook explaining its terms, **if applicable** (if a 2nd mortgage is provided by CITY to ensure affordability).

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this ____ day of _____, 20__ in the City of _____, California.

Date: _____

Agent for DEVELOPER

EXHIBIT "C" -- Part 2

INCOME VERIFICATION
(for employed persons)

(name of employee)
(address)

I, the undersigned employee, have applied to purchase an Affordable Unit located in a residential subdivision that provides special use standards for persons or families earning up to 100% of the median Sacramento household income. My income statement as a prospective Qualified Purchaser must be verified. Please indicate below my current annual income from wages, overtime, bonuses, commissions or any other form of compensation received on a regular basis. Thank you.

Name of Employer/Company _____
Annual Wages _____
Overtime _____
Bonuses _____
Commissions _____

I declare under penalty of perjury under the laws of the State of California that the above statements are true and complete to the best of my knowledge.

Signature of Employer Date Title

I hereby grant you permission to disclose my income to _____
_____ in order that they may determine my income eligibility for the purchase of an Affordable Unit located in their subdivision.

Signature of Employee Date

Please send to:

(name of DEVELOPER)
(address)



EXHIBIT "C"-- Part 3

Checklist for Affordable Purchase Program

Circle the income category for which the purchaser qualifies.

Family Size	Middle Income up to 100% of Median Income
1-2	\$86,300
3+	\$100,200

Step 1: Written 3rd party verification of all income and assets including:

- | | |
|---|--|
| ☐ Employment verification (Lender VOE) | ☐ Government Grants |
| ☐ Self Employment - | ☐ TANF (Welfare Benefits) |
| ☐ Tax Returns & Profit and Loss Statements | ☐ Gift funds |
| ☐ Social Security and/or SSI benefits | ☐ 2 months worth of Savings Account statements |
| ☐ Unemployment | ☐ 2 months worth of Checking Account statements |
| ☐ Alimony | ☐ Trust Funds |
| ☐ Child Support | ☐ Stocks & Bonds (Cash Value) |
| ☐ VA or Military Benefits | ☐ Life Insurance (Cash Value) |
| ☐ Retirement Funds | ☐ Pensions and/or Annuities |

Eligibility: ☐ **Approved** ☐ **Denied** **Date determination sent to lender:** _____

Step 2: All of the following must be submitted prior to final approval of an Affordable Purchase Loan

- ☐ Applicant Certification of Eligibility (City form)
- ☐ Copy of Drivers Licenses & Social Security Cards
- ☐ Loan Estimate
- ☐ Underwriting and Transmittal Summary
- ☐ Loan Application
- ☐ Preliminary Title Report
- ☐ Credit Report
- ☐ Purchase Agreement
- ☐ Appraisal
- ☐ Closing Disclosure

Final Loan Approval: ☐ **Approved** ☐ **Denied** **Date determination sent to lender:** _____

Purchaser's exceeding a 20% down payment, cash assets in excess of \$100,000, receiving a gift, qualifying with a co-mortgagor and/or exceeding the income limit will be qualified on a case by case basis.

A complete package must be submitted at least ten (10) business days prior to close of escrow.

Date projected for close of escrow _____

Property: Belle Maison Lender: _____ Phone: _____

RECORDING REQUESTED BY

AND WHEN RECORDED MAIL TO

City of Roseville – City Clerk
311 Vernon Street
Roseville, CA 95678

(EXEMPT FROM RECORDING FEES GOV'T CODE § 27383)

SPACE ABOVE THIS LINE FOR RECORDER'S USE

DEED OF TRUST AND ASSIGNMENT OF RENTS

THIS DEED OF TRUST Made this..... day of, 20...., between

Herein called TRUSTOR whose address is..... **Roseville, CA** and
.....herein called Trustee, andthe City of Roseville, herein called BENEFICIARY.

Witnesseth: That Trustor irrevocably GRANTS, TRANSFERS AND ASSIGNS TO TRUSTEE IN TRUST, WITH POWER OF SALE, that real property in the ... City of Roseville ... County of. PLACER....., State of California, described as:

Property Description-See Exhibit A

TOGETHER WITH the rents, issues and profits thereof, SUBJECT, HOWEVER, to the right, power and authority given to and conferred upon Beneficiary by Paragraph (10) of the provisions incorporated herein by reference to collect and apply such rents, issues and profits, for the purpose of securing payment of the indebtedness evidenced by a promissory note, of even date herewith, executed by Trustor in the sum of \$..... any additional sums and interest thereon hereafter loaned by Beneficiary to the then record owner of said property which loans are evidenced by a promissory note or notes, containing a recitation that this Deed of Trust secures the payment thereof, any lawful charge made by Beneficiary for a statement regarding the obligations secured hereby requested by or for Trustor, and the performance of each agreement herein contained. By the execution and delivery of this Deed of Trust and the note secured hereby, the provisions (1) to (15) inclusive, printed on pages 2 and 3 hereof, hereby are adopted and incorporated herein and made a part hereof as fully as though set forth herein at length; that he will observe and perform said provisions; and that the references to property, obligations, and parties in said provisions shall be construed to refer to the property, obligations, and parties set forth in this Deed of Trust.

Trustor requests that a copy of any Notice of Default and a copy of any Notice of Sale hereunder be mailed to him at his address given herein.

Signature _____

Signature _____

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California

County of _____

On _____ before me, (here insert name and title of the officer),
personally appeared _____

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct

WITNESS my hand and official seal.

Signature _____ (Seal)

TO PROTECT THE SECURITY OF THIS DEED OF TRUST, TRUSTOR AGREES:

(1) To keep said property in good condition and repair; not to remove or demolish any building thereon; to complete or restore promptly and in good and workmanlike manner any building which may be constructed, damaged or destroyed thereon and to pay when due all claims for labor performed and materials furnished therefor; to comply with all laws affecting said property or requiring any alterations or improvements to be made thereon; not to commit or permit waste thereof; not to commit, suffer or permit any act upon said property in violation of law; to cultivate, irrigate, fertilize, fumigate, prune and do all other acts which from the character or use of said property may be reasonably necessary, the specific enumerations herein not excluding the general.

(2) To provide, maintain and deliver to Beneficiary fire insurance satisfactory to and with loss payable to Beneficiary. The amount collected under any fire or other insurance policy may be applied by Beneficiary upon indebtedness secured hereby and in such order as Beneficiary may determine, or at option of Beneficiary the entire amount so collected or any part thereof may be released to Trustor. Such application or release shall not cure or waive any default or notice of default hereunder or invalidate any act done pursuant to such notice.

(3) To appear in and defend any action or proceeding purporting to affect the security hereof or the rights or powers of Beneficiary or Trustee; and to pay all costs and expenses, including cost of evidence of title and attorney's fees in a reasonable sum, in any such action or proceeding in which Beneficiary or Trustee may appear, and in any suit brought by Beneficiary to foreclose this Deed.

(4) To pay: at least ten (10) days before delinquency all taxes and assessments affecting said property, including assessments on appurtenant water stock; when due, all encumbrances, charges and liens, any interest, on said property or any part thereof, which appear to be prior or superior hereto; all costs, fees and expenses of this Trust.

Should Trustor fail to make any payment or to do any act as herein provided, then Beneficiary or Trustee, but without obligation so to do and without notice to or demand upon Trustor and without releasing Trustor from any obligation hereof, may: make or do the same in such manner and to such extent as either may deem necessary to protect the security hereof, Beneficiary or Trustee being authorized to enter upon said property for such purposes; appear in and defend any action or proceeding purporting to affect the security hereof or the rights or powers of Beneficiary or Trustee; pay, purchase, contest or compromise any encumbrance, charge or lien which in the judgment of either appears to be prior or superior hereto; and, in exercising any such powers, pay necessary expenses, employ counsel and pay his reasonable fees.

(5) To pay immediately and without demand all sums so expended by Beneficiary or Trustee, with interest from date of expenditure at the amount allowed by law in effect at the date hereof, and to pay for any statement provided for by law in effect at the date hereof regarding the obligation secured hereby any amount demanded by the Beneficiary not to exceed the maximum allowed by law at the time when said statement is demanded.

(6) That any award of damages in connection with any condemnation for public use of or injury to said property or any part thereof is hereby assigned and shall be paid to Beneficiary who may apply or release such moneys received by him in the same manner and with the same effect as above provided for disposition of proceeds of fire or other insurance.

(7) That by accepting payment of any sum secured hereby after its due date, Beneficiary does not waive his right either to require prompt payment when due of all other sums so secured or to declare default for failure so to pay.

(8) That at any time or from time to time, without liability therefor and without notice, upon written request of Beneficiary and presentation of this Deed and said note for endorsement, and without affecting the personal liability of any person for payment of the indebtedness secured hereby, Trustee may: reconvey any part of said property; consent to the making of any map or plat thereof; join in granting any easement thereon; or join in any extension agreement or any agreement subordinating the lien or charge hereof.

(9) That upon written request of Beneficiary stating that all sums secured hereby have been paid, and upon surrender of this Deed and said note to Trustee for cancellation and retention and upon payment of its fees, Trustee shall reconvey, without warranty, the property then held hereunder. The recitals in such reconveyance of any matters or facts shall be conclusive proof of the truthfulness thereof. The grantee in such reconveyance may be described as "the person or persons legally entitled thereto." Five (5) years after issuance of such full reconveyance, Trustee may destroy said note and this Deed (unless directed in such request to retain them).

(10) That as additional security, Trustor hereby gives to and confers upon Beneficiary the right, power and authority, during the continuance of these Trusts, to collect the rents, issues and profits of said property, reserving unto Trustor the right, prior to any default by Trustor in payment of any indebtedness secured hereby or in performance of any agreement hereunder, to collect and retain such rents, issues and profits as they become due and payable. Upon any such default, Beneficiary may at any time without notice, either in person, by agent, or by a receiver to be appointed by a court, and without regard to the adequacy of any security for the indebtedness hereby secured, enter upon and take possession of said property or any part thereof, in his own name sue or otherwise collect such rents, issues and profits, including those past due and unpaid, and apply the same, less costs and expenses of operation and collection, including reasonable attorney's fees, upon any indebtedness secured hereby, and in such order as Beneficiary may determine. The entering upon and taking possession of said property, the collection of such rents, issues and profits and the application thereof as aforesaid, shall not cure or waive any default or notice of default hereunder or invalidate any act done pursuant to such notice.

(11) That upon default by Trustor in payment of any indebtedness secured hereby or in performance of any agreement hereunder, Beneficiary may declare all sums secured hereby immediately due and payable by delivery to Trustee of written declaration of default and demand for sale and of written notice of default and of election to cause to be sold said property, which notice Trustee shall cause to be filed for record. Beneficiary also shall deposit with Trustee this Deed, said note and all documents evidencing expenditures secured hereby.

After the lapse of such time as may then be required by law following the recordation of said notice of default, and notice of sale having been given as then required by law, Trustee, without demand on Trustor, shall sell said property at the time and place fixed by it in said notice of sale, either as a whole or in separate parcels and in such order as it may determine at public auction to the highest bidder for cash in lawful money of the United States, payable at time of sale. Trustee may postpone sale of all or any portion of said property by public announcement at such time and place of sale, and from time to time thereafter may postpone such sale by public announcement at the time fixed by the preceding postponement. Trustee shall deliver to such purchaser its deed conveying the property so sold, but without any covenant or warranty, express or implied. The recitals in

such deed of any matters or facts shall be conclusive proof of the truthfulness thereof. Any person, including Trustor, Trustee, or Beneficiary as hereinafter defined, may purchase at such sale.

After deducting all costs, fees and expenses of Trustee and of this Trust, including cost of evidence of title in connection with sale, Trustee shall apply the proceeds of sale to payment of: all sums expended under the terms hereof, not then repaid, with accrued interest at the amount allowed by law in effect at the date hereof; all other sums then secured hereby; and the remainder, if any, to the person or persons legally entitled thereto.

(12) Beneficiary, or any successor in ownership of any indebtedness secured hereby, may from time to time, by instrument in writing, substitute a successor or successors to any Trustee named herein or acting hereunder, which instrument, executed by the Beneficiary and duly acknowledged and recorded in the office of the recorder of the county or counties where said property is situated, shall be conclusive proof of proper substitution of such successor Trustee or Trustees, who shall, without conveyance from the Trustee predecessor, succeed to all its title, estate, rights, powers and duties. Said instrument must contain the name of the original Trustor, Trustee and Beneficiary hereunder, the book and page where this Deed is recorded and the name and address of the new Trustee.

(13) That this Deed applies to inure to the benefit of, and binds all parties hereto, their heirs, legatees, devisees, administrators, executors, successors and assigns. The term Beneficiary shall mean the owner and holder, including pledges, of the note secured hereby, whether or not named as Beneficiary herein. In this Deed, whenever the context so requires, the masculine gender includes the feminine and/or neuter, and the singular number includes the plural.

(14) The Trustee accepts this Trust when this Deed, duly executed and acknowledged, is made a public record as provided by law. Trustee is not obligated to notify any party hereto of pending sale under any other Deed of Trust or of any action or proceeding in which Trustor, Beneficiary or Trustee shall be a party unless brought by Trustee.

(15) Trustee shall act as Trustee under Deeds of Trust given solely for the purpose of securing obligations for the repayment of money other than corporate bonds. (California Financial Code §1590.)

REQUEST FOR RECONVEYANCE
THE PROMISSORY NOTE OR NOTES, AND ANY EVIDENCES OF FURTHER AND/OR
ADDITIONAL ADVANCES MUST BE PRESENTED WITH THIS REQUEST.

.....California.....
(Date)

To THE TRUSTEE NAMED ON THE REVERSE HEREOF:
You are hereby authorized and requested to execute a reconveyance hereunder and deliver same to

.....
.....
The undersigned own all the obligations secured by said Deed of Trust:

Beneficiary

Beneficiary

Beneficiary

Beneficiary

EXHIBIT "D-1"

Promissory Note

**CITY OF ROSEVILLE
DOWN PAYMENT ASSISTANCE PROGRAM
PROMISSORY NOTE SECURED BY DEED OF TRUST**

Borrower:

Property Address:

Lender: City of Roseville

Principal Amount:

Date: _____

The "Borrower(s)", _____ for value received, promise to pay the City of Roseville ("HOLDER"), at 316 Vernon Street #150, Roseville, CA 95678 or any other place designated in writing submitted by Holder to Borrower, the principal sum of Dollars (\$,000.00) ("Principal Amount") plus interest on the unpaid principal balance according to the terms contained in this note.

Use of Funds: The loan is being made in order to assist Borrower in purchasing the property at the address above.

Term: This Note shall be for a term of thirty (30) years at which time all unpaid principal and interest remaining will be due and payable. Said maturity shall be on the same day of the year as the Date of this Note.

Interest: This Note shall bear interest on the unpaid principal balance from the Date (as stated above), and be computed as simple interest upon the unpaid balance of the principal amounts and at the annual rate of 2% for the first 15 years. Beginning at the first day of the sixteenth (16th) year all accrued interest shall be forgiven and the Note shall be retired upon the payment of the principal balance only.

Payments: No installment payments of principal or interest are required during the first thirty years after the making of this Note at which time the Note shall become all due and payable in lawful money of the United States.

Acceleration: The principal and accrued interest stated in this Note shall become all due and payable upon any total or partial sale, transfer, conveyance, assignment or lease of the whole or any part of the real property described in the Deed of Trust.

Obligations of Persons Under this Note: If more than one person signs this Note, each person is fully and personally obligated to keep all the promises made in this Note, including the promise to pay the full amount owed. The Note Holder may enforce its rights under this Note against each Borrower individually or against all Borrowers. This means that any Borrower may be required to pay the entire amount owed under this Note.

Resale of Unit: During the first fifteen (15) years after the initial sale, Borrower shall notify Holder in writing, no less than ten (10) business days, prior to listing the affordable unit for resale. The property shall be listed on MetroList, or other similar home sale website. Holder shall have sixty (60) days from the date of receipt of notice to identify, qualify and provide a subsequent qualified purchaser. Borrower shall offer to sell the affordable unit to the subsequent affordable purchaser, if one is provided by Holder.

Giving of Notice: Unless applicable law requires a different method, any notice that must be given to Borrower under this Note will be given by first class mail to Borrower at the property address above or at a different address if Borrower gives the Note Holder a notice of a different address.

Subordination: Any subordination request shall be submitted to the City of Roseville Housing Division for approval or rejection, which approval or rejection shall be made in the interests of the City and according to Housing Program purposes. This Note shall be subordinate to the original senior loan; any refinancing or early pay-off or release of the note secured by the senior deed of trust shall cause this Note to move into senior position, unless with respect to any approved refinancing, the City of Roseville Housing Division agrees to subordinate the deed of trust securing this Note to such approved refinancing.

Attorney's Fees: Borrower(s) agree to pay the following costs, expenses and attorney's fees paid or incurred by the Note Holder. If the Holder brings any action or proceeding in connection with the enforcement or collection of this Note, the Prevailing Party (as hereafter defined) in any such proceeding, action or appeal thereon, shall be entitled to reasonable attorney's fees. Such fees may be awarded in the same suit or recovered in a separate suit, whether or not such action or proceeding is pursued to decision or judgment. The term "Prevailing Party" shall include, without limitation, the party who substantially obtains or defeats the relief sought, as the case may be, whether by compromise, settlement, judgment, or the abandonment by the other party of its claim or defense. The attorney's fees award shall not be computed in accordance with any court fee schedule, but shall be such as to fully reimburse all attorneys' fees reasonably incurred.

In addition to the foregoing award of attorneys' fees, the Note Holder shall be entitled to its attorney fees incurred in any post judgment proceedings to enforce any judgment in connection with this Note. This provision is separate and several and shall survive the merger of this provision into any judgment.

OWNER OCCUPIED RESIDENCE. Borrower understands that so long as an unpaid balance remains under this Note, Borrower must live in the property as Borrower's principal residence. If at any time during the term of this Note Borrower lives elsewhere, the Note Holder will have the right to require payment of all principal and accrued interest (see "Acceleration" above).

Signature

Signature

Date

Date

EXHIBIT “E”

ACKNOWLEDGMENT AND CONSENT

The undersigned, having an interest in the Property located at _____, Roseville, California, hereby acknowledges that he/she/it has read and understood the document entitled “Affordable Purchase Housing Agreement” for the _____ Project and that by execution of this Acknowledgment and Consent, consent is given to the terms and conditions of said Agreement.

Date

Print Name: _____

Title: _____

Company: _____

and

Date

Print Name: _____

Title: _____

Company: _____



COUNCIL COMMUNICATION

CC #: 0852
File #: 0800-02

Title: Northern California Water Association - Councilmember Membership and Board Participation
Contact: Sean Bigley 916-774-5513 sbigley@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.18.

RECOMMENDATION TO COUNCIL

Staff recommends that the City Council approve City Councilmember Pauline Roccucci to be the designated Roseville City Councilmember to serve on the Northern California Water Association (NCWA) as either a primary board member or an alternate board member.

BACKGROUND

Staff would like to move forward with applying for membership for the City of Roseville in the Northern California Water Agency (NCWA).

Formed in 1992, NCWA is a water users association made up of mostly agricultural and some urban water users in the Sacramento Valley that divert water off of the Sacramento, American, Feather and Yuba Rivers. NCWA is generally viewed as an influential water association in state and federal circles focused on advocating on issues important to Northern California water agencies and communities. In staff's assessment, NCWA's mission is compatible with, and would add value to, furthering the City's legislative and regulatory priorities. Also, the Placer County Water Agency, a key business partner of the City of Roseville, recently joined NCWA.

Additional information on NCWA can be found at www.norcalwater.org.

If the City of Roseville's NCWA membership application is accepted, the City of Roseville will initially have an alternate board seat made available to the City of Roseville. Election to the Board of Directors happens every two years, with the last election happening recently. Other elected officials from NCWA member agencies, not elected on the Board, are considered "alternate" board members and are allowed to participate in NCWA Board meetings.

In consultation with Roseville Mayor John Allard, City Councilmember Pauline Roccucci is being recommended to represent the City of Roseville on the NCWA Board. Staff is requesting City Council's approval of Councilmember Roccucci to serve in this capacity representing the City of Roseville.

FISCAL IMPACT

Roseville membership in NCWA is estimated to cost \$9,873 for 2020 and adjusts yearly based on total annual water diverted, which is budgeted in FY2020-21 in the Water Utility Administration budget funded through the Water Operations Fund which receives revenue from utility service sales.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378. An appointment to serve on the Northern California Water Association meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Sean Bigley, Assistant Director Environmental Utilities

Richard Plecker, Director Environmental Utilities



Dominick Casey, City Manager

ATTACHMENTS:

Description

NCWA Fact Sheet



NCWA
Northern California Water Association

California history is filled with stories of competing interests seeking new water supplies to satisfy their ever increasing needs. Over the years, many of these attempts have threatened the water rights and supplies, the environment, communities and the way of life in Northern California. The Northern California Water Association (NCWA) was formed in 1992 to present a unified voice to ensure that this region has reliable and affordable water supplies—both now and into the future.

Who We Are:

We are the water districts, water companies, small towns, rural communities and landowners that beneficially use both surface and groundwater resources in the Sacramento Valley. NCWA's Board of Directors and staff are committed to safeguard water supplies in the Sacramento Valley and constructive leadership in the pursuit of solutions to resolve California's most perplexing water problems. As a result, NCWA is the recognized voice of Northern California water. NCWA represents the entire Sacramento Valley, which extends from Sacramento to north of Redding, and between the crests of the Sierra Nevada and the Coast Range.

Board of Directors

NCWA is governed by a Board of Directors (Board) who are elected by the NCWA members every other year. The Board meets six times a year in different places throughout the Sacramento Valley. The Board sets the priorities for NCWA, oversees the organization and actively represents NCWA in various state and federal venues. The Board members are listed at www.norcalwater.org/about/board-members.

NCWA Staff

NCWA is actively involved in all aspects of California water at both the state and federal level, including the various regulatory, legislative, legal, and communication arenas. A full listing of the NCWA staff and their biographies can be seen at www.norcalwater.org/about/staff. NCWA staff are always available to help NCWA members at any time by phone and we can attend Board meetings, annual meetings and any other meeting upon request.



What We Do:

NCWA brings the water leaders in the region together to safeguard the region's water rights and supplies by working with Congress, the State Legislature, state and federal agencies, and various stakeholders throughout the state. NCWA has also led and coordinated efforts for water resources managers to implement sustainability initiatives and integrated regional planning across this diverse region.

Efficient. Essential. Exceptional.
www.norcalwater.org



NCWA Priorities:

The NCWA Board of Directors annually develops priorities for the upcoming year. The current Strategic Planning and Priorities is available from NCWA.

We Support:

NCWA members provide reliable supplies of clean water for the natural and working landscapes between the crests of the Sierra Nevada and the Coast Range, which includes a unique mosaic:

- Two million acres of family farms are the economic engine for the region, provides a working landscape and pastoral setting and serves as valuable habitat for fish and waterfowl along the Pacific Flyway;
 - The small towns and rural communities that form the backbone of the region, as well as the State Capital that serves as the center of government for the State of California;
 - Freshwater habitat for four runs of Chinook salmon; including the threatened and endangered winter-run and spring-run salmon, steelhead and green sturgeon;
 - Six National Wildlife Refuges, more than fifty State Wildlife Areas and other privately managed wetlands that support the annual migration of waterfowl, geese and waterbirds in the Pacific Flyway. These seasonal and permanent wetlands provide for 65% of the North American Water-fowl Management Plan objectives;
 - The forests and meadows in the numerous watersheds of the Sierra Nevada and Coast Range.
-

Contact:

Please visit our website at www.norcalwater.org

We can be reached at:

455 Capitol Mall, Suite 335 Sacramento, CA 95814
(916) 442-8333

Communications and Information

For more information on NCWA communications and how to get more information on California water issues, please see: [How to Get Water Information Affecting the Sacramento Valley](#).

Meetings

NCWA hosts an annual meeting in March to showcase the region and to invite diverse parties to share their perspectives on water and the Sacramento Valley. NCWA also has various Task Forces on topics that are important to the Sacramento Valley. This includes the Bay-Delta, Groundwater Management, and Communications. NCWA also has managers meetings to discuss timely topics of interest.

NorCal Water Leaders Program

NCWA hosts an intensive 6-month water leaders program every other year. Representatives for NCWA members are encouraged to participate in the program and to assist us in cultivating future water leadership in the Sacramento Valley.



NCWA
Northern California Water Association



COUNCIL COMMUNICATION

CC #: 0843
File #: 0400-07

Title: Campus Oaks Town Center - Final Map
Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.19.

RECOMMENDATION TO COUNCIL

It is recommended that the City Council approve the final map on file with the City Clerk and accept on behalf of the public, subject to improvement, Lot A and the public easements offered thereon; and approve the abandonment of the easement listed thereon.

BACKGROUND

The Development Services Department, Engineering section, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 9 commercial and 1 public right of way lots.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

Approval of the Campus Oaks Town Center final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Campus Oaks Town Center final map was accomplished with the preparation of an Addendum to the Hewlett-Packard Master Plan Environmental Impact Report (HPMP EIR) as part of the analysis for the Campus Oaks Master Plan project (Hewlett-Packard Campus Oaks Addendum), which was approved by City Council on August 5, 2015. Because the Campus Oaks Town Center final map is consistent with project evaluated in the Hewlett-Packard Campus Oaks Addendum, no new effects would be expected to occur and all applicable mitigation measures identified in the Addendum to the HPMP will be implemented. As such, no additional CEQA action is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

PRINT NAME _____
TITLE _____

NOTARY'S STATEMENT

MY COMMISSION EXPIRES _____

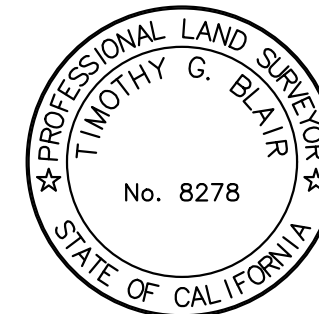
NOTARY'S STATEMENT

MY COMMISSION EXPIRES _____

SURVEYOR'S STATEMENT

DATE _____

CITY ENGINEER'S STATEMENT



CITY CLERK'S STATEMENT

RECORDER'S STATEMENT

SHEET 1 OF 4 SHEETS JOB NO. 170015

TRUSTEE'S STATEMENT

FIRST AMERICAN TITLE COMPANY, AS TRUSTEE UNDER DEED OF TRUST RECORDED
NOVEMBER 26, 2019 AS INSTRUMENT NO. 2019-0096109, OFFICIAL RECORDS OF
PLACER COUNTY.

PRINT NAME _____
TITLE _____

PRINT NAME _____
TITLE _____

NOTARY'S STATEMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE
IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS
ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF _____
COUNTY OF _____

ON _____, BEFORE ME, _____, A NOTARY
PUBLIC PERSONALLY APPEARED _____

WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S)
WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO
ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED
CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE
PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE
INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA
THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL

NOTARY PUBLIC, STATE OF _____
PRINT NAME _____

MY PRINCIPAL PLACE OF BUSINESS IS _____ COUNTY

MY COMMISSION NO. _____

MY COMMISSION EXPIRES _____

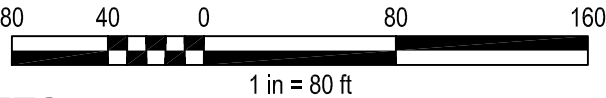
FINAL MAP
CAMPUS OAKS TOWN CENTER
SUBDIVISION NO. PL 18-0080
BEING A SUBDIVISION OF PARCELS 1, 2 AND 3
36 PARCEL MAPS 21, PLACER COUNTY RECORDS
SITUATE IN SECTION 20, T.11N., R.6E., M.D.M.

CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY 2020
MORTON & PITALO, INC.

BASIS OF BEARINGS

THE MERIDIAN OF THIS SURVEY IS N00°26'57"W, BETWEEN FOUND MONUMENTS ALONG THE CENTERLINE OF WOODCREEK OAKS BOULEVARD AS SAID MONUMENTS ARE SHOWN AND SO DESIGNATED ON THAT CERTAIN MAP ENTITLED, "LARGE LOT MAP OF CAMPUS OAKS" FILED IN BOOK DD OF MAPS, PAGE 47, PLACER COUNTY RECORDS.

GRAPHIC SCALE



NOTES

- TOTAL AREA OF THIS SUBDIVISION IS 18.010 ACRES, CREATING 9 COMMERCIAL LOTS AND ONE LETTERED LOT.
- PURSUANT TO SECTION 66499.20.2 OF THE GOVERNMENT CODE, THE LAND SHOWN HEREON IS HEREBY MERGED AND RESUBDIVIDED AND THE FOLLOWING EASEMENTS ARE HEREBY ABANDONED:

(A) ALL THAT PORTION OF THE 30' RECYCLED WATER EASEMENT, AS SAID EASEMENT IS DESCRIBED IN THAT CERTAIN DOCUMENT RECORDED AS INSTRUMENT NO. 2001-0099497, PLACER COUNTY OFFICIAL RECORDS, LYING WITHIN THE NUMBERED LOTS SHOWN HEREON.
- LOT CORNERS FRONTING PAINTED DESERT SHALL BE WITNESSED BY A 1" BRASS DISC TAGGED "L.S. 7350" SET 1.0 FEET FROM THE CORNER ON THE PROJECTED LOT LINE.
- A SOILS REPORT PREPARED BY ENGeo, PROJECT NO. 11216.004.001 DATED MAY 3, 2018 AND UPDATED JANUARY 29, 2020 IS ON FILE WITH THE CITY OF ROSEVILLE DEVELOPMENT SERVICES - ENGINEERING DEPARTMENT, FILE NO. 308-918.
- PRIVATE EASEMENTS SHOWN HEREON SHALL BE RESERVED OR CONVEYED, AS MAY BE APPROPRIATE, WITH THE CONVEYANCE OF THE LOTS SHOWN HEREON.
- THE FOLLOWING DOCUMENTS CONTAIN EASEMENTS THAT MAY AFFECT THE PROPERTY SHOWN HEREON, THE LOCATION OF WHICH IS NOT DEFINED THEREIN:

DOCUMENT NO. 2011-0039391, PLACER COUNTY RECORDS, REFERS TO "GRANT OF ACCESS EASEMENT" AS STATED IN THE PARAGRAPH ENUMERATED "4" OVER PARCEL 4 OF 34 P.M. 73 AND FOR THE BENEFIT OF PARCEL 1 OF SAID PARCEL MAP (34 P.M. 73).

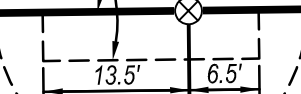
DOCUMENT NO. 2011-0053955, PLACER COUNTY RECORDS, REFERS TO "EASEMENTS FOR STORM WATER DRAINAGE SYSTEMS" OVER PARCEL 4 OF 34 P.M. 73 FOR THE BENEFIT OF PARCELS 1, 2 AND 3 OF SAID PARCEL MAP (34 P.M. 73).
- THE PROPERTY SHOWN HEREON IS SUBJECT TO THAT CERTAIN EASEMENT FOR PEDESTRIAN AND VEHICULAR INGRESS AND EGRESS, AND THAT CERTAIN EASEMENT FOR PEDESTRIAN INGRESS AND EGRESS AS SAID EASEMENTS WERE GRANTED PURSUANT TO "ACCESS EASEMENT AGREEMENT" RECORDED AS DOCUMENT NO. 2019-0096778, PLACER COUNTY OFFICIAL RECORDS. THE LOCATION OF SAID EASEMENTS ARE DEFINED APPROXIMATELY BY SAID DOCUMENT AND ARE NOT PLOTTED HEREON.
- LOT 7, SHOWN HEREON, HAS BEEN DESIGNATED TO RESERVE STRIPED PARKING SPACES FOR PARK AND RIDE PURPOSES.
- LOT A IS DEDICATED TO THE CITY OF ROSEVILLE IN FEE FOR PUBLIC RIGHT OF WAY WITH THE FILING OF THIS MAP.
- A DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR THIS SUBDIVISION HAS BEEN RECORDED AS DOCUMENT NO. _____.

LEGEND

-DIMENSION POINT, NOTHING FOUND OR SET
-SET 1" GALVANIZED PIPE TAGGED "L.S. 7350"
- ⊗.....SET 1" BRASS DISC STAMPED "L.S. 7350"
-FOUND 3/4" REBAR, NO TAG (COPPER COLLAR, STAMPED "L.S. 4751" PER (1)(5))
-FOUND 3/4" REBAR WITH COPPER COLLAR STAMPED "L.S. 4751" PER DD MAPS 47
- ⊙.....FOUND STANDARD CITY MONUMENT IN WELL STAMPED L.S. 8371
- P.U.E.....PUBLIC UTILITY EASEMENT
- P.P.E.....PUBLIC PEDESTRIAN EASEMENT
- (1).....RECORD DATA PER 36 P.M. 21

BLUE OAKS BOULEVARD

4.5' BUS SHELTER EASEMENT



DETAIL "A"

N.T.S.

FINAL MAP

CAMPUS OAKS TOWN CENTER

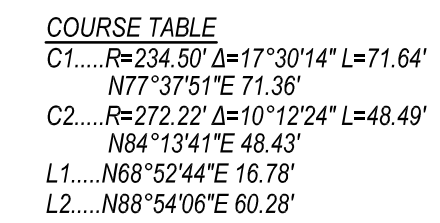
SUBDIVISION NO. PL 18-0080

BEING A SUBDIVISION OF PARCELS 1, 2 AND 3
36 PARCEL MAPS 21, PLACER COUNTY RECORDS
SITUATE IN SECTION 20, T.11N., R.6E., M.D.M.

CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA

JULY 2020 SCALE: 1"=80'

MORTON & PITALO, INC.



- ## **LEGEND**
- DIMENSION POINT,
NOTHING FOUND OR SET
- ♂ SET 1" GALVANIZED PIPE
TAGGED "L.S. 7350"
- ⊗ SET 1" BRASS DISC
STAMPED "L.S. 7350"
- ✱ FOUND 3/4" REBAR, NO TAG
(COPPER COLLAR, STAMPED "L.S. 4751"
PER (1)/(5))
- ♂ FOUND 3/4" REBAR WITH COPPER COLLAR
STAMPED "L.S. 4751" PER DD MAPS 47
- ◎ FOUND STANDARD CITY MONUMENT IN WELL
STAMPED "L.S. 8371
- P.U.E.PUBLIC UTILITY EASEMENT
- P.P.E.PUBLIC PEDESTRIAN EASEMENT
- (1).....RECORD DATA PER 36 P.M. 21

CITY OF ROSEVILLE, PLACER COUNTY, CALIFORNIA
JULY 2020 SCALE: 1"=80'
MORTON & PITALO, INC.

Dwg: Y:201717-0015-00 (ARMSTRONG CAMPUS OAKS)JDWGSRVY\WORKING\FINAL MAP\170015-S1-FM03.DWG | Saved: 05-28-20 12:04pm | CH-HABA



COUNCIL COMMUNICATION

CC #: 0848
File #: 0400-07

Title: Fiddymment Ranch Phase 2 Village 11-A1-0001 - Final Map
Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.20.

RECOMMENDATION TO COUNCIL

It is recommended that the City Council approve the final map on file with the City Clerk and accept on behalf of the public, Lot B and the rights of way and the easements offered thereon, and approve the abandonment of the rights of way and easements listed thereon.

BACKGROUND

The Development Services, Engineering section, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 4 residential lots and 1 landscape lot.

On September 18, 2019, City Council approved the Fiddymment Ranch Phase 2 Village 11-A1 final map creating a subdivision of 47 residential lots and 2 public landscape lots. The map was then subsequently recorded with the Placer County Recorder's office. During construction of the improvements for the subdivision, it was discovered that the back property line of 4 of the lots needed to be adjusted to match the location of the pilasters and fence that had been installed next to the lots. This new map will relocate the property lines between 4 residential lots and a public landscape lot to match the location of the pilasters and fence.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

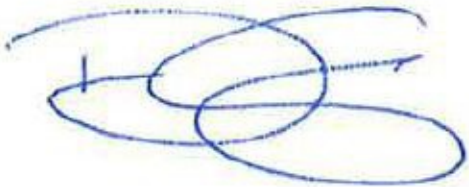
Approval of the Fiddymment Ranch Phase 2 Village 11-A1-0001 final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Fiddymment Ranch Phase 2 Village 11-A1-0001 final map was accomplished with the preparation

of the West Roseville Specific Plan EIR (SCH#2002082057) that was certified by the City of Roseville on February 4, 2004. Because the Fiddymont Ranch Phase 2 Village 11-A1-0001 final map is consistent with project evaluated in the West Roseville Specific Plan EIR, no new effects would be expected to occur and all applicable mitigation measures from the West Roseville Specific Plan EIR will be implemented. As such, no additional CEQA action is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

OWNER'S STATEMENT

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTEREST IN THE LANDS SUBDIVIDED HEREON, HEREBY CONSENT TO THE PREPARATION AND RECORDING OF THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 11-A1-0001" AND DO HEREBY OFFER FOR DEDICATION FOR SPECIFIC PURPOSES THE FOLLOWING:

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS AN EASEMENT FOR PUBLIC PURPOSES:

- A. AS PUBLIC EASEMENTS, THE AREAS SHOWN HEREON AS "PUE" (PUBLIC UTILITY EASEMENT) ARE FOR INSTALLATION AND MAINTENANCE OF, BUT NOT LIMITED TO, ELECTROLIERS, TRAFFIC CONTROL APPURTENANCES, WATER, SEWER, DRAINAGE AND GAS PIPES, AND FOR UNDERGROUND WIRES AND CONDUITS FOR ELECTRICAL, TELEPHONE AND TELEVISION SERVICES, TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER, AND ACROSS LOT B.

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED IN FEE FOR PUBLIC PURPOSES:

- A. AS PUBLIC RIGHT OF WAY (INCLUDING ALL IMPROVEMENTS THEREON), LOT B.

ATC REALTY ONE, LLC

A DELAWARE LIMITED LIABILITY COMPANY

BY: _____
DAVID L. ASH
ITS: SENIOR VICE PRESIDENT

RICHMOND AMERICAN HOMES OF MARYLAND, INC.,

A MARYLAND CORPORATION

BY: _____ BY: _____
NAME: _____ NAME: _____
TITLE: _____ TITLE: _____

OWNER'S ACKNOWLEDGEMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF CALIFORNIA)
COUNTY OF _____) SS

ON _____, 2020, BEFORE ME, _____
A NOTARY PUBLIC, PERSONALLY APPEARED _____
WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/ SHE/ THEY EXECUTED THE SAME IN HIS/ HER/ THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS /HER /THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY ON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL,

SIGNATURE: _____
PRINT NAME: _____
MY COMMISSION NUMBER: _____
MY COMMISSION EXPIRES: _____
PRINCIPAL COUNTY OF BUSINESS: _____

OWNER'S ACKNOWLEDGEMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF CALIFORNIA)
COUNTY OF _____) SS

ON _____, 2020, BEFORE ME, _____
A NOTARY PUBLIC, PERSONALLY APPEARED _____
AND _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/ SHE/ THEY EXECUTED THE SAME IN HIS/ HER/ THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS /HER /THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY ON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL,

SIGNATURE: _____
PRINT NAME: _____
MY COMMISSION NUMBER: _____
MY COMMISSION EXPIRES: _____
PRINCIPAL COUNTY OF BUSINESS: _____

SURVEYOR'S STATEMENT

THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2, VILLAGE 11-A1-0001" WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF ATC REALTY ONE, LLC., ON JANUARY 1, 2018. I HEREBY STATE THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE APPROVED OR CONDITIONALLY APPROVED TENTATIVE MAP (IF ANY), THAT ALL MONUMENTS ARE OF THE CHARACTER AND OCCUPY THE POSITIONS INDICATED OR THAT THEY WILL BE SET IN THOSE POSITIONS ON OR BEFORE DECEMBER 31, 2020, AND THAT SAID MONUMENTS ARE OR WILL BE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED.

DATED THIS ____ DAY OF _____, 2020.

SCOTT A. SHORTLIDGE, P.L.S. NO. 6441



CITY ENGINEER'S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 11-A1-0001" AND FIND IT TO BE SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS THEREOF, AND THAT IT COMPLIES WITH ALL PROVISIONS OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES.

MARC STOUT _____ DATE _____
CITY ENGINEER, CITY OF ROSEVILLE
R.C.E. #69879 EXPIRATION DATE: SEPTEMBER 30, 2020

I HEREBY STATE THAT I AM SATISFIED THAT THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 11-A1-0001 IS TECHNICALLY CORRECT.

FOR MARC STOUT, CITY ENGINEER, CITY OF ROSEVILLE

TIMOTHY G. BLAIR _____ DATE _____
PLS. #8278 EXPIRATION DATE: DECEMBER 31, 2021



CITY CLERK'S STATEMENT

I HEREBY CERTIFY THAT THE CITY COUNCIL, CITY OF ROSEVILLE, HAS APPROVED THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 11-A1-0001" AND HAS ACCEPTED ON BEHALF OF THE PUBLIC, LOT B AND ALL THE RIGHTS-OF-WAY AND EASEMENTS OFFERED HEREON FOR DEDICATION AND HAS APPROVED THE ABANDONMENT OF THE RIGHT OF WAY AND EASEMENTS LISTED IN NOTE 5 ON SHEET 2 OF THIS MAP.

DATED _____

CITY CLERK, CITY OF ROSEVILLE

BY: _____
ASSISTANT CITY CLERK

COUNTY RECORDER'S STATEMENT

FILED FOR RECORD THIS ____ DAY OF _____, 2020, AT _____M.,
IN BOOK ____ OF MAPS AT PAGES ____ AT THE REQUEST OF OLD REPUBLIC
TITLE COMPANY.

SERIES NO. _____

RYAN RONCO
COUNTY RECORDER IN AND FOR
PLACER COUNTY, CALIFORNIA

FEE: \$ _____

BY: _____
DEPUTY

FINAL MAP OF
FIDDYMENT RANCH PHASE 2
VILLAGE 11-A1-0001
SUBDIVISION NO. PL20-0052

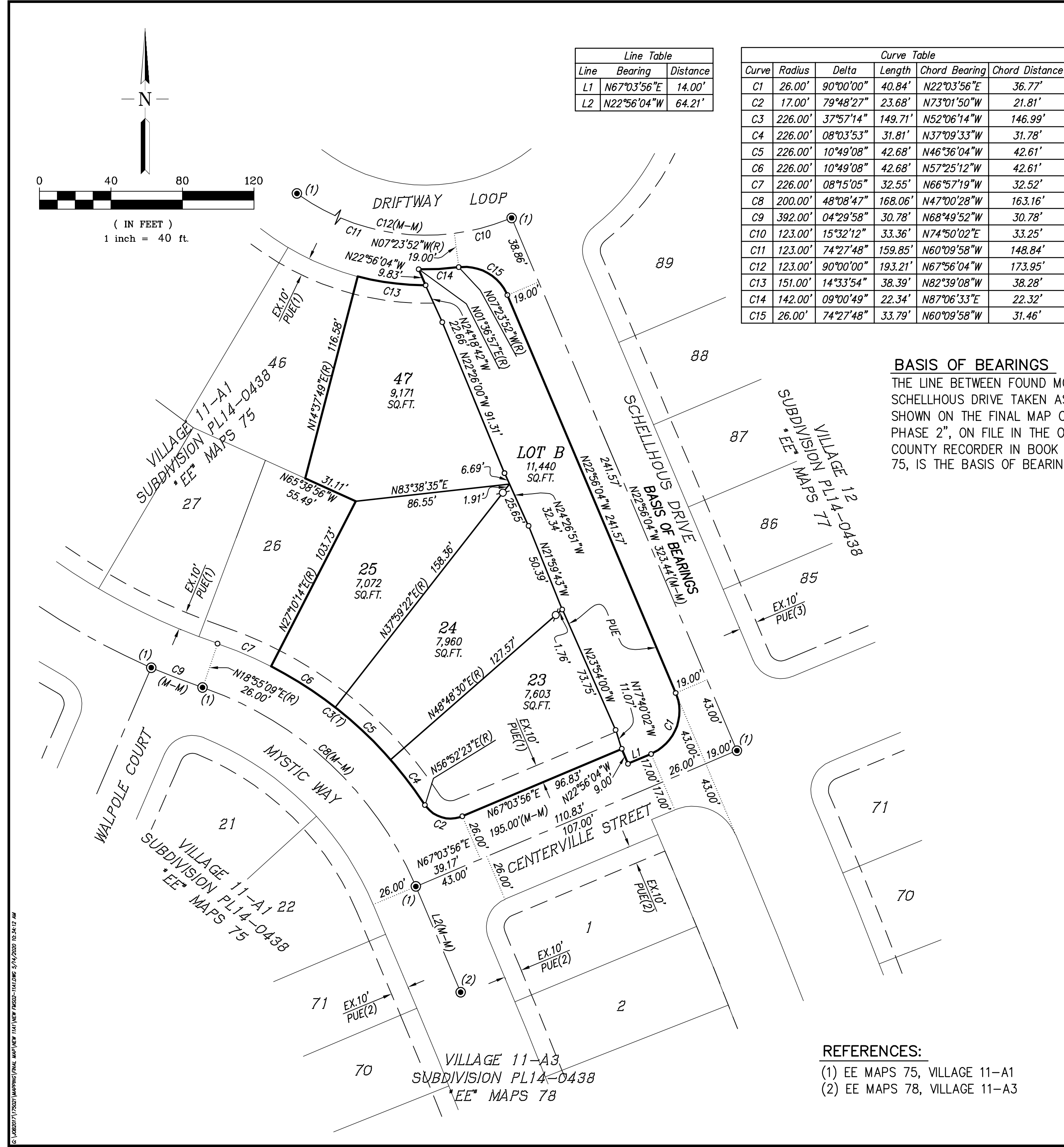
BEING A SUBDIVISION OF LOTS 23, 24, 25, 47 AND LOT B AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL14-0438, ENTITLED "FIDDYMENT RANCH PHASE 2 VILLAGE 11-A1", FILED NOVEMBER 8, 2019, IN BOOK "EE" OF MAPS AT PAGE 75, OFFICIAL RECORDS OF PLACER COUNTY, A PORTION OF SECTIONS 13 AND 24, T. 11 N., R. 5 E., M.D.B. & M.

CITY OF ROSEVILLE
PLACER COUNTY, CALIFORNIA

RUGGERI-JENSEN-AZAR
CIVIL ENGINEERS, PLANNERS, SURVEYORS
MAY 2020

JOB NO. 175021

SHEET 1 OF 2 SHEETS



NOTES:

- ALL MONUMENT TIE LINES ARE AT RIGHT ANGLES TO THE MONUMENT LINE UNLESS OTHERWISE NOTED.
- REAR LOT CORNERS SHALL BE MARKED WITH 1/2" REBAR AND CAPPED WITH LS 6441 AS SHOWN HEREON. FRONT AND SIDE LOT LINES SHALL BE 1' PROJECTED AND MARKED ON BACK OF SIDEWALK WITH 1" BRASS DISK STAMPED LS 6441.
- A GEOTECHNICAL ENGINEERING REPORT (WKA NO 5877.09) DATED 10/06/05 FOR THE FIDDYMENT RANCH II AND III INFRASTRUCTURE IMPROVEMENTS AND RESIDENTIAL DEVELOPMENT, WAS DONE BY WALLACE KUHLMAN & ASSOCIATES, INC. AND IS ON FILE AT THE CITY OF ROSEVILLE DEVELOPMENT SERVICES-ENGINEERING FILE NUMBER 308-660.
- TOTAL AREA OF THIS SUBDIVISION IS 0.99±ACRES, CONSISTING OF 4 RESIDENTIAL LOTS AND 1 LANDSCAPE LOT.
- PURSUANT TO GOVERNMENT CODE SECTION 66499.20.2 OF THE SUBDIVISION MAP ACT, THE LOTS SHOWN HEREON ARE HEREBY MERGED AND RE-SUBDIVIDED AND THE FOLLOWING RIGHT-OF-WAY AND EASEMENTS ARE HEREBY ABANDONED:
A. LOT B PER EE MAPS 75 AS A RIGHT-OF-WAY AND A PUBLIC UTILITY EASEMENT.

LEGEND

- SUBDIVISION BOUNDARY
- LOT LINE
- EXISTING EASEMENT AS NOTED
- CENTER LINE / MONUMENT LINE
- MONUMENT TIE LINE
- EXISTING LOT LINE
- FOUND BRASS DISK IN STANDARD CITY OF ROSEVILLE MONUMENT BOX, STAMPED PER REFERENCE NOTED
- DIMENSION POINT
- SET 5/8" REBAR WITH PLASTIC CAP STAMPED LS 6441
- PUE PUBLIC UTILITY EASEMENT
- EX. EXISTING
- (M-M) MONUMENT TO MONUMENT
- (R) RADIAL BEARING
- (T) TOTAL
- (DATA)(1) RECORD DATA & REFERENCE
- SQ.FT. SQUARE FEET

FINAL MAP OF
FIDDYMENT RANCH PHASE 2
VILLAGE 11-A1-0001
SUBDIVISION NO. PL20-0052

BEING A SUBDIVISION OF LOTS 23, 24, 25, 47 AND LOT B AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL14-0438, ENTITLED "FIDDYMENT RANCH PHASE 2, VILLAGE 11-A1", FILED NOVEMBER 8, 2019, IN BOOK "EE" OF MAPS AT PAGE 75, OFFICIAL RECORDS OF PLACER COUNTY, A PORTION OF SECTIONS 13 AND 24, T. 11 N., R. 5 E., M.D.B. & M.

CITY OF ROSEVILLE
PLACER COUNTY, CALIFORNIA

RUGGERI-JENSEN-AZAR
CIVIL ENGINEERS, PLANNERS, SURVEYORS
MAY 2020

JOB NO. 175021

SHEET 2 OF 2 SHEETS

REFERENCES:

- (1) EE MAPS 75, VILLAGE 11-A1
- (2) EE MAPS 78, VILLAGE 11-A3



COUNCIL COMMUNICATION

CC #: 0849
File #: 0400-07

Title: Fiddymment Ranch Phase 2 Village 11-A3-0001 - Final Map
Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.21.

RECOMMENDATION TO COUNCIL

It is recommended that the City Council approve the final map on file with the City Clerk and accept on behalf of the public, Lots A & B and the rights of way and the easements offered thereon, and approve the abandonment of the rights of way and easements listed thereon.

BACKGROUND

The Development Services, Engineering section, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 29 residential lots and 2 landscape lot.

On September 18, 2019, City Council approved the Fiddymment Ranch Phase 2 Village 11-A3 final map creating a subdivision of 71 residential lots and 2 public landscape lots. The map was then subsequently recorded with the Placer County Recorder's office. During construction of the improvements for the subdivision, it was discovered that the back property line of 29 of the lots needed to be adjusted to match the location of the pilasters and fence that had been installed next to the lots. This new map will relocate the property lines between 29 residential lots and 2 public landscape lots to match the location of the pilasters and fence.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

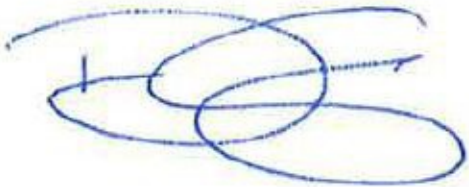
Approval of the Fiddymment Ranch Phase 2 Village 11-A3-0001 final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Fiddymment Ranch Phase 2 Village 11-A3-0001 final map was accomplished with the preparation

of the West Roseville Specific Plan EIR (SCH#2002082057) that was certified by the City of Roseville on February 4, 2004. Because the Fiddymont Ranch Phase 2 Village 11-A3-0001 final map is consistent with project evaluated in the West Roseville Specific Plan EIR, no new effects would be expected to occur and all applicable mitigation measures from the West Roseville Specific Plan EIR will be implemented. As such, no additional CEQA action is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

OWNER’S STATEMENT

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTEREST IN THE LANDS SUBDIVIDED HEREON, HEREBY CONSENT TO THE PREPARATION AND RECORDING OF THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 11–A3–0001" AND DO HEREBY OFFER FOR DEDICATION FOR SPECIFIC PURPOSES THE FOLLOWING:

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS AN EASEMENT FOR PUBLIC PURPOSES:

- A. AS PUBLIC EASEMENTS, THE AREAS SHOWN HEREON AS "PUE" (PUBLIC UTILITY EASEMENT) ARE FOR INSTALLATION AND MAINTENANCE OF, BUT NOT LIMITED TO, ELECTROLIERS, TRAFFIC CONTROL APPURTENANCES, WATER, SEWER, DRAINAGE AND GAS PIPES, AND FOR UNDERGROUND WIRES AND CONDUITS FOR ELECTRICAL, TELEPHONE AND TELEVISION SERVICES, TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER, AND ACROSS LOTS A AND B.

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED IN FEE FOR PUBLIC PURPOSES:

- A. AS PUBLIC RIGHT OF WAY (INCLUDING ALL IMPROVEMENTS THEREON), LOTS A & B.

ATC REALTY ONE, LLC

A DELAWARE LIMITED LIABILITY COMPANY

BY: _____
DAVID L. ASH
ITS: SENIOR VICE PRESIDENT

LENNAR HOMES OF CALIFORNIA, INC.

A CALIFORNIA CORPORATION

BY: _____ BY: _____
NAME: _____ NAME: _____
TITLE: _____ TITLE: _____

RICHMOND AMERICAN HOMES OF MARYLAND, INC.,

A MARYLAND CORPORATION

BY: _____ BY: _____
NAME: _____ NAME: _____
TITLE: _____ TITLE: _____

OWNER’S ACKNOWLEDGEMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF CALIFORNIA)
COUNTY OF _____) SS

ON _____, 2020, BEFORE ME, _____,
A NOTARY PUBLIC, PERSONALLY APPEARED _____
WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S)
WHOSE NAME(S) IS/ ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED
TO ME THAT HE/ SHE/ THEY EXECUTED THE SAME IN HIS/ HER/ THEIR AUTHORIZED
CAPACITY(IES), AND THAT BY HIS /HER /THEIR SIGNATURE(S) ON THE INSTRUMENT THE
PERSON(S), OR THE ENTITY ON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE
INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA
THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL,

SIGNATURE: _____
PRINT NAME: _____
MY COMMISSION NUMBER: _____
MY COMMISSION EXPIRES: _____
PRINCIPAL COUNTY OF BUSINESS: _____

OWNER’S ACKNOWLEDGEMENT

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STATE OF CALIFORNIA)
COUNTY OF _____) SS

ON _____, 2020, BEFORE ME, _____,
A NOTARY PUBLIC, PERSONALLY APPEARED _____
AND _____, WHO PROVED TO ME ON THE BASIS OF
SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ ARE SUBSCRIBED TO
THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/ SHE/ THEY EXECUTED THE
SAME IN HIS/ HER/ THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS /HER /THEIR
SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY ON BEHALF OF WHICH
THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA
THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

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PRINT NAME: _____
MY COMMISSION NUMBER: _____
MY COMMISSION EXPIRES: _____
PRINCIPAL COUNTY OF BUSINESS: _____

OWNER’S ACKNOWLEDGEMENT

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STATE OF CALIFORNIA)
COUNTY OF _____) SS

ON _____, 2020, BEFORE ME, _____, A
NOTARY PUBLIC, PERSONALLY APPEARED _____
AND _____, WHO PROVED TO ME ON THE BASIS OF
SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ ARE SUBSCRIBED TO
THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/ SHE/ THEY EXECUTED THE
SAME IN HIS/ HER/ THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS /HER /THEIR
SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY ON BEHALF OF WHICH
THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA
THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL,

SIGNATURE: _____
PRINT NAME: _____
MY COMMISSION NUMBER: _____
MY COMMISSION EXPIRES: _____
PRINCIPAL COUNTY OF BUSINESS: _____

SURVEYOR’S STATEMENT

THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2, VILLAGE 11–A3–0001" WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF ATC REALTY ONE, LLC., ON JANUARY 1, 2018. I HEREBY STATE THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE APPROVED OR CONDITIONALLY APPROVED TENTATIVE MAP (IF ANY), THAT ALL MONUMENTS ARE OF THE CHARACTER AND OCCUPY THE POSITIONS INDICATED OR THAT THEY WILL BE SET IN THOSE POSITIONS ON OR BEFORE DECEMBER 31, 2020, AND THAT SAID MONUMENTS ARE OR WILL BE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED.

DATED THIS _____ DAY OF _____, 2020.

SCOTT A. SHORTLIDGE, P.L.S. NO. 6441



CITY ENGINEER’S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 11–A3–0001 AND FIND IT TO BE SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS THEREOF, AND THAT IT COMPLIES WITH ALL PROVISIONS OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES.

MARC STOUT
CITY ENGINEER, CITY OF ROSEVILLE
R.C.E. #69879 EXPIRATION DATE: SEPTEMBER 30, 2020

I HEREBY STATE THAT I AM SATISFIED THAT THIS FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 11–A3–0001 IS TECHNICALLY CORRECT.

FOR MARC STOUT, CITY ENGINEER, CITY OF ROSEVILLE

TIMOTHY G. BLAIR
PLS. #8278 EXPIRATION DATE: DECEMBER 31, 2021



CITY CLERK’S STATEMENT

I HEREBY CERTIFY THAT THE CITY COUNCIL, CITY OF ROSEVILLE, HAS APPROVED THIS FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 11–A3–0001 AND HAS ACCEPTED ON BEHALF OF THE PUBLIC, LOTS A & B AND ALL EASEMENTS OFFERED FOR DEDICATION AND HAS APPROVED THE ABANDONMENT OF THE RIGHT OF WAY AND EASEMENTS LISTED IN NOTE 5 ON SHEET 2 OF THIS MAP.

DATED

CITY CLERK, CITY OF ROSEVILLE

BY: _____
ASSISTANT CITY CLERK

COUNTY RECORDER’S STATEMENT

FILED FOR RECORD THIS _____ DAY OF _____, 2020, AT _____M.,
IN BOOK _____ OF MAPS AT PAGES _____ AT THE REQUEST OF OLD REPUBLIC
TITLE COMPANY.

SERIES NO. _____
FEE: \$ _____

RYAN RONCO
COUNTY RECORDER IN AND FOR
PLACER COUNTY, CALIFORNIA

BY: _____
DEPUTY

FINAL MAP OF
FIDDYMENT RANCH PHASE 2
VILLAGE 11– A3– 0001
SUBDIVISION NO. PL20–0052

BEING A SUBDIVISION OF LOTS 1 THRU 29 AND LOTS A AND B
AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL14–0438,
ENTITLED "FIDDYMENT RANCH PHASE 2 VILLAGE 11–A3", FILED
NOVEMBER 8, 2019, IN BOOK "EE" OF MAPS AT PAGE 78,
OFFICIAL RECORDS OF PLACER COUNTY, A PORTION OF
SECTIONS 13 AND 24, T. 11 N., R. 5 E., M.D.B. & M.

CITY OF ROSEVILLE
PLACER COUNTY, CALIFORNIA

RUGGERI–JENSEN–AZAR
CIVIL ENGINEERS, PLANNERS, SURVEYORS
MAY 2020

JOB NO. 175021

SHEET 1 OF 5 SHEETS

REFERENCES

- (1) DD MAPS 88, LARGE LOTS
- (2) EE MAPS 77, F12
- (3) EE MAPS 78, 11-A3
- (4) EE MAPS 75, 11-A1

BASIS OF BEARINGS

THE LINE BETWEEN FOUND REBAR IN PRUETT DRIVE TAKEN AS N00°13'02"W, AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL-0438, "FIDDYMENT RANCH PHASE 2, VILLAGE 11-A3", ON FILE IN THE OFFICE OF THE PLACER COUNTY RECORDER IN BOOK "EE" OF MAPS AT PAGE 78, IS THE BASIS OF BEARINGS FOR THIS MAP.

NOTES:

- 1. ALL MONUMENT TIE LINES ARE AT RIGHT ANGLES TO THE MONUMENT LINE UNLESS OTHERWISE NOTED.
- 2. REAR LOT CORNERS SHALL BE MARKED WITH 1/2" REBAR AND CAPPED WITH LS 6441 AS SHOWN HEREON. FRONT AND SIDE LOT LINES SHALL BE 1' PROJECTED AND MARKED ON BACK OF SIDEWALK WITH 1" BRASS DISK STAMPED LS 6441.
- 3. A GEOTECHNICAL ENGINEERING REPORT (WKA NO 5877.09) DATED 10/06/05 FOR THE FIDDYMENT RANCH II AND III INFRASTRUCTURE IMPROVEMENTS AND RESIDENTIAL DEVELOPMENT, WAS DONE BY WALLACE KUHLE & ASSOCIATES, INC. AND IS ON FILE AT THE CITY OF ROSEVILLE DEVELOPMENT SERVICES-ENGINEERING FILE NUMBER 308-660.
- 4. TOTAL AREA OF THIS SUBDIVISION IS 4.83±ACRES, CONSISTING OF 29 RESIDENTIAL LOTS AND 2 LANDSCAPE LOTS.
- 5. PURSUANT TO GOVERNMENT CODE SECTION 66499.20.2 OF THE SUBDIVISION MAP ACT, THE LOTS SHOWN HEREON ARE HEREBY MERGED AND RE-SUBDIVIDED AND THE FOLLOWING RIGHT-OF-WAY AND EASEMENTS ARE HEREBY ABANDONED:
 - A. LOTS A AND B PER EE MAPS 78 AS RIGHT-OF-WAY AND PUBLIC UTILITY EASEMENTS.

BOUNDARY MAP

- SHEET COVERAGE
- SHEET NUMBER

LEGEND

- SUBDIVISION BOUNDARY
- LOT LINE
- EXISTING EASEMENT AS NOTED
- CENTER LINE / MONUMENT LINE
- MONUMENT TIE LINE
- EXISTING LOT LINE
- FOUND BRASS DISK IN STANDARD CITY OF ROSEVILLE MONUMENT BOX, PER REFERENCE NOTED
- DIMENSION POINT
- SET 5/8" REBAR WITH PLASTIC CAP STAMPED LS 6441
- PUE PUBLIC UTILITY EASEMENT
- EX. EXISTING
- (M-M) MONUMENT TO MONUMENT
- (R) RADIAL BEARING
- (T) TOTAL
- (DATA)(1) RECORD DATA & REFERENCE
- SQ.FT. SQUARE FEET

FINAL MAP OF
FIDDYMENT RANCH PHASE 2
VILLAGE 11-A3-0001
SUBDIVISION NO. PL20-0052

BEING A SUBDIVISION OF LOTS 1 THRU 29 AND LOTS A AND B AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL14-0438, ENTITLED "FIDDYMENT RANCH PHASE 2 VILLAGE 11-A3", FILED NOVEMBER 8, 2019, IN BOOK "EE" OF MAPS AT PAGE 78, OFFICIAL RECORDS OF PLACER COUNTY, A PORTION OF SECTIONS 13 AND 24, T. 11 N., R. 5 E., M.D.B. & M.

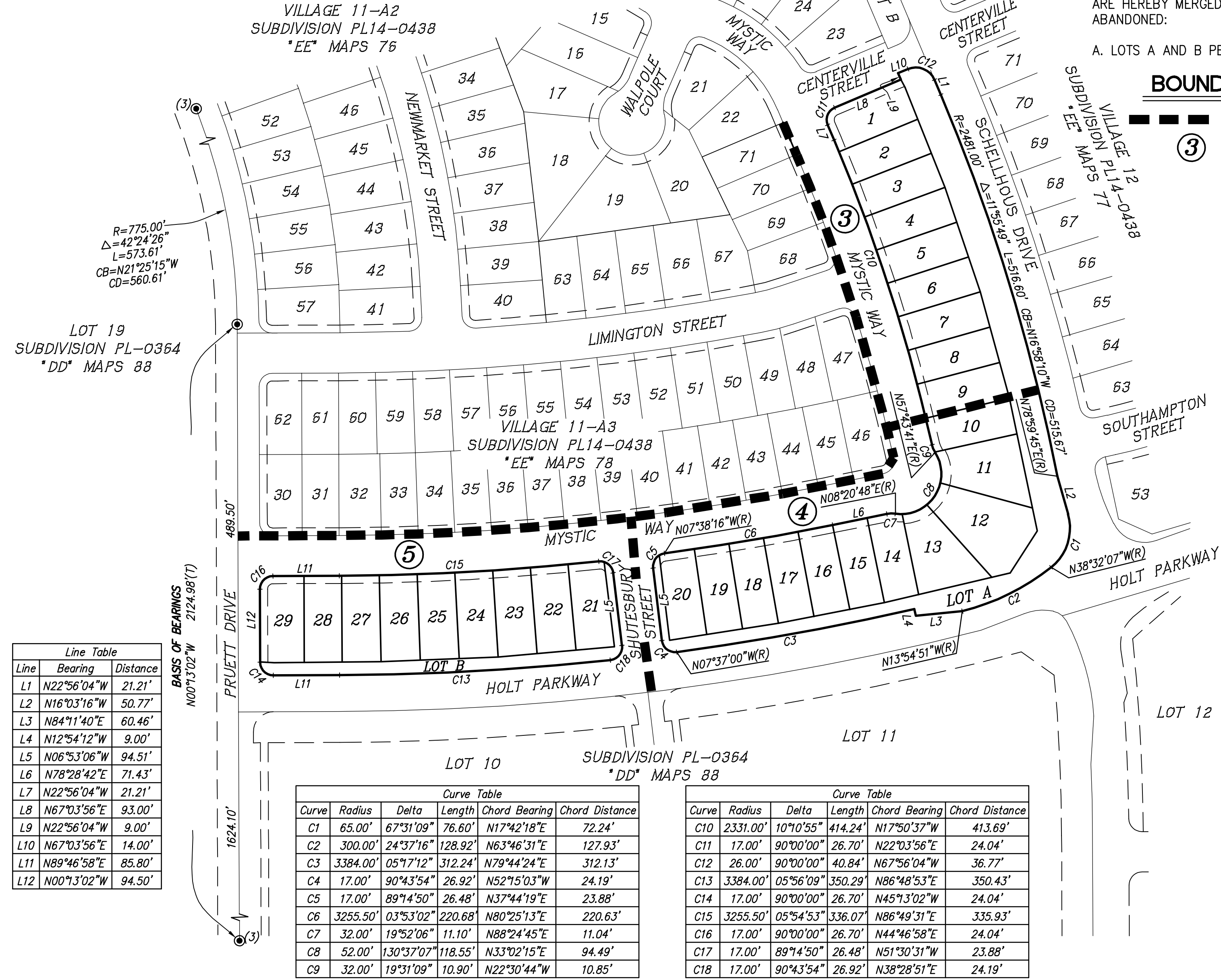
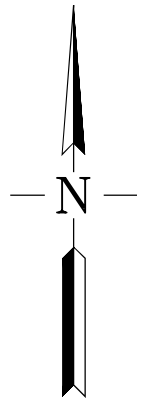
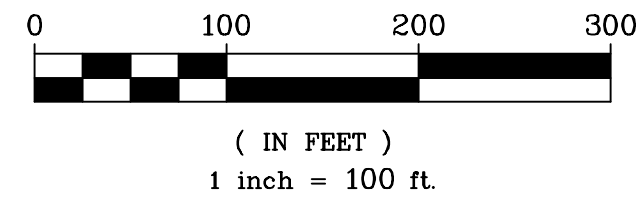
CITY OF ROSEVILLE
PLACER COUNTY, CALIFORNIA

RUGGERI-JENSEN-AZAR
CIVIL ENGINEERS, PLANNERS, SURVEYORS

MAY 2020

JOB NO. 175021

SHEET 2 OF 5 SHEETS

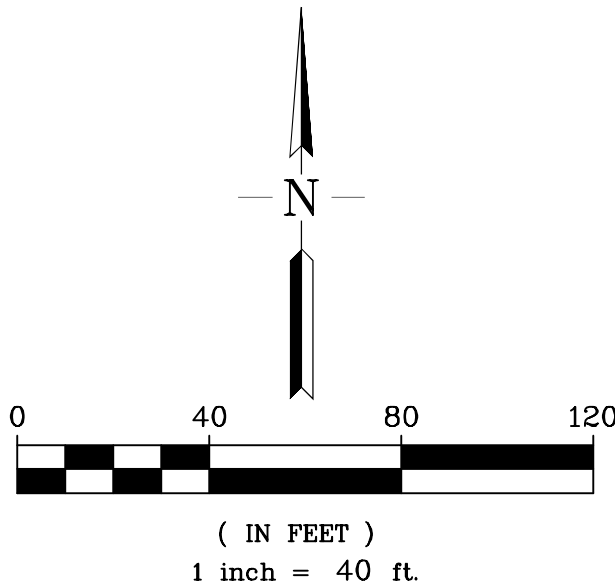


Line Table		
Line	Bearing	Distance
L1	N22°56'04"W	21.21'
L2	N16°03'16"W	50.77'
L3	N84°11'40"E	60.46'
L4	N12°54'12"W	9.00'
L5	N06°53'06"W	94.51'
L6	N78°28'42"E	71.43'
L7	N22°56'04"W	21.21'
L8	N67°03'56"E	93.00'
L9	N22°56'04"W	9.00'
L10	N67°03'56"E	14.00'
L11	N89°46'58"E	85.80'
L12	N00°13'02"W	94.50'

Curve Table					
Curve	Radius	Delta	Length	Chord Bearing	Chord Distance
C1	65.00'	67°31'09"	76.60'	N17°42'18"E	72.24'
C2	300.00'	24°37'16"	128.92'	N63°46'31"E	127.93'
C3	3384.00'	05°17'12"	312.24'	N79°44'24"E	312.13'
C4	17.00'	90°43'54"	26.92'	N52°15'03"W	24.19'
C5	17.00'	89°14'50"	26.48'	N37°44'19"E	23.88'
C6	3255.50'	03°53'02"	220.68'	N80°25'13"E	220.63'
C7	32.00'	19°52'06"	11.10'	N88°24'45"E	11.04'
C8	52.00'	130°37'07"	118.55'	N33°02'15"E	94.49'
C9	32.00'	19°31'09"	10.90'	N22°30'44"W	10.85'

Curve Table					
Curve	Radius	Delta	Length	Chord Bearing	Chord Distance
C10	2331.00'	10°10'55"	414.24'	N17°50'37"W	413.69'
C11	17.00'	90°00'00"	26.70'	N22°03'56"E	24.04'
C12	26.00'	90°00'00"	40.84'	N67°56'04"W	36.77'
C13	3384.00'	05°56'09"	350.29'	N86°48'53"E	350.43'
C14	17.00'	90°00'00"	26.70'	N45°13'02"W	24.04'
C15	3255.50'	05°54'53"	336.07'	N86°49'31"E	335.93'
C16	17.00'	90°00'00"	26.70'	N44°46'58"E	24.04'
C17	17.00'	89°14'50"	26.48'	N51°30'31"W	23.88'
C18	17.00'	90°43'54"	26.92'	N38°28'51"E	24.19'

SEE SHEET 2 FOR BASIS OF BEARINGS,
LEGEND, NOTES, AND REFERENCES.



Line Table		
Line	Bearing	Distance
L1	N67°03'56"E	14.00'
L2	N22°56'04"W	21.21'
L3	N67°03'56"E	26.00'
L4	N22°56'04"W	43.00'
L5	N22°56'04"W	64.21'

Curve Table					
Curve	Radius	Delta	Length	Chord Bearing	Chord Distance
C1	17.00'	90°00'00"	26.70'	N22°03'56"E	24.04'
C2	26.00'	90°00'00"	40.84'	N67°56'04"W	36.77'
C3	2331.00'	00°24'40"	16.72'	N22°43'44"W	16.72'
C4	2331.00'	01°06'49"	45.31'	N21°58'00"W	45.31'
C5	2331.00'	01°06'49"	45.31'	N20°51'11"W	45.31'
C6	2331.00'	01°06'49"	45.31'	N19°44'22"W	45.31'
C7	2331.00'	01°06'49"	45.31'	N18°37'33"W	45.31'
C8	2331.00'	01°06'49"	45.31'	N17°30'44"W	45.31'
C9	2331.00'	01°06'49"	45.31'	N16°23'55"W	45.31'
C10	2331.00'	01°06'49"	45.31'	N15°17'06"W	45.31'
C11	2331.00'	01°06'49"	45.31'	N14°10'17"W	45.31'

FINAL MAP OF
FIDDYMENT RANCH PHASE 2
VILLAGE 11-A3-0001
SUBDIVISION NO. PL20-0052

BEING A SUBDIVISION OF LOTS 1 THRU 29 AND LOTS A AND B
AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL14-0438,
ENTITLED "FIDDYMENT RANCH PHASE 2 VILLAGE 11-A3", FILED
NOVEMBER 8, 2019, IN BOOK "EE" OF MAPS AT PAGE 78,
OFFICIAL RECORDS OF PLACER COUNTY, A PORTION OF
SECTIONS 13 AND 24, T. 11 N., R. 5 E., M.D.B. & M.

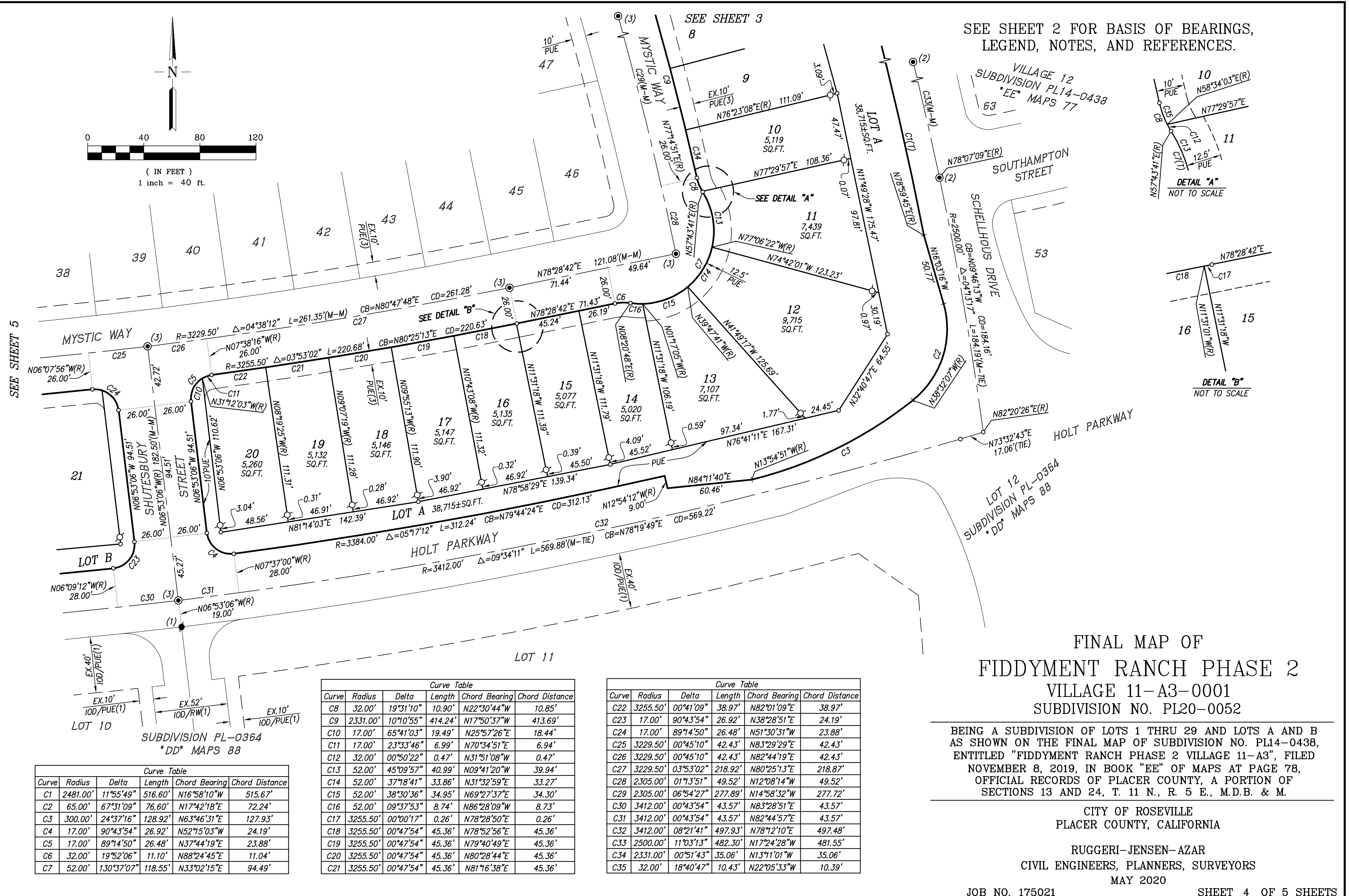
CITY OF ROSEVILLE
PLACER COUNTY, CALIFORNIA

RUGGERI-JENSEN-AZAR
CIVIL ENGINEERS, PLANNERS, SURVEYORS
MAY 2020

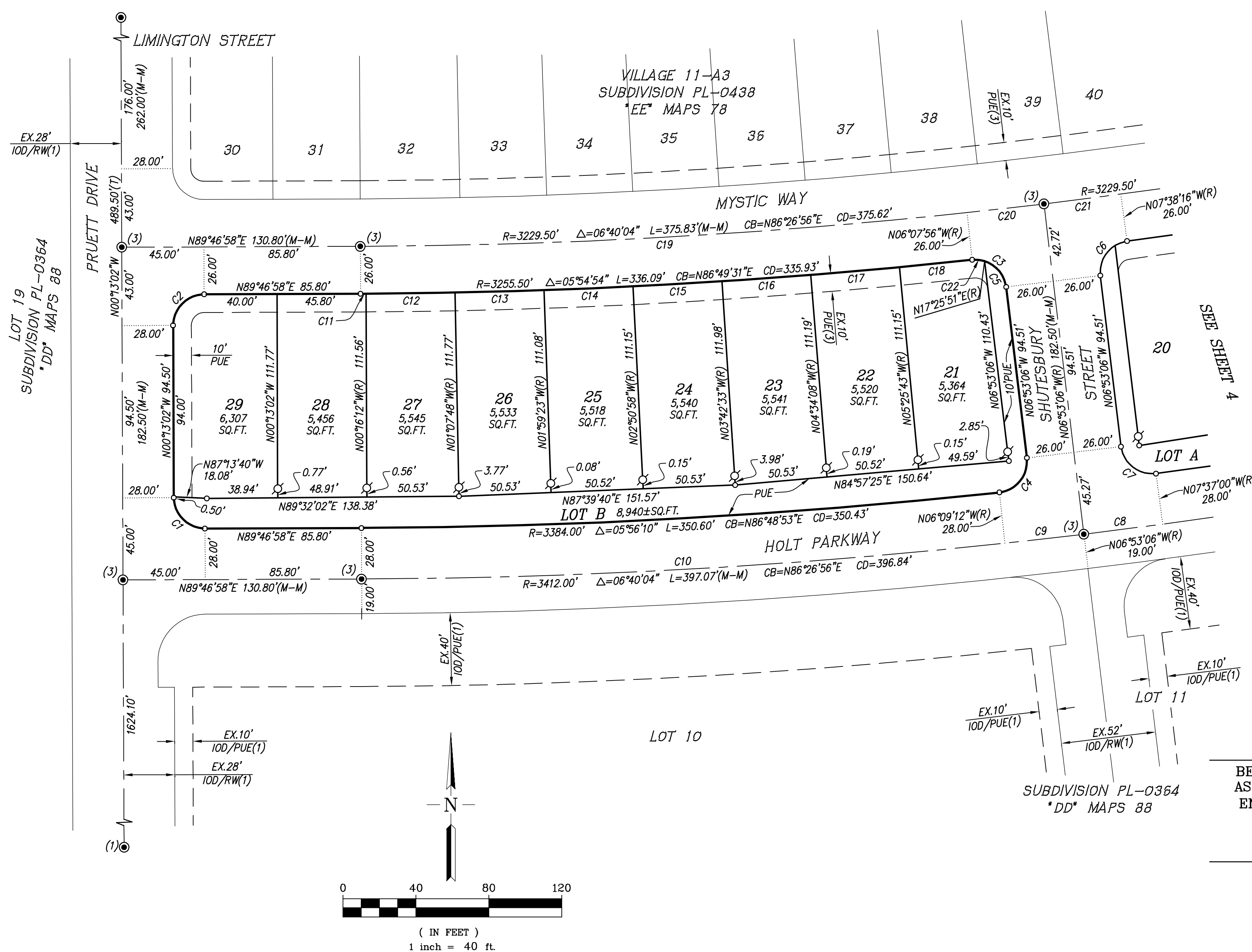
JOB NO. 175021

SHEET 3 OF 5 SHEETS

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SEE SHEET 2 FOR BASIS OF BEARINGS,
LEGEND, NOTES, AND REFERENCES.



Curve Table					
Curve	Radius	Delta	Length	Chord Bearing	Chord Distance
C1	17.00'	90°00'00"	26.70'	N45°13'02"W	24.04'
C2	17.00'	90°00'00"	26.70'	N44°46'58"E	24.04'
C3	17.00'	89°14'50"	26.48'	N51°30'31"W	23.88'
C4	17.00'	90°43'54"	26.92'	N38°28'51"E	24.19'
C5	17.00'	65°41'03"	19.49'	N39°43'38"W	18.44'
C6	17.00'	89°14'50"	26.48'	N37°44'19"E	23.88'
C7	17.00'	90°43'54"	26.92'	N52°15'03"W	24.19'
C8	3412.00'	00°43'54"	43.57'	N82°44'57"E	43.57'
C9	3412.00'	00°43'54"	43.57'	N83°28'51"E	43.57'
C10	3412.00'	05°56'10"	353.50'	N86°48'53"E	353.33'
C11	3255.50'	00°03'10"	3.00'	N89°45'23"E	3.00'
C12	3255.50'	00°51'35"	48.85'	N89°18'00"E	48.85'
C13	3255.50'	00°51'35"	48.85'	N88°26'25"E	48.85'
C14	3255.50'	00°51'35"	48.85'	N87°34'50"E	48.85'
C15	3255.50'	00°51'35"	48.85'	N86°43'15"E	48.85'
C16	3255.50'	00°51'35"	48.85'	N85°51'40"E	48.85'
C17	3255.50'	00°51'35"	48.85'	N85°00'04"E	48.85'
C18	3255.50'	00°42'12"	39.97'	N84°13'11"E	39.97'
C19	3229.50'	05°54'54"	333.40'	N86°49'31"E	333.24'
C20	3229.50'	00°45'10"	42.43'	N83°29'29"E	42.43'
C21	3229.50'	00°45'10"	42.43'	N82°44'19"E	42.43'
C22	17.00'	23°33'46"	6.99'	N84°21'02"W	6.94'

FINAL MAP OF
FIDDYMENT RANCH PHASE 2
VILLAGE 11-A3-0001
SUBDIVISION NO. PL20-0052

BEING A SUBDIVISION OF LOTS 1 THRU 29 AND LOTS A AND B
AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL14-0438,
ENTITLED "FIDDYMENT RANCH PHASE 2 VILLAGE 11-A3", FILED
NOVEMBER 8, 2019, IN BOOK "EE" OF MAPS AT PAGE 78,
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SECTIONS 13 AND 24, T. 11 N., R. 5 E., M.D.B. & M.

CITY OF ROSEVILLE
PLACER COUNTY, CALIFORNIA

RUGGERI-JENSEN-AZAR
CIVIL ENGINEERS, PLANNERS, SURVEYORS
MAY 2020

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COUNCIL COMMUNICATION

CC #: 0850
File #: 0400-07

Title: Fiddymment Ranch Phase 2 Village 12-0001 - Final Map
Contact: Kerry Andrews 916-774-5346 kandrews@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.22.

RECOMMENDATION TO COUNCIL

It is recommended that the City Council approve the final map on file with the City Clerk and accept on behalf of the public, Lot B and the rights of way and the easements offered thereon, and approve the abandonment of the rights of way and easements listed thereon.

BACKGROUND

The Development Services, Engineering section, has reviewed the subject final map and found that it is in compliance with the Subdivision Map Act and the City's Subdivision Ordinance and all conditions of the tentative map have been met. This map will create 6 residential lots and 1 landscape lot.

On September 18, 2019, City Council approved the Fiddymment Ranch Phase 2 Village 12 final map creating a subdivision of 97 residential lots and 2 public landscape lots. The map was then subsequently recorded with the Placer County Recorder's office. During construction of the improvements for the subdivision, it was discovered that the back property line of 6 of the lots needed to be adjusted to match the location of the pilasters and fence that had been installed next to the lots. This new map will relocate the property lines between 6 residential lots and a public landscape lot to match the location of the pilasters and fence.

FISCAL IMPACT

There is no fiscal impact to the City's General Fund associated with this approval.

ENVIRONMENTAL REVIEW

Approval of the Fiddymment Ranch Phase 2 Village 12-0001 final map is an action that is subject to California Environmental Quality Act (CEQA). Project level CEQA compliance for the Fiddymment Ranch Phase 2 Village 12-0001 final map was accomplished with the preparation of the West

Roseville Specific Plan EIR (SCH#2002082057) that was certified by the City of Roseville on February 4, 2004. Because the Fiddymment Ranch Phase 2 Village 12-0001 final map is consistent with project evaluated in the West Roseville Specific Plan EIR, no new effects would be expected to occur and all applicable mitigation measures from the West Roseville Specific Plan EIR will be implemented. As such, no additional CEQA action is required at this time.

Respectfully Submitted,

Kerry Andrews, Assistant Engineer

Mike Isom, Development Services Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Final Map

OWNER’S STATEMENT

THE UNDERSIGNED HEREBY CERTIFY THAT THEY ARE THE ONLY PERSONS HAVING ANY RECORD TITLE INTEREST IN THE LANDS SUBDIVIDED HEREON, HEREBY CONSENT TO THE PREPARATION AND RECORDING OF THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 12-0001" AND DO HEREBY OFFER FOR DEDICATION FOR SPECIFIC PURPOSES THE FOLLOWING".

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED AS AN EASEMENT FOR PUBLIC PURPOSES:

- A. AS PUBLIC EASEMENTS, THE AREAS SHOWN HEREON AS "PUE" (PUBLIC UTILITY EASEMENT) ARE FOR INSTALLATION AND MAINTENANCE OF, BUT NOT LIMITED TO, ELECTROLIERS, TRAFFIC CONTROL APPURTENANCES, WATER, SEWER, DRAINAGE AND GAS PIPES, AND FOR UNDERGROUND WIRES AND CONDUITS FOR ELECTRICAL, TELEPHONE AND TELEVISION SERVICES, TOGETHER WITH ANY AND ALL APPURTENANCES PERTAINING THERETO ON, OVER, UNDER, AND ACROSS LOT B.

THE REAL PROPERTY DESCRIBED BELOW IS DEDICATED IN FEE FOR PUBLIC PURPOSES:

- A. AS PUBLIC RIGHT OF WAY (INCLUDING ALL IMPROVEMENTS THEREON), LOT B.

ATC REALTY ONE, LLC
A DELAWARE LIMITED LIABILITY COMPANY

BY: _____
DAVID L. ASH
ITS: SENIOR VICE PRESIDENT

LENNAR HOMES OF CALIFORNIA, INC.
A CALIFORNIA CORPORATION

BY: _____ BY: _____
NAME: _____ NAME: _____
TITLE: _____ TITLE: _____

OWNER’S ACKNOWLEDGEMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF CALIFORNIA)
COUNTY OF _____) SS

ON _____, 2020, BEFORE ME, _____
A NOTARY PUBLIC, PERSONALLY APPEARED _____
WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/ SHE/ THEY EXECUTED THE SAME IN HIS/ HER/ THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS /HER /THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY ON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL,

SIGNATURE: _____
PRINT NAME: _____
MY COMMISSION NUMBER: _____
MY COMMISSION EXPIRES: _____
PRINCIPAL COUNTY OF BUSINESS: _____

OWNER’S ACKNOWLEDGEMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH THIS CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF CALIFORNIA)
COUNTY OF _____) SS

ON _____, 2020, BEFORE ME, _____
A NOTARY PUBLIC, PERSONALLY APPEARED _____
AND _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/ SHE/ THEY EXECUTED THE SAME IN HIS/ HER/ THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS /HER /THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY ON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND AND OFFICIAL SEAL,

SIGNATURE: _____
PRINT NAME: _____
MY COMMISSION NUMBER: _____
MY COMMISSION EXPIRES: _____
PRINCIPAL COUNTY OF BUSINESS: _____

SURVEYOR’S STATEMENT

THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2, VILLAGE 12-0001" WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF ATC REALTY ONE, LLC., ON JANUARY 1, 2018. I HEREBY STATE THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE APPROVED OR CONDITIONALLY APPROVED TENTATIVE MAP (IF ANY), THAT ALL MONUMENTS ARE OF THE CHARACTER AND OCCUPY THE POSITIONS INDICATED OR THAT THEY WILL BE SET IN THOSE POSITIONS ON OR BEFORE DECEMBER 31, 2020, AND THAT SAID MONUMENTS ARE OR WILL BE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED.

DATED THIS ____ DAY OF _____, 2020.

SCOTT A. SHORTLIDGE, P.L.S. NO. 6441



CITY ENGINEER’S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 12-0001" AND FIND IT TO BE SUBSTANTIALLY THE SAME AS THE TENTATIVE MAP ON FILE AND ANY APPROVED ALTERATIONS THEREOF, AND THAT IT COMPLIES WITH ALL PROVISIONS OF THE SUBDIVISION MAP ACT AND ALL APPLICABLE CITY ORDINANCES.

MARC STOUT DATE
CITY ENGINEER, CITY OF ROSEVILLE
R.C.E. #69879 EXPIRATION DATE: SEPTEMBER 30, 2020

I HEREBY STATE THAT I AM SATISFIED THAT THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 12-0001" IS TECHNICALLY CORRECT.

FOR MARC STOUT, CITY ENGINEER, CITY OF ROSEVILLE

TIMOTHY G. BLAIR DATE
PLS. #8278 EXPIRATION DATE: DECEMBER 31, 2021



CITY CLERK’S STATEMENT

I HEREBY CERTIFY THAT THE CITY COUNCIL, CITY OF ROSEVILLE, HAS APPROVED THIS "FINAL MAP OF FIDDYMENT RANCH PHASE 2 VILLAGE 12-0001" AND HAS ACCEPTED ON BEHALF OF THE PUBLIC, LOT B AND THE EASEMENTS OFFERED HEREON FOR DEDICATION AND HAS APPROVED THE ABANDONMENT OF THE RIGHT OF WAY AND EASEMENT LISTED IN NOTE 5 ON SHEET 2 OF THIS MAP.

DATED _____ CITY CLERK, CITY OF ROSEVILLE
BY: _____
ASSISTANT CITY CLERK

COUNTY RECORDER’S STATEMENT

FILED FOR RECORD THIS ____ DAY OF _____, 2020, AT _____M., IN BOOK ____ OF MAPS AT PAGES ____ AT THE REQUEST OF OLD REPUBLIC TITLE COMPANY.

SERIES NO. _____ RYAN RONCO
COUNTY RECORDER IN AND FOR
FEE: \$ _____ PLACER COUNTY, CALIFORNIA
BY: _____
DEPUTY

FINAL MAP OF
FIDDYMENT RANCH PHASE 2
VILLAGE 12-0001
SUBDIVISION NO. PL20-0052

BEING A SUBDIVISION OF LOTS 48 THRU 53 AND LOT B AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL14-0438, ENTITLED "FIDDYMENT RANCH PHASE 2 VILLAGE 12", FILED NOVEMBER 8, 2019, IN BOOK "EE" OF MAPS AT PAGE 77, OFFICIAL RECORDS OF PLACER COUNTY, A PORTION OF SECTIONS 13 AND 24, T. 11 N., R. 5 E., M.D.B. & M.

CITY OF ROSEVILLE
PLACER COUNTY, CALIFORNIA

RUGGERI-JENSEN-AZAR
CIVIL ENGINEERS, PLANNERS, SURVEYORS
MAY 2020

Curve Table				
Curve	Radius	Delta	Length	Chord Bearing
C1	45.00'	82°24'50"	64.73'	N68°14'05"W
C2	282.00'	10°11'16"	50.14'	N21°56'02"W
C3	282.00'	04°04'59"	20.10'	N14°47'55"W
C4	17.00'	90°52'34"	26.96'	N32°40'52"E
C5	526.00'	04°34'26"	41.99'	N75°49'56"E
C6	500.00'	04°34'25"	39.91'	N75°49'56"E
C7	282.00'	10°11'16"	50.14'	N21°56'02"W
C8	2500.00'	00°58'06"	42.25'	N12°21'54"W
C9	2500.00'	01°26'00"	62.54'	N11°09'51"W
C10	2500.00'	02°47'17"	121.65'	N09°03'13"W
C11	2500.00'	00°36'32"	26.57'	N10°08'35"W
C12	2500.00'	02°10'45"	95.08'	N08°44'56"W
C13	3412.00'	09°34'11"	569.88'	N78°19'49"E

Line Table		
Line	Bearing	Distance
L1	N88°05'10"W	16.49'
L2	N70°33'30"E	46.05'
L3	N78°07'09"E	13.60'
L4	N08°36'47"W	20.79'
L5	N79°33'09"E	31.58'
L6	N80°09'41"E	14.02'
L7	N73°32'43"E	17.06'

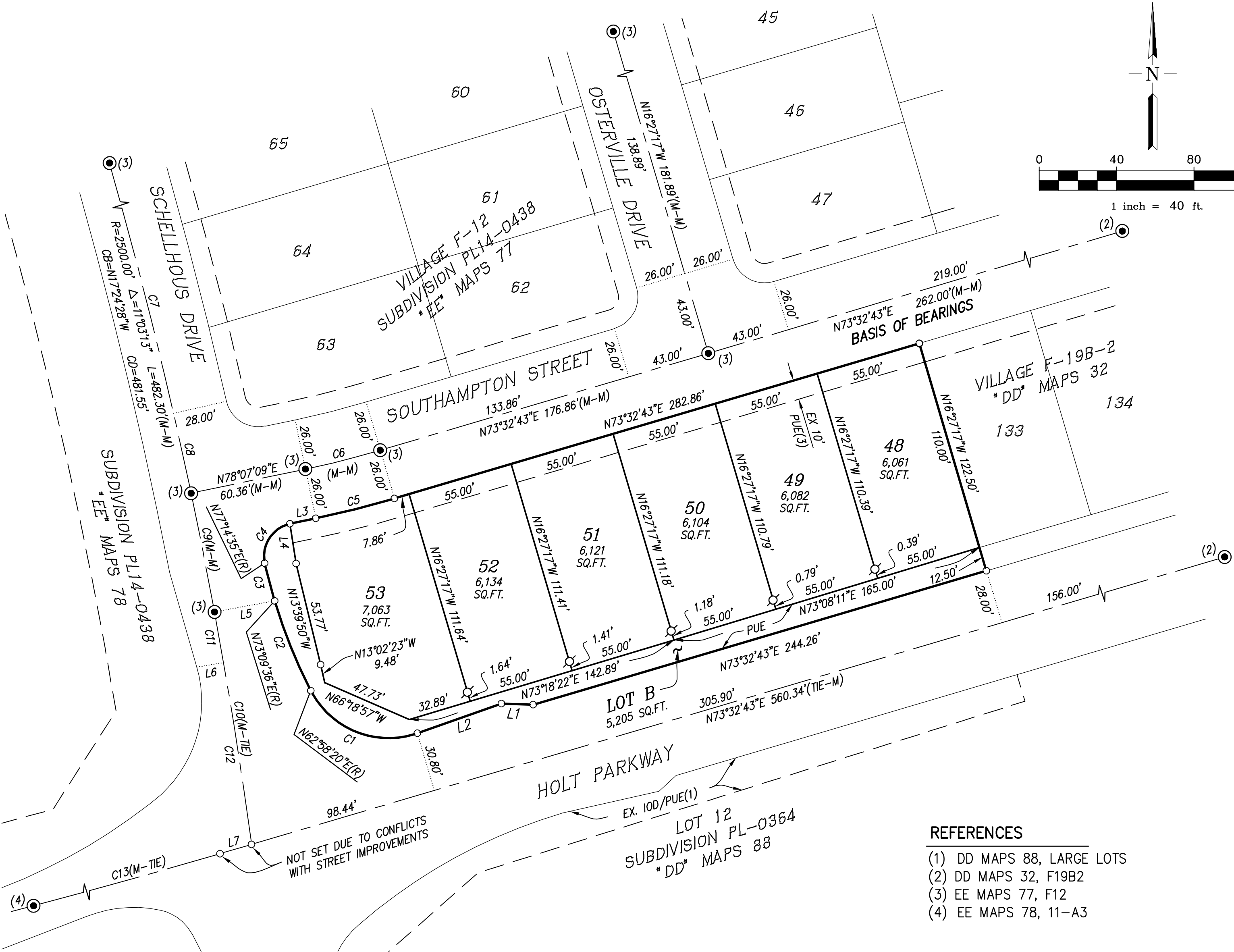
BASIS OF BEARINGS

THE LINE BETWEEN FOUND MONUMENTS IN SOUTHAMPTON STREET TAKEN AS N73°32'43"E, AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL14-0438, "FIDDYMENT RANCH PHASE 2", ON FILE IN THE OFFICE OF THE PLACER COUNTY RECORDER IN BOOK "EE" OF MAPS AT PAGE 77, IS THE BASIS OF BEARINGS FOR THIS MAP.

NOTES:

1. ALL MONUMENT TIE LINES ARE AT RIGHT ANGLES TO THE MONUMENT LINE UNLESS OTHERWISE NOTED.
2. REAR LOT CORNERS SHALL BE MARKED WITH 1/2" REBAR AND CAPPED WITH LS 6441 AS SHOWN HEREON. FRONT AND SIDE LOT LINES SHALL BE 1' PROJECTED AND MARKED ON BACK OF SIDEWALK WITH 1" BRASS DISK STAMPED LS 6441.
3. A GEOTECHNICAL ENGINEERING REPORT (WKA NO 5877.09) DATED 10/06/05 FOR THE FIDDYMENT RANCH II AND III INFRASTRUCTURE IMPROVEMENTS AND RESIDENTIAL DEVELOPMENT, WAS DONE BY WALLACE KUHL & ASSOCIATES, INC. AND IS ON FILE AT THE CITY OF ROSEVILLE DEVELOPMENT SERVICES-ENGINEERINGFILE NUMBER 308-660.
4. TOTAL AREA OF THIS SUBDIVISION IS 0.98±ACRES, CONSISTING OF 6 RESIDENTIAL LOTS AND 1 LANDSCAPE LOT.
5. PURSUANT TO GOVERNMENT CODE SECTION 66499.20.2 OF THE SUBDIVISION MAP ACT, THE LOT SHOWN HEREON IS HEREBY MERGED AND RE-SUBDIVIDED AND THE FOLLOWING RIGHT-OF-WAY AND EASEMENTS ARE HEREBY ABANDONED:

A. LOT B PER EE MAPS 77 IS HEREBY ABANDONED AS A RIGHT-OF-WAY AND AS A PUBLIC UTILITY EASEMENT.



LEGEND

SUBDIVISION BOUNDARY

LOT LINE

EXISTING EASEMENT AS NOTED

CENTER LINE / MONUMENT LINE

MONUMENT TIE LINE

EXISTING LOT LINE

BRASS DISK IN STANDARD CITY OF ROSEVILLE MONUMENT BOX, STAMPED PER REFERENCE AS NOTED

SET 5/8" REBAR WITH PLASTIC CAP STAMPED LS 6441

DIMENSION POINT

PUE PUBLIC UTILITY EASEMENT

IOD IRREVOCABLE OFFER OF DEDICATION

RW RIGHT OF WAY

EX. EXISTING

(M-M) MONUMENT TO MONUMENT

(R) RADIAL BEARING

(T) TOTAL

(DATA)(1) RECORD DATA & REFERENCE

SQ.FT. SQUARE FEET

FINAL MAP OF
FIDDYMENT RANCH PHASE 2
VILLAGE 12-0001
SUBDIVISION NO. PL20-0052

BEING A SUBDIVISION OF LOTS 48 THRU 53 AND LOT B AS SHOWN ON THE FINAL MAP OF SUBDIVISION NO. PL14-0438, ENTITLED "FIDDYMENT RANCH PHASE 2 VILLAGE 12", FILED NOVEMBER 8, 2019, IN BOOK "EE" OF MAPS AT PAGE 77, OFFICIAL RECORDS OF PLACER COUNTY, A PORTION OF SECTIONS 13 AND 24, T. 11 N., R. 5 E., M.D.B. & M.

CITY OF ROSEVILLE
PLACER COUNTY, CALIFORNIA

RUGGERI-JENSEN-AZAR
CIVIL ENGINEERS, PLANNERS, SURVEYORS
MAY 2020

REFERENCES

- (1) DD MAPS 88, LARGE LOTS
- (2) DD MAPS 32, F19B2
- (3) EE MAPS 77, F12
- (4) EE MAPS 78, 11-A3



COUNCIL COMMUNICATION

CC #: 0866
File #: 0102-06

Title: Proclamation - Park and Recreation Month
Contact: Ellen Worland 916-774-5131 eworland@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 7.23.

RECOMMENDATION TO COUNCIL

Proclaim July, 2020 as Park and Recreation Month and encourage citizens to join with their communities in participation of Park and Recreation Month.

BACKGROUND

Not applicable.

FISCAL IMPACT

Not applicable.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378.

The proclaiming of a Park and Recreation Month meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Helen Dreyer, City Clerk Technician

Sonia Orozco, City Clerk



Dominick Casey, City Manager

ATTACHMENTS:

Description

Proclamation

CITY OF ROSEVILLE



PARK AND RECREATION MONTH

July 2020

WHEREAS, the City of Roseville is committed to recognizing Parks and Recreation programs are an integral part of communities throughout this country; and

WHEREAS, Parks and Recreation promote physical, emotional, mental health, and wellness through organized and self-directed fitness, play, and activity; and

WHEREAS, our Parks and Recreation are vitally important to establishing and maintaining the quality of life in our communities, enhancing the health of all residents, and contributing to the economic and environmental well-being of our region; and

WHEREAS, Parks and Recreation supports human development and endless learning opportunities that foster social, intellectual, physical, and emotional growth in people of all ages and abilities; and

WHEREAS, Parks and Recreation supports safe, vibrant, attractive, progressive communities that make life better through positive alternatives offered in recreational opportunities; and

WHEREAS, Parks and Recreation strengthens community identity by providing facilities and services that reflect and celebrate community character, heritage, culture, history, aesthetics, and landscape; and

WHEREAS, Parks and Recreation programs increase a community's economic prosperity through increased property values, expansion of local tax base, increased tourism, the attraction and retention of businesses, and crime reduction; and

WHEREAS, Parks and natural recreation areas improve water quality, protect groundwater, prevent flooding, improve the quality of the air we breathe, provide vegetative buffers to development, and produce habitat for wildlife ensuring the ecological beauty of our community and provide a place for children and adults to connect with nature; and

NOW, THEREFORE, I, JOHN B. ALLARD II, MAYOR OF THE CITY OF ROSEVILLE, CALIFORNIA, do hereby proclaim the month of **July 2020** as **PARK AND RECREATION MONTH** and encourage citizens to join with their communities in participation of Park and Recreation Month.

SIGNED this 1st day of July 2020.

JOHN B. ALLARD II, MAYOR

ATTEST:

SONIA OROZCO, CITY CLERK
CITY OF ROSEVILLE, CALIFORNIA





COUNCIL COMMUNICATION

CC #: 0860

File #: 0206-03-01

Title: Villages at Sierra Vista Community Facilities District No. 1 Series 2020 Bond Issuance

Contact: Jeannine Thrash 916-774-5473 jthrash@roseville.ca.us
Dennis Kauffman 916-774-5413 dkauffman@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 8.1.

RECOMMENDATION TO COUNCIL

Staff recommends that the City Council adopt a resolution authorizing the issuance of special tax bonds for, and on behalf of, the City of Roseville Villages at Sierra Vista Community Facilities District (CFD) No. 1 (Public Facilities), approving and directing the execution of a Supplement to Fiscal Agent Agreement, approving the form of the Preliminary Official Statement, approving sale of such bonds, approving and directing the execution of a Bond Purchase Agreement, and approving other related documents and actions. The attached resolution authorizes the execution and delivery of the following documents required for Villages at Sierra Vista CFD No. 1 (Public Facilities):

- Supplemental Agreement No. 1 to Fiscal Agent Agreement
- Preliminary Official Statement
- Bond Purchase Agreement

BACKGROUND

Villages at Sierra Vista CFD No. 1 (Public Facilities) was formed on May 2, 2018 with Resolution 18-119. The maximum authorized indebtedness for the District is \$310,000,000. On July 23, 2019, the first series of bonds were issued in the amount of \$12,540,000. The current outstanding principal balance is \$12,540,000. The 2020 Bonds are being issued at the developer's request, in an amount not to exceed \$10,500,000, to: (1) construct and acquire certain public facilities of benefit to the CFD; (2) establish a debt service reserve fund for the 2020 Bonds, and (iii) pay the costs of issuing the 2020 bonds. The 2020 bonds are the second series of bonds being issued for the CFD.

FISCAL IMPACT

The CFD will generate special taxes that will be paid by the property owners sufficient to pay the costs of the debt service, CFD administration, and any authorized pay-as-you-go facilities, as well

as provide funding in the future for maintenance/replacement of constructed facilities. The issuance of these bonds will not impact the City's General Fund.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378. The issuance of Special Tax Bonds meets the above criteria and is not subject to CEQA. No additional environmental review is required.

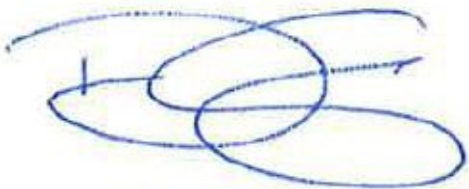
COMPLIANCE STATEMENT

In accordance with Government Code 5852.1, the following information consists of estimates of certain costs and charges for the Bonds that have been provided by the City's municipal financial advisor, which has been represented by such party to have been provided in good faith: (1) estimated true interest costs of the Bonds: 4.1%; (2) estimated finance charge of the Bonds (sum of all fees and charges paid to third parties): \$455,000; (3) estimated amount of proceeds of the Bonds received by the City (net of finance charges, reserves and capitalized interest, if any): \$8,364,000; and (4) estimated total payment amount (sum total of all payments to pay debt service on the Bonds plus the finance charge not paid with proceeds of the Bonds) calculated to the final maturity of the Bonds: \$17,667,850.

Respectfully Submitted,

Jeannine Thrash, Administrative Analyst

Dennis Kauffman, Assistant City Manager/Chief Financial Officer



Dominick Casey, City Manager

ATTACHMENTS:

Description

Resolution No. 20-271

Preliminary Official Statement

Bond Purchase Agreement

Supplemental Agreement No. 1 to Fiscal Agent Agreement

RESOLUTION NO. 20-271

A RESOLUTION AUTHORIZING THE ISSUANCE OF SPECIAL TAX BONDS FOR AND ON BEHALF OF THE CITY OF ROSEVILLE VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES), APPROVING AND DIRECTING THE EXECUTION OF SUPPLEMENT NO. 1 TO FISCAL AGENT AGREEMENT, APPROVING THE FORM OF PRELIMINARY OFFICIAL STATEMENT, APPROVING BOND PURCHASE AGREEMENT, APPROVING SALE OF SUCH BONDS, AND APPROVING OTHER RELATED DOCUMENTS AND ACTIONS

WHEREAS, this City Council (the "Council") of the City of Roseville (the "City") has conducted proceedings under and pursuant to the Mello-Roos Community Facilities Act of 1982, as amended, Chapter 2.5 of Part 1 of Division 2 of Title 5, commencing at Section 53311, of the California Government Code (the "Act"), to form the Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the "District"), to authorize the levy of special taxes upon the land within the District, and to issue bonds secured by said special taxes for the purpose of providing moneys for the construction and acquisition of authorized improvements for the District; and

WHEREAS, the Council, as legislative body of the District, previously authorized the issuance of special tax bonds of the City for the District in the maximum aggregate principal amount of not to exceed \$310,000,000 (the "Bond Authorization"); and

WHEREAS, the City previously issued for and on behalf of the District, the City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2019 (the "2019 Bonds"), in the initial principal amount of \$12,540,000, which 2019 Bonds constituted the first series of bonds issued pursuant to the Bond Authorization; and

WHEREAS, City now desires to issue the second series of the special tax bonds pursuant to the Bond Authorization, as described in more detail herein (the "Bonds"); and

WHEREAS, there has been submitted to the Council a Supplemental Agreement No. 1 to Fiscal Agent Agreement (the "Supplemental Agreement"), which will supplement and amend the Fiscal Agent Agreement, dated as of July 1, 2019 (as so supplemented, the "Fiscal Agent Agreement"), between the City and The Bank of New York Mellon Trust Company, N.A., as fiscal agent, providing for the issuance of the Bonds of the City for the District, and the Council, with the aid of City staff, has reviewed the Supplemental Agreement and found it to be in proper order, and now desires to approve the Supplemental Agreement and the issuance of the Bonds; and

WHEREAS, the City proposes to sell the Bonds to Piper Sandler & Co., as underwriter (the "Underwriter"), pursuant to the terms of a Bond Purchase Agreement by and between the City and the Underwriter, and the Underwriter proposes to offer the Bonds to the investing public by means of a Preliminary Official Statement, and the Council, with the aid of City staff, has reviewed the Bond Purchase Agreement and the Preliminary Official Statement and found them to be in proper order, and now desires to approve said documents; and

WHEREAS, all conditions, things and acts required to exist, to have happened and to have been performed precedent to and in the issuance of the Bonds as contemplated by this Resolution and the documents referred to herein exist, have happened and have been performed in due time, form and manner as required by the laws of the State of California, including the Act.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ROSEVILLE RESOLVES AS FOLLOWS:

1. **Findings.** This Council finds and determines that it is prudent in the management and development of land in the City and the District to issue the Bonds, secured on parity with the 2019 Bonds, for the purpose of providing moneys for the construction and acquisition of authorized improvements for the District.

2. **Law Applicable.** For the purposes of these proceedings in and for the District, the Act shall be the authority for the issuance of the Bonds.

3. **Bonds Authorized.** Pursuant to the Act, this Resolution and the Fiscal Agent Agreement, special tax bonds of the City for the District designated as "City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds Series 2020" in an aggregate principal amount not to exceed \$10,500,000 are hereby authorized to be issued. The Bonds shall be executed in the form set forth in and otherwise as provided in the Fiscal Agent Agreement.

The Bonds shall not be issued unless the value of the real property within the District subject to the special tax to pay debt service on the Bonds, based on assessed values and/or an appraisal by an independent appraiser hired by the City for the purpose of determining such value, is at least three (3) times the proposed principal amount of the outstanding bonds plus the Bonds proposed to be issued and secured by a special tax levied pursuant to the Act on property within the District.

4. **Supplemental Agreement.** The Council hereby approves the Supplemental Agreement in the form presented to the Council at this meeting. The City Manager, Assistant City Manager/Chief Financial Officer or such other person or persons as any of them may designate (each, an "Authorized Officer"), each acting alone or together with any other Authorized Officer, are each hereby authorized and directed to execute the Supplemental Agreement, in such form, together with any additions thereto or changes therein deemed necessary or advisable by the Authorized Officer executing such document upon consultation with Jones Hall, A Professional Law Corporation, as bond counsel to the City ("Bond Counsel"). The proceeds of the Bonds shall be applied by the City for the purposes and in the amounts as set forth in the Supplemental Agreement. The Council hereby authorizes the delivery and performance by the City of the Supplemental Agreement and the Fiscal Agent Agreement.

5. **Covenant to Foreclose.** The City hereby covenants, for the benefit of the owners of the Bonds, to commence and diligently pursue to completion any foreclosure action regarding delinquent installments of any amount levied as a special tax for the payment of interest or principal of the Bonds, said foreclosure action to be commenced and pursued as more completely set forth in the Fiscal Agent Agreement.

6. **Approval of Official Statement.** The Council hereby approves the Preliminary Official Statement with respect to the Bonds, in substantially the form on file with the City Clerk. Distribution of the Preliminary Official Statement by the City and the Underwriter is hereby approved, and, prior to the distribution of the Preliminary Official Statement, and each Authorized Officer, each acting alone or together with any other Authorized Officer, is authorized and directed, on behalf of the City, to deem the Preliminary Official Statement "final" pursuant to Rule 15c2-12 under the Securities Exchange Act of 1934 (the "Rule"). The execution of the final Official

Statement, which shall include such changes and additions thereto deemed advisable by the Authorized Officer executing the same, and such information permitted to be excluded from the Preliminary Official Statement pursuant to the Rule, is hereby approved for delivery to the purchasers of the Bonds, and each Authorized Officer, each acting alone or together with any other Authorized Officer, is authorized and directed to execute and deliver the final Official Statement for and on behalf of the City, to deliver to the Underwriter a certificate with respect to the information set forth therein and to deliver to the Underwriter a continuing disclosure undertaking, the form of which is included as part of the Preliminary Official Statement, in substantially such form, together with such changes and additions thereto deemed advisable by the Authorized Officer executing the same.

7. **Approval of Bond Purchase Agreement.** The Council hereby approves the Bond Purchase Agreement between the City and the Underwriter, in substantially the form on file with the City Clerk; provided, that the aggregate principal amount of Bonds shall not exceed \$10,500,000 or result in an underwriter's discount in excess of 1.4%, or a true interest cost in excess of 5.5%. Subject to the foregoing parameters, an Authorized Officer is hereby authorized and directed to execute the Bond Purchase Agreement in substantially the form on file with the City Clerk, together with such changes and additions thereto deemed advisable by the Authorized Officer executing the same. The Council hereby finds and determines that the sale of the Bonds at negotiated sale as contemplated by the Bond Purchase Agreement will result in a lower overall cost.

8. **Actions Authorized.** All actions heretofore taken by the officers, employees and agents of the City with respect to the establishment of the District and the sale and issuance of the Bonds are hereby approved, confirmed and ratified, and the Authorized Officers of the City are hereby authorized and directed to do any and all things and take any and all actions and execute any and all certificates, agreements and other documents, which they, or any of them, may deem necessary or advisable in order to consummate the lawful issuance and delivery of the Bonds in accordance with this resolution, and any certificate, agreement, and other document described in the documents herein approved. All actions to be taken by a specified Authorized Officer as specified herein, may be taken by the Authorized Officer or any designee, with the same force and effect as if taken by such Authorized Officer.

9. **Effectiveness.** This Resolution shall take effect upon its adoption.

* * * * *

I hereby certify that the foregoing Resolution was duly adopted by the City Council of the City of Roseville, California, at a regularly scheduled meeting thereof, held on the _____ day of _____, 2020, by the following vote of the City Council:

AYES: COUNCILMEMBERS
NOES: COUNCILMEMBERS
ABSENT: COUNCILMEMBERS
ABSTAIN: COUNCILMEMBERS

Mayor

ATTEST:

City Clerk

PRELIMINARY OFFICIAL STATEMENT DATED _____, 2020**NEW ISSUE-FULL BOOK ENTRY****NOT RATED**

In the opinion of Jones Hall, A Professional Law Corporation, San Francisco, California, Bond Counsel, subject, however to certain qualifications described herein, under existing law, the interest on the 2020 Bonds is excluded from gross income for federal income tax purposes and such interest is not an item of tax preference for purposes of the federal alternative minimum tax. In the further opinion of Bond Counsel, such interest is exempt from California personal income taxes. See "TAX MATTERS" herein.

\$ _____ *

**CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES)
SPECIAL TAX BONDS
SERIES 2020**

Dated: Date of Delivery**Due: September 1, as shown below**

The bonds captioned above (the "2020 Bonds"), are being issued by the City of Roseville (the "City") by and through its Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the "District"). The 2020 Bonds are special tax obligations of the City, authorized pursuant to the Mello-Roos Community Facilities Act of 1982, as amended, being California Government Code Section 53311, et seq. (the "Act"), and are issued pursuant to the Resolution of Issuance (as defined herein) and a Fiscal Agent Agreement dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the "Fiscal Agent Agreement") by and between the City and The Bank of New York Mellon Trust Company, N.A., as fiscal agent (the "Fiscal Agent"). The 2020 Bonds are being issued to (i) construct and acquire certain public facilities of benefit to the District, (ii) provide for a deposit to a debt service reserve account for the 2020 Bonds, (iii) provide capitalized interest for debt service due on the 2020 Bonds through [September 1, 2020], and (iv) pay costs of issuance of the 2020 Bonds. Interest on the 2020 Bonds is payable semiannually on March 1 and September 1 of each year, commencing September 1, 2020. In 2019, the City issued its \$12,540,000 initial principal amount of City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2019 (the "2019 Bonds"). The 2020 Bonds represent the second series of special tax bonds issued for the District, payable on a parity with the 2019 Bonds, and the issuance of additional parity bonds in the future is contemplated, subject to the conditions set forth in the Fiscal Agent Agreement. See "THE BONDS – Authority for Issuance" and "SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Parity Bonds."

The 2020 Bonds are being issued as fully registered bonds, registered in the name of Cede & Co. as nominee of The Depository Trust Company ("DTC"), and will be available to ultimate purchasers in the denomination of \$5,000 or any integral multiple thereof, under the book-entry system maintained by DTC. See "APPENDIX G – DTC AND THE BOOK-ENTRY ONLY SYSTEM."

The 2020 Bonds are secured by and payable from a pledge of Special Tax Revenues (as defined herein) derived from Special Taxes (as defined herein) to be levied by the City on real property within the boundaries of the District, from the proceeds of any foreclosure actions brought following a delinquency in the payment of the Special Taxes, and from amounts held in certain funds under the Fiscal Agent Agreement, all as more fully described herein. **Unpaid Special Taxes do not constitute a personal indebtedness of the owners of the parcels within the District. In the event of delinquency, proceedings may be conducted only against the parcel of real property securing the delinquent Special Tax. There is no assurance the owners will be able to pay the Special Tax or that they will pay a Special Tax even though financially able to do so.** To provide funds for payment of the 2020 Bonds and the interest thereon as a result of any delinquent Special Taxes, the City will establish a debt service reserve account for the 2020 Bonds from proceeds of the 2020 Bonds, as described herein. See "SECURITY AND SOURCES OF PAYMENT FOR THE BONDS."

Property currently in the District and subject to the Special Tax comprises approximately 115 acres planned for 678 residential homes in the Sierra Vista Specific Plan, which is located in the northwest portion of the City. This includes 73 acres planned for 395 residential homes in the original boundary of the District, plus 42 acres planned for 283 residential units that were annexed into the District in 2020 from a future annexation area established for the District. John Mourier Construction, Inc. ("JMC Homes") is developing the land in the District into four distinct neighborhoods for sale to individual homeowners, with the initial 395 planned units constituting phase 1 of the development and the next 283 planned units constituting phase 2. The land currently in the District constitutes a portion of a larger development project being undertaken by JMC Homes in the area, and additional land is expected to annex into the District from the future annexation area. As of April 21, 2020 (the date of value for the appraisal described herein), 114 residential units within the District were owned by individual homeowners, with the remainder of the lots owned by JMC Homes. See "THE DISTRICT" and "OWNERSHIP OF PROPERTY WITHIN THE DISTRICT."

The 2020 Bonds are subject to optional and mandatory redemption prior to maturity as described herein. See "THE BONDS — Redemption."

NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE CITY, THE COUNTY OF PLACER, THE STATE OF CALIFORNIA OR ANY POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF THE 2020 BONDS. THE 2020 BONDS DO NOT CONSTITUTE A DEBT OF THE CITY WITHIN THE MEANING OF ANY STATUTORY OR CONSTITUTIONAL DEBT LIMITATION. THE INFORMATION SET FORTH IN THIS OFFICIAL STATEMENT, INCLUDING INFORMATION UNDER THE HEADING "SPECIAL RISK FACTORS," SHOULD BE READ IN ITS ENTIRETY.

This cover page contains certain information for general reference only. It is not a summary of all of the provisions of the 2020 Bonds. Prospective investors must read the entire Official Statement to obtain information essential to the making of an informed investment decision. See "SPECIAL RISK FACTORS" herein for a discussion of the special risk factors that should be considered, in addition to the other matters and risk factors set forth herein, in evaluating the investment quality of the 2020 Bonds.

The 2020 Bonds are offered when, as and if issued, subject to approval as to their legality by Jones Hall, a Professional Law Corporation, San Francisco, California, Bond Counsel. Certain legal matters will also be passed on by Jones Hall, as Disclosure

Counsel and Kutak Rock LLP, Irvine, California, as counsel to the Underwriter. Certain legal matters will be passed upon for the City by the City Attorney. It is anticipated that the 2020 Bonds will be available for delivery to DTC on or about _____, 2020.

[Piper logo]

The date of this Official Statement is _____, 2020.

* Preliminary; subject to change.

**CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES)
SPECIAL TAX BONDS
SERIES 2020**

MATURITY SCHEDULE

Maturity (Sept. 1)	Principal Amount	Interest Rate	Yield	Price	CUSIP† ()
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\$ _____ % Term Bond Due September 1, 20____; Yield ____%; Price: ____%
CUSIP†: _____

† Copyright 2020, American Bankers Association. CUSIP data herein are provided by CUSIP Global Services, managed by Standard & Poor's Capital IQ, and are provided for convenience of reference only. Neither the City nor the Underwriter assumes any responsibility for the accuracy of these CUSIP data.

CITY OF ROSEVILLE, CALIFORNIA

City Council

John Allard, *Mayor*
Krista Bernasconi, *Vice Mayor*
Scott Alvord, *Councilmember*
Bruce Houdesheldt, *Councilmember*
Pauline Roccucci, *Councilmember*

City Staff

Dominick Casey, *City Manager*
Dennis Kauffman, *Chief Financial Officer*
Robert R. Schmitt, *City Attorney*
Sonia Orozco, *City Clerk*

SPECIAL SERVICES

Bond Counsel and Disclosure Counsel

Jones Hall, A Professional Law Corporation
San Francisco, California

Municipal Advisor

Hilltop Securities Inc.
Encino, California

Appraiser

Integra Realty Resources
Sacramento, California

Special Tax Consultant and Administrator

Willdan Financial Services
Temecula, California

Fiscal Agent

The Bank of New York Mellon Trust Company, N.A.
San Francisco, California

GENERAL INFORMATION ABOUT THIS OFFICIAL STATEMENT

Use of Official Statement. This Official Statement is submitted in connection with the sale of the 2020 Bonds referred to herein and may not be reproduced or used, in whole or in part, for any other purpose. This Official Statement is not to be construed as a contract with the purchasers of the 2020 Bonds.

Estimates and Forecasts. When used in this Official Statement and in any continuing disclosure by the City, in any press release and in any oral statement made with the approval of an authorized officer of the City, the words or phrases “will likely result,” “are expected to”, “will continue”, “is anticipated”, “estimate”, “project,” “forecast”, “expect”, “intend” and similar expressions identify “forward looking statements.” Such statements are subject to risks and uncertainties that could cause actual results to differ materially from those contemplated in such forward-looking statements. Any forecast is subject to such uncertainties. Inevitably, some assumptions used to develop the forecasts will not be realized and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between forecasts and actual results, and those differences may be material. The information and expressions of opinion herein are subject to change without notice, and neither the delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, give rise to any implication that there has been no change in the affairs of the City since the date hereof.

Limit of Offering. No dealer, broker, salesperson or other person has been authorized by the City to give any information or to make any representations in connection with the offer or sale of the 2020 Bonds other than those contained herein and if given or made, such other information or representation must not be relied upon as having been authorized by the City or the Underwriter. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of the 2020 Bonds by a person in any jurisdiction in which it is unlawful for such person to make such an offer, solicitation or sale.

Involvement of Underwriter. The Underwriter has reviewed the information in this Official Statement in accordance with, and as a part of, their responsibilities to investors under the Federal Securities Laws as applied to the facts and circumstances of this transaction, but the Underwriter does not guarantee the accuracy or completeness of such information. The information and expressions of opinions herein are subject to change without notice and neither delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the City since the date hereof. All summaries of the documents referred to in this Official Statement, are made subject to the provisions of such documents, respectively, and do not purport to be complete statements of any or all of such provisions.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITER MAY OVERALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE 2020 BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

THE 2020 BONDS HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, IN RELIANCE UPON AN EXCEPTION FROM THE REGISTRATION REQUIREMENTS CONTAINED IN SUCH ACT. THE 2020 BONDS HAVE NOT BEEN REGISTERED OR QUALIFIED UNDER THE SECURITIES LAWS OF ANY STATE.

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OFFICIAL STATEMENT

\$ _____ *

CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES)
SPECIAL TAX BONDS
SERIES 2020

This Official Statement, including the cover page and all Appendices hereto, is provided to furnish certain information in connection with the issuance by the City of Roseville (the “**City**”) by and through its Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the “**District**”) of the bonds captioned above (the “**2020 Bonds**”).

Any statements made in this Official Statement involving matters of opinion or of estimates, whether or not so expressly stated, are set forth as such and not as representations of fact, and no representation is made that any of the estimates will be realized. Definitions of certain terms used herein and not defined herein have the meaning set forth in the Fiscal Agent Agreement. See APPENDIX F.

INTRODUCTION

This introduction is not a summary of this Official Statement. It is only a brief description of and guide to, and is qualified by, more complete and detailed information contained in the entire Official Statement, including the cover page and attached appendices, and the documents summarized or described in this Official Statement. A full review should be made of the entire Official Statement. The offering of the 2020 Bonds to potential investors is made only by means of the entire Official Statement.

The City. The City is located in the County of Placer (the “**County**”), which is located in the Sacramento Valley near the foothills of the Sierra Nevada mountain range, about 16 miles northeast of Sacramento and 110 miles east of San Francisco. The City presently occupies 43 square miles in the southwestern part of the County and is the largest city in the County as well as the residential and business center of the County. It is bordered by Sacramento County to the south, the City of Rocklin to the north and unincorporated County to the east and west. For additional information on the City and the County, see APPENDIX C.

The District. On March 21, 2018, the City Council of the City (the “**City Council**”), as legislative body of the District, adopted a Resolution of Intention to form the District under the Mello-Roos Community Facilities Act of 1982, as amended (the “**Act**”), to levy a special tax and to incur bonded indebtedness for the purpose of financing the Improvements and making contributions to certain public facilities. After conducting a noticed public hearing, on May 2, 2018, the City Council adopted a Resolution of Formation (the “**Resolution of Formation**”), which established the District

* Preliminary; subject to change.

and a future annexation area for the District (the “**Future Annexation Area**”), set forth the Special Tax Formula within the District and set forth the necessity to incur bonded indebtedness in a total amount not to exceed \$310,000,000. On the same day, an election was held within the District in which the qualified elector in the District, John Mourier Construction, Inc. (“**JMC Homes**”), approved the proposed bonded indebtedness and the levy of the Special Tax. Change proceedings were undertaken in the District in January 2019 to amend the Special Tax Formula, which proceedings were approved by JMC Homes, as the qualified elector in the District. See “OWNERSHIP OF PROPERTY WITHIN THE DISTRICT”.

Property currently in the District and subject to the Special Tax comprises 115 acres developing into 678 residential homes in the Sierra Vista Specific Plan, which is located in the northwest portion of the City. This includes 73 acres planned for 395 residential homes in the original boundary of the District, plus 42 acres planned for 283 residential units that were annexed into the District in 2020 from the future annexation area.

JMC Homes anticipates annexing additional lots into the District from the future annexation area every few years as market conditions warrant. JMC Homes expects that each annexation will contain a similar number of lots as the initial number of lots in the District. However, the timing of each annexation and number of lots in each annexation may vary based on market conditions. Upon annexation of additional lots into the District additional bonds may be issued by the City on a parity with the 2020 Bonds and 2019 Bonds (defined below) upon the satisfaction of certain conditions set forth in the Fiscal Agent Agreement (defined below) in order to finance additional infrastructure improvements needed by JMC Homes for the development of the project.

Authority for Issuance of the 2020 Bonds. The 2020 Bonds are issued pursuant to the Act, a resolution adopted by the City Council on _____, 2020 (the “**Resolution of Issuance**”) and a Fiscal Agent Agreement dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the “**Fiscal Agent Agreement**”) between the City and The Bank of New York Mellon Trust Company, N.A., as fiscal agent (the “**Fiscal Agent**”).

Bond Terms. The 2020 Bonds will be dated as of and bear interest from the date of delivery thereof at the rate or rates set forth on the cover page of this Official Statement. Interest on the 2020 Bonds is payable on March 1 and September 1 of each year (each an “**Interest Payment Date**”), commencing September 1, 2020. The 2020 Bonds will be issued without coupons in denominations of \$5,000 or any integral multiple thereof.

Registration of Ownership of 2020 Bonds. The 2020 Bonds will be issued only as fully registered bonds in book-entry form, registered in the name of Cede & Co., as nominee of The Depository Trust Company (“**DTC**”). Ultimate purchasers of 2020 Bonds will not receive physical certificates representing their interest in the 2020 Bonds. So long as the 2020 Bonds are registered in the name of Cede & Co., as nominee of DTC, references herein to the Owners will mean Cede & Co., and will not mean the ultimate purchasers of the 2020 Bonds. Payments of the principal, premium, if any, and interest on the 2020 Bonds will be made directly to DTC, or its nominee, Cede & Co. so long as DTC or Cede & Co. is the registered owner of the 2020 Bonds. Disbursements of such payments to DTC’s Participants is the responsibility of DTC and disbursements of such payments to the Beneficial Owners is the responsibility of DTC’s Participants and Indirect Participants, as more fully described herein. See “APPENDIX G – DTC AND THE BOOK-ENTRY ONLY SYSTEM.”

Use of Proceeds. Proceeds of the 2020 Bonds will primarily be used to finance a portion of the costs of acquiring and constructing certain public infrastructure improvements (the “**Improvements**,” as described herein) as part of the development being undertaken by JMC Homes. The Improvements consist generally of water, wastewater, drainage, roadway and other infrastructure improvements necessary for development of property within the District and the surrounding area, as well as park and open space improvements (which include environmental mitigation costs). See “THE IMPROVEMENTS.” Proceeds of the 2020 Bonds will also be deposited to a debt service reserve account for the 2020 Bonds, to provide capitalized interest for debt service due on the 2020 Bonds due [September 1, 2020] and to pay costs of issuance.

Security and Source of Payment of the Bonds. As security for the payment of the Bonds, a special tax applicable to each taxable parcel in the District will be levied and collected according to the tax liability determined by the City Council through the application of the Amended Rate, Method of Apportionment, and Manner of Collection of Special Tax for the District (the “**Special Tax Formula**”). The Special Tax Formula is set forth in its entirety in APPENDIX A hereto. Pursuant to the Special Tax Formula, a “Facilities Special Tax” will be levied and collected until the earlier of (i) the Transition Year or (ii) Fiscal Year 2082-83, and a “Maintenance Special Tax” will be levied and collected beginning in the Transition Year. *Only the “Facilities Special Tax” is pledged to the payment of the Bonds, and the definition of “Special Taxes” used in the Fiscal Agent Agreement and this Official Statement refers only to the “Facilities Special Tax” levied in accordance with the Special Tax Formula.* See “SECURITY AND SOURCES OF PAYMENT OF THE BONDS – Special Tax Methodology.”

The 2020 Bonds, 2019 Bonds and any Additional Bonds are payable from the “**Special Tax Revenues**,” consisting of the proceeds of the Special Taxes received by the City, including all scheduled payments and delinquent payments thereof, interest thereon and proceeds of the redemption or sale of property sold as a result of foreclosure of the lien of the Special Taxes, net of the administration charge of the County (currently at 1%), but do not include any interest in excess of the interest due on the Bonds or any penalties collected in connection with any such foreclosure. The 2020 Bonds are also payable from amounts held in certain funds and accounts pursuant to the Fiscal Agent Agreement, including a reserve fund, all as more fully described herein. See “–2020 Reserve Account of the Reserve Fund,” below.

The Special Taxes represent liens on the parcels of land subject to a Special Tax, and failure to pay the Special Taxes could result in proceedings to foreclose the delinquent property. The Special Taxes do not constitute the personal indebtedness of the owners of taxed parcels. See “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Special Tax Methodology” and “APPENDIX A – RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX.”

Additional Parity Bonds. The maximum authorized indebtedness for the District is \$310,000,000. In 2019, the City issued its \$12,540,000 initial principal amount of City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2019 (the “**2019 Bonds**”), which was the first series of special tax bonds issued under this authorization. The 2020 Bonds are the second series of special tax bonds issued under this authorization, and additional series of parity bonds (“**Additional Bonds**”) are expected in the future to finance additional infrastructure improvements needed by JMC Homes for the development of the project as additional property is annexed into the District. In addition, the City may utilize a portion of the available authorized bond amount for the funding of certain deferred impact fees owed to the City, as described below under “– Use of Bond Authorization for Development Impact Fee Deferral Bonds.”

The principal amount of the 2020 Bonds has been sized based on the Special Taxes that can be generated from the 283 residential units annexed into the District in 2020 (although all of the Special Taxes levied in the District are pledged to the 2020 Bonds, the 2019 Bonds and any Additional Bonds, on a parity basis). Additional Bonds are expected to be issued for Improvements as additional property in the future annexation area is annexed into the District. For the purpose of financing the Improvements, Bonds are expected to be issued in an aggregate principal amount of approximately \$110,000,000, including the 2020 Bonds and the 2019 Bonds. This approximate principal amount does not take into account refunding bonds and bonds issued to pay for the Development Impact Fee Deferral for property in the District. However, the actual aggregate amount of Additional Bonds to fund Improvements and the Development Impact Fee Deferral may vary depending on interest rates at the time of bond issuance, the timing of each bond issue and other factors that may impact the timing and size of each bond issue.

The District may issue Additional Bonds secured by Special Tax Revenues on parity with the 2020 Bonds and the 2019 Bonds, upon the satisfaction of certain conditions set forth in the Fiscal Agent Agreement. Following the issuance of the 2020 Bonds in the amount of \$_____,*, the remaining authorized amount of indebtedness to be issued is \$_____.*. So long as the 2020 Bonds or 2019 Bonds are outstanding, any future bonds issued for the District and secured on parity with the 2020 Bonds and 2019 Bonds (herein, “**Additional Bonds**” and collectively with the 2020 Bonds and the 2019 Bonds, the “**Bonds**”) are required to meet certain conditions of issuance as set forth in the Fiscal Agent Agreement, and no bonds having a lien senior to the lien of the 2020 Bonds or 2019 Bonds are allowed. See “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Parity Bonds.”

Use of Bond Authorization for Development Impact Fee Deferral Bonds. In connection with the approval of development in the District, the City agreed that payment of certain impact fees owed by JMC Homes and merchant builders will be deferred (referred to as the “Development Impact Fee Deferral” in the Special Tax Formula) to allow payment of the deferred fees after the 2019 Bonds have been fully paid. The City expects to receive payment for the deferred impact fees either through continued collection of Special Taxes or through the issuance of future bonds after the 2019 Bonds have matured. If the City chooses to issue bonds to pay deferred impact fees, the remaining authorization will be available to be utilized by the City as a means therefor. [CONFIRM]

2020 Reserve Account of the Reserve Fund. In connection with the issuance of the 2019 Bonds, a Reserve Fund (the “**Reserve Fund**”) was established under the Fiscal Agent Agreement, and within the Reserve Fund separate accounts are established for each series of Bonds. Accordingly, a reserve account for the 2019 Bonds was established within the Reserve Fund (the “**2019 Reserve Account**”), and a reserve account for the 2020 Bonds will be established within the Reserve Fund (the “**2020 Reserve Account**”). Amounts in the 2019 Reserve Account are available solely for the payment of debt service on the 2019 Bonds, and amounts in the 2020 Reserve Account is available solely for the payment of debt service on the 2020 Bonds. See “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Reserve Fund.” If there are additional delinquencies after depletion of funds in the 2020 Reserve Account of the Reserve Fund, the City is not obligated to pay the 2020 Bonds or supplement the 2020 Reserve Account of the Reserve Fund.

Appraised Value of Property. Property in the District is security for the Special Tax which secures the 2020 Bonds and the 2019 Bonds. The City authorized the preparation of an appraisal

* Preliminary; subject to change.

for the 678 lots currently within the District, with a date of value of April 21, 2020, which sets forth an aggregate not-less-than appraised value of \$124,108,750 as of such date. The valuation assumes certain proceeds from the 2020 Bonds and 2019 Bonds (but not any Additional Bonds that may be issued in the future) are available to reimburse for certain completed infrastructure improvements and accounts for the impact of the lien of the Special Tax and adds the estimated bond amount to the value of property. See "THE IMPROVEMENTS." In considering the estimates of value evidenced by the appraisal, it should be noted that the appraisal is based upon a number of standard and special assumptions, which affect the estimates as to value, in addition to the assumption of completion of the Improvements and the availability of certain of the proceeds of the 2020 Bonds and 2019 Bonds to reimburse for completed Improvements. The Improvements to be paid for with proceeds of the 2020 Bonds and 2019 Bonds are now [substantially] complete. See "VALUE OF PROPERTY WITHIN THE DISTRICT – The Appraisal" and APPENDIX B.

The appraised value of property in the District is 5.78* times the \$21,465,794* aggregate principal amount of the 2020 Bonds and 2019 Bonds (and overlapping general obligation bond debt of \$175,794). This is an average, and individual parcels may vary widely from the average. See "VALUE OF PROPERTY WITHIN THE DISTRICT – Value to Special Tax Burden Ratios."

Development of land in the District is underway by JMC Homes, with 114 homes owned by individual homeowners as of April 21, 2020 (the date of value for the appraisal) and an additional ____ homes that have sold and closed to individual homeowners as of _____, 2020. See "THE DISTRICT – Development in the District" and "OWNERSHIP OF PROPERTY WITHIN THE DISTRICT."

Risks of Investment; COVID-19. See the section of this Official Statement entitled "SPECIAL RISK FACTORS" for a discussion of special factors that should be considered, in addition to the other matters set forth herein, in considering the investment quality of the 2020 Bonds. ***In particular, no assurance can be given that the timing of construction of homes and/or sale of homes projected by JMC Homes in this Official Statement will be accomplished. Neither the City nor the Underwriter can predict the impact of COVID-19 on home production and home sales activities or the willingness of owners of land in the District, including JMC Homes, to pay the Special Taxes securing the 2020 Bonds. See "SPECIAL RISK FACTORS – COVID-19."***

Limited Obligation of the City. The general fund of the City is not liable and the full faith and credit of the City is not pledged for the payment of the interest on, or principal of or redemption premiums, if any, on the 2020 Bonds. The 2020 Bonds are not secured by a legal or equitable pledge of or charge, lien or encumbrance upon any property of the City or any of its income or receipts, except the money in the funds established and pledged to the Bonds under the Fiscal Agent Agreement, and neither the payment of the interest on nor principal of or redemption premiums, if any, on the 2020 Bonds is a general debt, liability or obligation of the City. The 2020 Bonds do not constitute an indebtedness of the City within the meaning of any constitutional or statutory debt limitation or restrictions, and neither the City Council, the City nor any officer or employee thereof are liable for the payment of the interest on or principal of or redemption premiums, if any, on the 2020 Bonds other than from the proceeds of the Special Taxes and the money in the funds established and pledged to the Bonds, as provided in the Fiscal Agent Agreement.

Summary of Information. Brief descriptions of certain provisions of the Fiscal Agent Agreement, the Bonds and certain other documents are included herein. The descriptions and summaries of documents herein do not purport to be comprehensive or definitive, and reference is made to each such document for the complete details of all its respective terms and conditions, copies of which are available for inspection at the office of the Chief Financial Officer of the City. All statements herein with respect to certain rights and remedies are qualified by reference to laws and principles of equity relating to or affecting creditors' rights generally. Capitalized terms used in this Official Statement and not otherwise defined herein have the meanings ascribed to such terms in the Fiscal Agent Agreement. The information and expressions of opinion herein speak only as of the date of this Official Statement and are subject to change without notice. Neither delivery of this Official Statement, any sale made hereunder, nor any future use of this Official Statement shall, under any circumstances, create any implication that there has been no change in the affairs of the City or the District since the date hereof.

Any statements made in this Official Statement involving matters of opinion or of estimates, whether or not so expressly stated, are set forth as such and not as representations of fact, and no representation is made that any of the estimates will be realized.

ESTIMATED SOURCES AND USES OF FUNDS

A summary of the estimated sources and uses of funds associated with the sale of the 2020 Bonds follows:

Estimated Sources of Funds:

Principal Amount of 2020 Bonds	\$
Plus/Less: [Net] Original Issue Premium/Discount	
Total	\$

Estimated Uses of Funds:

Deposit to Improvement Fund	\$
Deposit to 2020 Reserve Account of the Reserve Fund ⁽¹⁾	
Deposit to Bond Fund ⁽²⁾	
Costs of Issuance ⁽³⁾	
Total	\$

(1) Equal to the Reserve Requirement for the 2020 Bonds.

(2) Represents an amount scheduled to provide for capitalized interest due on the 2020 Bonds on [September 1, 2020].

(3) Includes fees of bond and disclosure counsel, fees, expenses and charges of the Fiscal Agent, printing costs, fees of the special tax administrator, appraiser, and municipal advisor, Underwriter's discount, and other costs of issuance.

THE BONDS

Authority for Issuance

The 2020 Bonds are issued pursuant to the Fiscal Agent Agreement, the Resolution of Issuance and the Act.

On March 21, 2018, the City Council adopted a Resolution of Intention to form a community facilities district under the Act, to levy a special tax and to incur bonded indebtedness for the purpose of financing the Improvements and making contributions to certain public facilities. After conducting a noticed public hearing, on May 2, 2018, the City Council adopted the Resolution of Formation, which established the District and the Future Annexation Area, set forth the Special Tax Formula within the District and set forth the necessity to incur bonded indebtedness in a total amount not to exceed \$310,000,000. On the same day, an election was held within the District in which the qualified elector in the District, JMC Homes, approved the proposed bonded indebtedness and the levy of the Special Tax. Change proceedings were undertaken in the District in January 2019 to amend the Special Tax Formula, which proceedings were approved by JMC Homes, as the qualified elector in the District. See "OWNERSHIP OF PROPERTY WITHIN THE DISTRICT" below and APPENDIX A.

The principal amount of the 2020 Bonds has been sized based on the Special Taxes that can be generated from the 283 residential units annexed into the District in 2020 (although all of the Special Taxes levied in the District are pledged to the 2020 Bonds, the 2019 Bonds and any Additional Bonds, on a parity basis). Additional Bonds are expected to be issued for Improvements as additional property in the future annexation area is annexed into the District. For the purpose of financing the Improvements, Bonds are expected to be issued in an aggregate principal amount of approximately \$110,000,000, including the 2020 Bonds and the 2019 Bonds. This approximate principal amount does not take into account refunding bonds and bonds issued to pay for the Development Impact Fee Deferral for property in the District. However, the actual aggregate amount of Additional Bonds to fund Improvements and the Development Impact Fee Deferral may vary depending on interest rates at the time of bond issuance, the timing of each bond issue and other factors that may impact the timing and size of each bond issue.

Description of the Bonds

Bond Terms. The 2020 Bonds will be dated as of and bear interest from the date of delivery thereof at the rates and mature in the amounts and years, as set forth on the cover page hereof. The 2020 Bonds are being issued in the denomination of \$5,000 or any integral multiple thereof.

Interest on the 2020 Bonds will be payable semiannually on March 1 and September 1 of each year (each an "**Interest Payment Date**"), commencing September 1, 2020. The principal of the 2020 Bonds and premiums due upon the redemption thereof, if any, will be payable in lawful money of the United States of America at the principal corporate trust office of the Fiscal Agent in Los Angeles, California, or such other place as designated by the Fiscal Agent, upon presentation and surrender of the 2020 Bonds; provided that so long as any 2020 Bonds are in book-entry form, payments with respect to such 2020 Bonds will be made by wire transfer, or such other method acceptable to the Fiscal Agent, to DTC.

Book-Entry Only System. The 2020 Bonds are being issued as fully registered bonds, registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York ("**DTC**"), and will be available to ultimate purchasers under the book-entry system

maintained by DTC. Ultimate purchasers of 2020 Bonds will not receive physical certificates representing their interest in the 2020 Bonds. So long as the 2020 Bonds are registered in the name of Cede & Co., as nominee of DTC, references herein to the Owners will mean Cede & Co., and will not mean the ultimate purchasers of the 2020 Bonds. The Fiscal Agent will make payments of the principal, premium, if any, and interest on the 2020 Bonds directly to DTC, or its nominee, Cede & Co., so long as DTC or Cede & Co. is the registered owner of the 2020 Bonds. Disbursements of such payments to DTC's Participants are the responsibility of DTC and disbursements of such payments to the Beneficial Owners are the responsibility of DTC's Participants and Indirect Participants, as more fully described herein. See "APPENDIX G – DTC AND THE BOOK-ENTRY ONLY SYSTEM."

Calculation and Payment of Interest. Interest on the 2020 Bonds will be computed on the basis of a 360-day year consisting of twelve 30-day months. Interest on the 2020 Bonds (including the final interest payment upon maturity or earlier redemption) is payable by check of the Fiscal Agent mailed on each Interest Payment Date by first class mail to the registered Owner thereof at such registered Owner's address as it appears on the registration books maintained by the Fiscal Agent at the close of business on the 15th day of the month preceding the month in which the Interest Payment Date occurs whether or not such day is a Business Day (the "**Record Date**") preceding the Interest Payment Date, or by wire transfer made on such Interest Payment Date upon written instructions received by the Fiscal Agent on or before the Record Date preceding the Interest Payment Date, of any Owner of \$1,000,000 or more in aggregate principal amount of 2020 Bonds; provided that so long as any 2020 Bonds are in book-entry form, payments with respect to such 2020 Bonds will be made by wire transfer, or such other method acceptable to the Fiscal Agent, to DTC. See "APPENDIX G – DTC AND THE BOOK-ENTRY ONLY SYSTEM."

Each 2020 Bond will bear interest from the Interest Payment Date next preceding the date of authentication thereof unless (i) it is authenticated on an Interest Payment Date, in which event it will bear interest from such date of authentication, or (ii) it is authenticated prior to an Interest Payment Date and after the close of business on the Record Date preceding such Interest Payment Date, in which event it will bear interest from such Interest Payment Date, or (iii) it is authenticated prior to the Record Date preceding the first Interest Payment Date, in which event it will bear interest from the Dated Date; provided, however, that if at the time of authentication of a 2020 Bond, interest is in default thereon, such 2020 Bond will bear interest from the Interest Payment Date to which interest has previously been paid or made available for payment thereon. So long as the 2020 Bonds are registered in the name of Cede & Co., as nominee of DTC, payments of the principal, premium, if any, and interest on the 2020 Bonds will be made directly to DTC, or its nominee, Cede & Co. Disbursements of such payments to DTC's Participants are the responsibility of DTC and disbursements of such payments to the Beneficial Owners are the responsibility of DTC's Participants and Indirect Participants, as more fully described herein. See "APPENDIX G – DTC AND THE BOOK-ENTRY ONLY SYSTEM."

Redemption*

Optional Redemption. The 2020 Bonds are subject to optional redemption from any source of available funds (other than Prepayments of the Special Tax by property owners), in whole or in part among maturities as specified by the City and by lot within a maturity, on any date on and after September 1, 20__ at the following respective redemption prices (expressed as percentages of the principal amount of the 2020 Bonds to be redeemed), plus accrued interest thereon to the date of redemption:

<u>Redemption Dates</u>	<u>Redemption Price</u>
September 1, 20__ through August 31, 20__	103%
September 1, 20__ through August 31, 20__	102
September 1, 20__ through August 31, 20__	101
September 1, 20__ and any date thereafter	100

Mandatory Redemption From Prepayments. The 2020 Bonds are subject to mandatory redemption from Prepayments of the Special Tax by property owners, in whole or in part among maturities as specified by the City and by lot within a maturity, on any Interest Payment Date at the following respective redemption prices (expressed as percentages of the principal amount of the 2020 Bonds to be redeemed), plus accrued interest thereon to the date of redemption:

<u>Redemption Dates</u>	<u>Redemption Price</u>
September 1, 20__ through and including March 1, 20__	103%
September 1, 20__ and March 1, 20__	102
September 1, 20__ and March 1, 20__	101
September 1, 20__ and any Interest Payment Date thereafter	100

Mandatory Sinking Fund Redemption. The Term 2020 Bonds maturing September 1, 20__ and September 1, 20__ are subject to mandatory sinking payment redemption in part on September 1, 20__ and September 1, 20__, respectively, and on each September 1 thereafter to maturity, by lot, at a redemption price equal to 100% of the principal amount thereof to be redeemed, without premium, in the aggregate respective principal amounts as set forth in the following tables:

Term 2020 Bonds Maturing September 1, 20__

Mandatory Redemption Date (Sept. 1)	Sinking Fund Payment
---	-------------------------

(maturity)

* Preliminary; subject to change.

Term 2020 Bonds Maturing September 1, 20__

Mandatory Redemption Date (Sept. 1)	Sinking Fund Payment
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(maturity)

The amounts in the foregoing tables will be reduced pro rata, at the direction of the City in an Officer's Certificate, as a result of any prior partial optional redemption or mandatory redemption of the 2020 Bonds. In the event of a Prepayment, the City shall determine the allocation of prepayment proceeds among the 2020 Bonds, 2019 Bonds and Additional Bonds (if any).

Purchase In Lieu of Redemption. In lieu of redemption, moneys in the Bond Fund may be used and withdrawn by the Fiscal Agent for purchase of Outstanding 2020 Bonds, upon the filing with the Fiscal Agent of an Officer's Certificate requesting such purchase, at public or private sale as and when, and at such prices (including brokerage and other charges) as such Officer's Certificate may provide, but in no event may 2020 Bonds be purchased at a price in excess of the principal amount thereof, plus interest accrued to the date of purchase.

Redemption Procedure by Fiscal Agent. The Fiscal Agent will cause notice of any redemption to be mailed by first class mail, postage prepaid, at least 20 days but not more than 60 days prior to the date fixed for redemption, to the Securities Depositories and to one or more Information Services, and to the respective registered Owners of any 2020 Bonds designated for redemption, at their addresses appearing on the registration books in the Principal Office of the Fiscal Agent; but such mailing is not a condition precedent to such redemption and failure to mail or to receive any such notice, or any defect therein, will not affect the validity of the proceedings for the redemption of such 2020 Bonds.

Such notice will state the redemption date and the redemption price and, if less than all of the then Outstanding 2020 Bonds are to be called for redemption, will designate the CUSIP numbers and bond numbers of the 2020 Bonds to be redeemed by giving the individual CUSIP number and bond number of each 2020 Bond to be redeemed or will state that all 2020 Bonds between two stated bond numbers, both inclusive, are to be redeemed or that all of the 2020 Bonds of one or more maturities have been called for redemption, will state as to any 2020 Bond called in part the principal amount thereof to be redeemed, and will require that such 2020 Bonds be then surrendered at the Principal Office of the Fiscal Agent for redemption at the said redemption price, and will state that further interest on such 2020 Bonds will not accrue from and after the redemption date.

The City has the right to rescind any notice of the optional redemption of 2020 Bonds and such notice may be cancelled and annulled if for any reason funds will not be or are not available on the date fixed for redemption for the payment in full of the 2020 Bonds then called for redemption.

Whenever provision is made in the Fiscal Agent Agreement for the redemption of less than all of the 2020 Bonds of any maturity, the City will select the 2020 Bonds to be redeemed, from all 2020 Bonds or such given portion thereof of such maturity by lot in any manner which the City in its sole discretion deems appropriate that results in relatively uniform debt service. Upon surrender of 2020 Bonds redeemed in part only, the City will execute and the Fiscal Agent will authenticate and deliver to the registered Owner, at the expense of the City, a new 2020 Bond or 2020 Bonds, of the

same series and maturity, of authorized denominations in aggregate principal amount equal to the unredeemed portion of the 2020 Bond or 2020 Bonds.

Effect of Redemption. From and after the date fixed for redemption, if funds available for the payment of the principal of, and interest and any premium on, the 2020 Bonds so called for redemption are deposited in the Bond Fund, such 2020 Bonds so called will cease to be entitled to any benefit under the Fiscal Agent Agreement other than the right to receive payment of the redemption price, and no interest will accrue thereon on or after the redemption date specified in such notice.

Transfer or Exchange of Bonds

So long as the 2020 Bonds are registered in the name of Cede & Co., as nominee of DTC, transfers and exchanges of 2020 Bonds will be made in accordance with DTC procedures. See "APPENDIX G – DTC AND THE BOOK-ENTRY ONLY SYSTEM." Any 2020 Bond may, in accordance with its terms, be transferred or exchanged by the person in whose name it is registered, in person or by his duly authorized attorney, upon surrender of such 2020 Bond for cancellation, accompanied by delivery of a duly written instrument of transfer in a form approved by the Fiscal Agent. Whenever any 2020 Bond or 2020 Bonds are surrendered for transfer or exchange, the City will execute and the Fiscal Agent will authenticate and deliver a new 2020 Bond or 2020 Bonds, for a like aggregate principal amount of 2020 Bonds of authorized denominations and of the same maturity. The cost for any services rendered or any expenses incurred by the Fiscal Agent in connection with any such transfer or exchange will be paid by the City. The Fiscal Agent will collect from the Owner requesting such transfer any tax or other governmental charge required to be paid with respect to such transfer or exchange. No transfers or exchanges of 2020 Bonds will be required to be made (i) within 15 days prior to the date established by the Fiscal Agent for selection of 2020 Bonds for redemption or (ii) with respect to a 2020 Bond after such 2020 Bond has been selected for redemption.

SECURITY AND SOURCES OF PAYMENT FOR THE BONDS

Special Taxes

The Bonds (consisting of the 2020 Bonds, the 2019 Bonds and any Additional Bonds that may be issued in the future) are payable from and secured by proceeds of the Special Taxes received by the City, including all scheduled payments and delinquent payments thereof, interest and penalties thereon and proceeds of the redemption or sale of property sold as a result of foreclosure of the lien of the Special Taxes (but excluding any interest in excess of the interest due on the Bonds or any penalties collected in connection with any such foreclosure), and net of a 1% administration charge of the County (the “**Special Tax Revenues**”). All of the Special Tax Revenues and all moneys deposited in the Bond Fund and, until disbursed as provided herein, in the Improvement Fund and the Special Tax Fund are pledged to secure the repayment of the Bonds. In addition, with respect to each Series of Bonds, all moneys in the applicable subaccount of the Reserve Fund for such Series is pledged to secure the repayment of the applicable Series. The Special Tax Revenues and all moneys deposited into such funds (except as otherwise provided in the Fiscal Agent Agreement) are dedicated to the payment of the principal of, including any mandatory sinking fund payments, and interest and any premium on, the Bonds as provided in the Fiscal Agent Agreement and in the Act until all of the Bonds have been paid and retired or defeased in accordance with the Fiscal Agent Agreement.

A Special Tax applicable to each taxable parcel in the District will be levied and collected according to the tax amount determined by the City Council through the application of the Special Tax Formula administered by Willdan Financial Services, Temecula, California (the “**Special Tax Administrator**”) and set forth in APPENDIX A hereto for all taxable properties in the District. Prior to remittance of the Special Tax collections to the City, the County deducts and retains a 1% County administration fee, as noted above. Interest and principal on the Bonds is payable from the annual Special Tax Revenues to be paid to the City from Special Tax levies and collections on taxable property within the District, from amounts held in certain funds and accounts established under the Fiscal Agent Agreement and from the proceeds, if any, from the sale of such property for delinquency of such Special Taxes.

The Special Taxes are exempt from the property tax limitation of Article XIII A of the California Constitution, pursuant to Section 4 thereof as a “special tax” authorized by a two-thirds vote of the qualified electors. The levy of the Special Taxes was authorized by the City pursuant to the Act in an amount determined according to the Special Tax Formula approved by the City. See “Special Tax Methodology” below and “APPENDIX A – RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX.”

The amount of Special Taxes that the District may levy in any year, and from which principal and interest on the Bonds is to be paid, is strictly limited by the maximum rates approved by the qualified electors within the District, which is set forth in the Special Tax Formula. Under the Special Tax Formula, Special Taxes for the purpose of making payments on the Bonds will be levied annually in an amount not in excess of the maximum approved amount. The Special Taxes and any interest earned on the Special Taxes constitute a trust fund for the principal of and interest on the Bonds pursuant to the Fiscal Agent Agreement and, so long as the principal of and interest on these obligations remains unpaid, the Special Taxes and investment earnings thereon will not be used for any other purpose, except as permitted by the Fiscal Agent Agreement, and will be held in trust for the benefit of the owners thereof and will be applied pursuant to the Fiscal Agent Agreement. The Special Tax Formula apportions the Annual Facilities Costs (as defined in the Special Tax Formula and described below) among the taxable parcels of real property within the District according to the

rate and methodology set forth in the Special Tax Formula. See “Special Tax Methodology” below. See also “APPENDIX A — RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX.”

The City may levy the Special Tax up to the amount of the Maximum Annual Facilities Special Tax set forth in the Special Tax Formula, if conditions so require. The City has covenanted to annually levy the Special Taxes in an amount at least sufficient to pay the Annual Facilities Costs (as defined below). Because each Special Tax levy is limited to the Maximum Annual Facilities Special Tax rates authorized as set forth in the Special Tax Formula, no assurance can be given that, in the event of Special Tax delinquencies, the amount of the Annual Facilities Costs will in fact be collected in any given year. In addition, Section 53321(d) of the Act provides that the special tax levied against any parcel for which an occupancy permit for private residential use has been issued may not be increased as a consequence of delinquency or default by the owner of any other parcel within a community facilities district by more than 10% above the amount that would have been levied in such Fiscal Year had there never been any such delinquencies or defaults. See “SPECIAL RISK FACTORS – Tax Delinquencies” herein. The Special Taxes are collected for the City by the County in the same manner and at the same time as *ad valorem* property taxes.

Special Tax Methodology

Pursuant to the Special Tax Formula, a “Facilities Special Tax” will be levied and collected until the earlier of (i) the Transition Year or (ii) Fiscal Year 2082-83, and a “Maintenance Special Tax” will be levied and collected beginning in the Transition Year. For the definition of “Transition Year” and related matters, see APPENDIX A. *Only the “Facilities Special Tax” is pledged to the payment of the Bonds, and the definition of “**Special Taxes**” used in the Fiscal Agent Agreement and this Official Statement refers only to the “Facilities Special Tax” levied in accordance with the Special Tax Formula. Capitalized terms set forth in this section and not otherwise defined have the meanings set forth in the Special Tax Formula.*

Determination of Annual Facilities Costs. Each year, the City will determine the Annual Facilities Costs of the District for the upcoming Fiscal Year. The “**Annual Facilities Costs**” includes the following amounts (less any available earnings on any reserve fund, special tax funds, available capitalized interest or any other available revenues):

- (i) Debt Service to be paid from Facilities Special Taxes;
- (ii) the amount needed to replenish bond reserve funds to the level required by Bond documents, to the extent not included in a computation of Annual Facilities Costs in a previous Fiscal Year;
- (iii) Administrative Expenses for such Fiscal Year;
- (iv) the amount needed to (1) cure any delinquencies in the payment of principal or interest on Bonds which have occurred in the prior Fiscal Year, and (2) to fund any foreseeable deficiency of the amount to be available for the payment of principal or interest on Bonds which are expected to occur in the current or any previous Fiscal Year, to the extent not already included in the calculation of Annual Facilities Costs;
- (v) the amount needed to (1) cure any delinquencies in the payment of the Facilities Special Taxes in the prior Fiscal Year, (2) to fund any foreseeable deficiency of the amount to be available for the payment of Facilities Special Taxes which are expected to

occur in such Fiscal Year, in each case, to the extent not already included in the calculation of Annual Facilities Costs;

(vi) pay-as-you-go expenditures for authorized improvements; and

(vii) during the Deferral Bonding Period, the amount needed to pay Development Impact Fee Deferrals not financed by Bonds.

The Annual Facilities Costs is the basis for the amount of Special Tax to be levied within the District. In no event may the City levy a Special Tax in any year above the Maximum Annual Facilities Special Tax identified for each parcel in the Special Tax Formula.

Parcels Subject to the Facilities Special Tax. The Special Tax Formula designated five “original parcels,” corresponding to five separate development areas within the District, and additional parcels that are annexed into the District over time. Each fiscal year, the City will prepare a list of the parcels subject to the Special Tax using the records of the City and the County Assessor. The City will tax parcels within each zone within the District pursuant to the Special Tax Formula. Taxable Parcels that are acquired by a public agency after the District is formed will remain subject to the Facilities Special Tax unless a “trade” resulting in no loss of Facilities Special Tax revenue can be made, as described in the Special Tax Formula.

Limitation on Increases in Levy of Facilities Special Tax. If owners are delinquent in the payment of Facilities Special Taxes, the City may not increase Facilities Special Tax levies to make up for delinquencies for prior Fiscal Years above the Maximum Facilities Special Tax rates specified for each category of property within the District. In addition, Section 53321(d) of the Act provides that the special tax levied against any parcel for which an occupancy permit for private residential use has been issued may not be increased as a consequence of delinquency or default by the owner of any other parcel within a community facilities district by more than 10% above the amount that would have been levied in such Fiscal Year had there never been any such delinquencies or defaults. In cases of significant delinquency, these factors may result in defaults in the payment of principal of and interest on the Bonds. See “SPECIAL RISK FACTORS.”

Duration of the Facilities Special Tax; Transition Year. The Facilities Special Tax will be levied and collected (up to maximum allowable amount) until the earlier of (i) the Transition Year or (ii) Fiscal Year 2082-83. Transition Year means the first Fiscal Year following the Fiscal Year in which the Transition Event occurred, and Transition Event means the earlier of (i) after the Initial Bonding Period, the Fiscal Year in which the Administrator determines the Development Impact Fee Deferral has been repaid in full to the City and the City determines funding is no longer needed for Annual Facilities Costs, or (ii) Fiscal Year 2083-84. Initial Bonding Period means the period in which Bonds are outstanding or refunded which financed Authorized Facilities costs other than the Development Impact Fee Deferral.

Prepayment of the Facilities Special Tax. The Special Tax Formula provides that landowners may prepay some of the Facilities Special Tax by a cash settlement with the City. The amount of the prepayment required is to be calculated according to a formula set forth in the Special Tax Formula, which is generally based on the net present value of the remaining years in which the Facilities Special Tax will be collected, including the effect of a 2% per year escalation factor applicable for the time Bonds remain outstanding using a discount rate equal to the most current yield for the 30-year Treasury Constant Maturity as the discount factor, plus an amount representing the Development Impact Fee Deferral Amount (which amount is not available for prepayment of the Bonds), all as described in Section 8 of the Special Tax Formula set forth in APPENDIX A.

Prepayment is only allowed if the City determines that the prepayment does not jeopardize its ability to make timely payments of debt service on outstanding Bonds.

Levy of Annual Special Tax; Maximum Special Tax

The annual Special Tax will be calculated by the City and levied to provide money for debt service on the Bonds, replenishment of the Reserve Fund, certain delinquencies, administration of the District, and for payment of pay-as-you-go expenditures (to the extent permitted by the City) of the authorized District-funded facilities not funded from Bond proceeds. In no event may the City levy a Special Tax in any year above the maximum identified for each parcel in the Special Tax Formula.

For the 307 planned low-density-residential (LDR) units in the current boundary of the District, the Maximum Annual Facilities Special Tax for Fiscal Year 2020-21 equals \$1,872.72 per unit, while for the 88 planned medium-density-residential (MDR) units in the initial boundary of the District, the Maximum Annual Facilities Special Tax for Fiscal Year 2020-21 equals \$1,664.64 per unit. However, these amounts are subject to adjustment based upon the actual number of units built (in the event that less homes are built than are expected in the Special Tax Formula). The Maximum Annual Facilities Special Tax (as defined in the Special Tax Formula) shall escalate by 2% per year until the Transition Event, and thereafter shall no longer be levied. See "APPENDIX A – RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX" and for a table showing the expected land uses and assigned Maximum Special Taxes, see "Attachment 2" in such Appendix.

Annual Special Tax Levy. The Special Tax will be levied each year by calculating the amount needed to be generated by all Taxable Parcels in the District; the Special Tax (up to the maximum allowable amount) will be levied against each Taxable Parcel until the Special Tax revenue equals such amount; however, the Special Tax Formula establishes a priority for which properties will be levied a Special Tax. First, all "Developed Parcels" in the District receive a levy. If additional amounts are needed, a levy is made against each "Small Lot Tentative Map Parcel" in the District, then each "Large Lot Parcel" in the District, then each "Undeveloped Parcel" in the District. For single-family detached property, Developed Parcels are parcels shown on a Final Small Lot Subdivision Map recorded prior to May 1 of the preceding Fiscal Year. See "APPENDIX A – RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX."

The City covenants in the Fiscal Agent Agreement to fix and levy the amount of Special Taxes within the District required for the payment of principal of and interest on any outstanding Bonds of the District becoming due and payable during the ensuing year, including any necessary replenishment or expenditure of the Reserve Fund for the Bonds and an amount estimated to be sufficient to pay the Administrative Expenses during such year, all in accordance with the Special Tax Formula. The Special Tax is authorized to be levied in an amount not to exceed the Maximum Special Tax levy as described in the Special Tax Formula notwithstanding that a lower amount is sufficient to pay debt service on the Bonds. The Special Tax Formula provides a mechanism whereby the City may utilize the pay-as-you-go component to pay for and/or reimburse developers for a portion of the cost of Improvements not funded by proceeds of the bonds issued for the District. Proceeds of the annual Special Tax levy will first be used to pay the "Annual Facilities Costs" (which include debt service payments on the Bonds) other than pay-as-you-go expenditures, and the City contemplates that the levy will include a pay-as-you-go component in an amount equal to the Maximum Annual Facilities Special Tax on Developed Parcels, for deposit into the Improvement Fund for authorized costs not funded from Bond proceeds. See "THE IMPROVEMENTS" and "APPRAISAL OF PROPERTY WITHIN THE DISTRICT." See also "SECURITY AND SOURCES OF

PAYMENT FOR THE BONDS – Special Tax Methodology” above. See “APPENDIX A – RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX” for a copy of the Special Tax Formula.

Special Tax Fund

When received, the Special Tax Revenues are required under the Fiscal Agent Agreement to be deposited into a Special Tax Fund to be held by the City in trust for the benefit of the City and the Owners of the Bonds. Within the Special Tax Fund, the City has established and will maintain the Surplus Account, to the credit of which the City will deposit surplus Special Tax Revenue, if any, as described below. Moneys in the Special Tax Fund will be disbursed as provided below and, pending any disbursement, will be subject to a lien in favor of the Owners of the Bonds.

All Special Tax Revenue will be deposited in the Special Tax Fund upon receipt. Prior to each Interest Payment Date, the City will withdraw from the Special Tax Fund and transfer (i) to the Fiscal Agent for deposit in the reserve accounts of the Reserve Fund, an amount which when added to the amount then on deposit therein is equal to the Reserve Requirement with respect to each series of Bonds, and (ii) to the Fiscal Agent for deposit in the Bond Fund an amount, taking into account any amounts then on deposit in the Bond Fund, such that the amount in the Bond Fund equals the principal, premium, if any, and interest due on the Bonds on the next Interest Payment Date; provided, however, that as soon as practicable after the receipt by the City of any prepayments of Special Taxes, but no later than 10 Business Days after such receipt, the City shall transfer such prepayments to the Fiscal Agent for deposit into the Prepayment Account to be used for the redemption of Bonds. At such time as deposits to the Special Tax Fund equal the principal, premium if any, and interest becoming due on the Bonds for the current Bond Year and the amount needed to restore the reserve accounts of the Reserve Fund balance to the Reserve Requirement with respect to each series of Bonds, the amount in the Special Tax Fund in excess of such amount may, at the discretion of the City, be transferred to the Surplus Account, which will occur on or after September 2nd of each year. From time to time, the City may withdraw from the Surplus Account of the Special Tax Fund amounts needed to pay the City’s administrative expenses and County fees; provided that such transfers will not be in excess of the portion of the Special Tax Revenues collected by the City that represent levies for administrative expenses. Moneys in the Surplus Account may also be transferred, at the City’s discretion, to the Improvement Fund to pay for costs of the Improvements (including reimbursements to developers for the cost of Improvements not funded from proceeds of bonds issued for the District) or authorized facility contributions, to pay the principal of, premium, if any, and interest on the Bonds or to replenish amounts in the Reserve Fund. See “THE IMPROVEMENTS – Construction and Acquisition of the Improvements.”

Delinquent Payments of Special Tax; Covenant for Superior Court Foreclosure

The Special Tax will be collected in the same manner and the same time as *ad valorem* property taxes, except at the City’s option, the Special Taxes may be billed directly to property owners or collected at a different time to meet the City’s financial obligations. In the event of a delinquency in the payment of any installment of Special Taxes, the City is authorized by the Act to order institution of an action in superior court to foreclose the lien therefor.

The City has covenanted in the Fiscal Agent Agreement with and for the benefit of the Owners of the Bonds that it will annually on or before September 1 of each year review the public records of the County relating to the collection of the Special Tax in order to determine the amount of the Special Tax collected in the prior fiscal year, and if the City determines on the basis of such review that the amount so collected is deficient by more than 5% of the total amount of the Special Tax levied in the District in such Fiscal Year, it will within 30 days thereafter institute foreclosure proceedings as authorized by the Act in order to enforce the lien of the delinquent installment of the

Special Tax against each separate lot or parcel of land in the District for which such installment of the Special Tax is delinquent, and will diligently prosecute and pursue such foreclosure proceedings to judgment and sale; *provided*, that if the City determines on the basis of such review that (a) the amount so collected is deficient by less than 5% of the total amount of the Special Tax levied in the District in such Fiscal Year, but that property owned by any single property owner in the District is delinquent by more than \$5,000 with respect to the Special Tax due and payable by such property owner in such Fiscal Year, or (b) property owned by any single property owner in the District is delinquent cumulatively by more than \$3,250 with respect to the current and past Special Tax due (irrespective of the total delinquencies in the District), then the City will institute, prosecute and pursue such foreclosure proceedings in the time and manner provided herein against each such property owner.

Under the Act, foreclosure proceedings are instituted by the bringing of an action in the superior court of the county in which the parcel lies, naming the owner and other interested persons as defendants. The action is prosecuted in the same manner as other civil actions. In such action, the real property subject to the special taxes may be sold at a judicial foreclosure sale for a minimum price that will be sufficient to pay or reimburse the delinquent special taxes.

The owners of the 2020 Bonds benefit from the 2020 Reserve Account within the Reserve Fund established pursuant to the Fiscal Agent Agreement; however, if delinquencies in the payment of the Special Taxes with respect to the 2020 Bonds are significant enough to completely deplete the 2020 Reserve Account within the Reserve Fund, there could be a default or a delay in payments of principal and interest to the owners of the 2020 Bonds pending prosecution of foreclosure proceedings and receipt by the City of the proceeds of foreclosure sales. Provided that it is not levying the Special Tax at the Maximum Annual Facilities Special Tax rates set forth in the Special Tax Formula, the City may adjust the Special Taxes levied on all property within the District subject to the Special Tax to provide an amount required to pay debt service on the 2020 Bonds, 2019 Bonds and any Additional Bonds, and to replenish the reserve accounts established for each respective series of Bonds in the Reserve Fund. However, such adjustment is subject to the Maximum Annual Facilities Special Tax and to the limitation described under the caption “–Special Tax Methodology” above.

Under current law, a judgment debtor (property owner) has at least 120 days from the date of service of the notice of levy to redeem the property to be sold. If a judgment debtor fails to redeem and the property is sold, his or her only remedy is an action to set aside the sale, which must be brought within 90 days of the date of sale. If, as a result of such an action a foreclosure sale is set aside, the judgment is revived and the judgment creditor is entitled to interest on the revived judgment as if the sale had not been made (California Code of Civil Procedure Section 701.680).

Foreclosure by court action is subject to normal litigation delays, the nature and extent of which are largely dependent upon the nature of the defense, if any, put forth by the debtor and the condition of the calendar of the superior court of the county. Such foreclosure actions can be stayed by the superior court on generally accepted equitable grounds or as the result of the debtor's filing for relief under the Federal bankruptcy laws. The Act provides that, upon foreclosure, the Special Tax lien will have the same lien priority as is provided for *ad valorem* taxes and special assessments. See “APPRAISAL OF PROPERTY WITHIN THE DISTRICT – Priority of Lien.”

No assurances can be given that the real property subject to a judicial foreclosure sale will be sold or, if sold, that the proceeds of sale will be sufficient to pay any delinquent Special Tax installment. The Act does not require the District to purchase or otherwise acquire any lot or parcel of property foreclosed upon if there is no other purchaser at such sale.

Section 53356.6 of the Act requires that property sold pursuant to foreclosure under the Act be sold for not less than the amount of judgment in the foreclosure action, plus post-judgment interest and authorized costs, unless the consent of the owners of 75% of the outstanding Bonds is obtained. However, under Section 53356.6 of the Act, the District, as judgment creditor, is entitled to purchase any property sold at foreclosure using a “credit bid,” where the District could submit a bid crediting all or part of the amount required to satisfy the judgment for the delinquent amount of the Special Tax. If the District becomes the purchaser under a credit bid, the District must pay the amount of its credit bid into the redemption fund established for the Bonds, but this payment may be made up to 24 months after the date of the foreclosure sale.

2020 Reserve Account of Reserve Fund

In connection with the issuance of the 2019 Bonds, the Reserve Fund was established under the Fiscal Agent Agreement, and within the Reserve Fund separate accounts are established for each series of Bonds. Accordingly, the 2019 Reserve Account was established for the 2019 Bonds, and the 2020 Reserve Account is being established for the 2020 Bonds. Amounts in the 2019 Reserve Account are available solely for the payment of debt service on the 2019 Bonds, and amounts in the 2020 Reserve Account are available solely for the payment of debt service on the 2020 Bonds. If there are additional delinquencies after depletion of funds in the 2020 Reserve Account of the Reserve Fund, the City is not obligated to pay the 2020 Bonds or supplement the 2020 Reserve Account of the Reserve Fund.

Upon delivery of the 2020 Bonds, the Fiscal Agent will deposit an amount of the proceeds into the 2020 Reserve Account of the Reserve Fund so that the amount therein equals the “**Reserve Requirement**,” which means, with respect to any series of Bonds, the least of (i) 125% of the average Annual Debt Service with respect to the applicable series of Bonds; (ii) Maximum Annual Debt Service with respect to the applicable series of Bonds; and (iii) 10% of the original principal amount of the applicable series of Bonds (or, if the applicable series of Bonds has more than a de minimis amount of original issue discount or premium, 10% of the issue price of such series of Bonds); provided, that—

(a) the Reserve Requirement for the 2020 Bonds or 2019 Bonds shall not increase after the date of issuance of the 2020 Bonds or 2019 Bonds, respectively;

(b) in no event shall the City be obligated to deposit an amount in any reserve fund in excess of the amount permitted by the applicable provisions of the Code to be so deposited from the proceeds of tax-exempt bonds without having to restrict the yield of any investment purchased with any portion of such deposit and, if the amount of any such deposit is so limited, the Reserve Requirement shall be only the amount of such deposit as permitted by the Code; and

(c) the City may meet all or a portion of the Reserve Requirement with respect to any series of Bonds by depositing a Qualified Reserve Fund Credit Instrument.

For each series of Additional Bonds, the Fiscal Agent shall establish a separate subaccount within the Reserve Fund for such series and moneys in each subaccount shall be held in trust by the Fiscal Agent for the benefit of the Owners of the respective series of Bonds.

The City has the right to either meet the Reserve Requirement at the time of issuance of a series of Bonds or at any time thereafter to cause the Fiscal Agent to release cash from the Reserve

Fund, in whole or in part, by tendering to the Fiscal Agent: (1) a Qualified Reserve Fund Credit Instrument, and (2) in the case of a release, an opinion of Bond Counsel stating that such release will not, of itself, cause the portion of the interest on the Bonds secured thereby to become includable in gross income for purposes of federal income taxation. Upon tender of such items to the Fiscal Agent in connection with a release of cash, the Fiscal Agent will transfer such funds to the City. Prior to the expiration of any Qualified Reserve Fund Credit Instrument, if applicable, the City is obligated either to replace such Qualified Reserve Fund Credit Instrument with a new Qualified Reserve Fund Credit Instrument, or to deposit or cause to be deposited with the Fiscal Agent an amount of funds such that the funds on deposit in the Reserve Fund together with all Qualified Reserve Fund Credit Instruments held by the Fiscal Agent is at least equal to the Reserve Requirement (which funds may come from a draw by the Fiscal Agent on the Qualified Reserve Fund Credit Instrument prior to its expiration).

“Qualified Reserve Fund Credit Instrument” means an irrevocable standby or direct-pay letter of credit or surety bond issued by a commercial bank or insurance company and deposited with the Fiscal Agent, provided that all of the following requirements are met: (a) the long-term credit rating of such bank or insurance company is rated in the top two categories (without regard to modifier) by S&P or Moody’s at the time of issuance; (b) such letter of credit or surety bond has a term of at least 12 months; (c) such letter of credit or surety bond has a stated amount at least equal to the portion of the Reserve Requirement being met by such instrument or with respect to which funds are proposed to be released pursuant to the Fiscal Agent Agreement; and (d) the Fiscal Agent is authorized pursuant to the terms of such letter of credit or surety bond to draw thereunder an amount equal to any deficiencies which may exist from time to time in the Bond Fund for the purpose of making payments required pursuant to the Fiscal Agent Agreement.

Whenever, on the Business Day prior to any Interest Payment Date, the amount in any reserve account within the Reserve Fund exceeds the Reserve Requirement for the applicable series of Bonds covered by such reserve account, the Fiscal Agent shall provide written notice to the Chief Financial Officer of the amount of the excess. The Chief Financial Officer shall advise the Fiscal Agent in writing of the amount, if any, of any transfer required pursuant to the Fiscal Agent Agreement, and otherwise direct the Fiscal Agent to transfer an amount equal to the excess to the Improvement Fund, if the Project has not been completed as of the date of such transfer, or if the Project has been completed, to the Bond Fund to be used for the payment of the principal of and interest on the Outstanding Bonds covered by the applicable reserve account in accordance with the Fiscal Agent Agreement; provided, that to the extent that such excess results from the prepayment of Special Taxes and redemption of Bonds, such amount shall be transferred to the Prepayment Account and applied to the corresponding redemption of Bonds.

Whenever the balance in the Reserve Fund exceeds the amount required to redeem or pay the Outstanding Bonds, including interest accrued to the date of payment or redemption and premium, if any, due upon redemption, and make any other transfer required under the Fiscal Agent Agreement, the Fiscal Agent will transfer the amount in the Reserve Fund to the Bond Fund to be applied, on the next succeeding Interest Payment Date, to the payment and redemption of all of the Outstanding Bonds. If the amount so transferred from the Reserve Fund to the Bond Fund exceeds the amount required to pay and redeem the Outstanding Bonds, the balance in the Reserve Fund will be transferred to the City, after payment of any amounts due the Fiscal Agent, to be used for any lawful purpose of the City.

Improvement Fund

Under the Fiscal Agent Agreement, there is established an Improvement Fund (and within the Improvement Fund, accounts corresponding to respective series of Bonds), which is to be held in trust by the Fiscal Agent and will be disbursed as provided in the Fiscal Agent Agreement for the payment or reimbursement of the costs of the construction and acquisition of the Improvements in accordance with the Acquisition Agreement (as described herein). Interest earnings from the investment of amounts in the Improvement Fund will be retained in the Improvement Fund to be used for the purposes of the Improvement Fund.

Upon completion of the Improvements and payment to JMC Homes or other entities that are due reimbursement for Improvements, the Fiscal Agent will transfer the amount, if any, remaining in the Improvement Fund to the Bond Fund for application to the payment of principal of and interest on the Bonds in accordance with the Fiscal Agent Agreement, and the Improvement Fund will be closed. See "THE IMPROVEMENTS."

Parity Bonds

The Resolution of Formation authorizes the issuance of up to \$310,000,000 of special tax bonds for the District. In 2019, the City issued \$12,540,000 initial principal amount of 2019 Bonds, which was the first series of special tax bonds issued under this authorization. The 2020 Bonds represent the second series of special tax bonds issued under this authorization. The City expects that it will, by a Supplemental Agreement, authorize the issuance of one or more additional series of Additional Bonds payable from Special Taxes and secured by the Special Tax Revenues on a parity with the 2020 Bonds and 2019 Bonds, as development progresses in the District and upon compliance by the City with the conditions set forth in the Fiscal Agent Agreement, which include the following:

(i) There shall be deposited into a reserve account of the Reserve Fund, an amount at least equal to the Reserve Requirement with respect to such Additional Bonds.

(ii) For each Bond Year the Additional Bonds are Outstanding, projected Special Taxes Revenues, if levied at the maximum annual Special Tax rates per the Special Tax Formula, in each Fiscal Year are at least equal to 110% of Debt Service due in the Bond Year that begins in the corresponding Fiscal Year, as calculated by the special tax consultant to the City.

(iii) Both of the following conditions are met:

(A) Regarding All Parcels in the District: The aggregate value of all parcels in the District subject to the Special Tax, including then existing improvements and any facilities to be constructed or acquired with the proceeds of the Additional Bonds, as determined by an MAI appraisal, assessed valuations shown on the then current County tax roll, or by a combination of both methods, is at least 3.00 times the sum of (1) the aggregate principal amount of all Bonds then Outstanding, plus (2) the aggregate principal amount of the Additional Bonds proposed to be issued, plus (3) the aggregate principal amount of any bonds then outstanding and payable from assessments which are a lien against property in the District, plus (4) a portion of the aggregate principal amount of all bonds issued under the Act, other than Bonds then Outstanding, payable at least partially from special taxes to be levied on parcels of land subject to the Special Tax within the District (the "**Other Mello-Roos Bonds**")

equal to the aggregate principal amount of the Other Mello-Roos Bonds multiplied by a fraction, the numerator of which is the amount of special taxes levied for the Other Mello-Roos Bonds on parcels of land within the District subject to the Special Tax, and the denominator of which is the total amount of special taxes levied for the Other Mello-Roos Bonds on all parcels of land subject to the Special Tax against which the special taxes are levied to pay the Other Mello-Roos Bonds (such fraction to be determined based upon the special taxes which could be levied the year in which maximum annual debt service on the Other Mello-Roos Bonds occurs), based upon information from the most recent available Fiscal Year.

(B) Regarding Recently Annexed Parcels: The aggregate value of the Recently Annexed Parcels, including then existing improvements and any facilities to be constructed or acquired with the proceeds of the Additional Bonds, as determined by an MAI appraisal, assessed valuations shown on the then current County tax roll, or by a combination of both methods, is at least 3.00 times the sum of (1) the Attributable Principal Amount of all Bonds then Outstanding, plus (2) the Attributable Principal Amount of the Additional Bonds proposed to be issued, plus (3) the amount of any bonds then outstanding and payable from assessments which are a lien against the Recently Annexed Parcels, plus (4) the allocation of Other Mello-Roos Bonds determined to be applicable to the Recently Annexed Parcels.

As used herein, “*Recently Annexed Parcels*” means all parcels in the District subject to the Special Tax which were annexed into the District following the closing date for the then-most recently issued series of Bonds, and “*Attributable Principal Amount*” means for the Bonds or any Additional Bonds, calculated separately, an amount equal to the aggregate outstanding principal amount of such Bonds and Additional Bonds multiplied by a fraction, the numerator of which is the amount of special taxes that will be levied for such Bonds and Additional Bonds on Recently Annexed Parcels in the first fiscal year in which the levy includes debt service for the applicable series of Additional Bonds, and the denominator of which is the total amount of special taxes that will be levied for the Bonds and Additional Bonds on all parcels of land in the District against which the special taxes are levied to pay the Bonds and Additional Bonds in such fiscal year.

Additional Bonds may be issued for the purpose of refunding any outstanding Bonds without meeting the foregoing conditions so long as debt service on the refunding Bonds in each Bond Year is less than debt service on the Bonds refunded.

Nothing in the Fiscal Agent Agreement shall be interpreted to prohibit issuance of bonds or Additional Bonds secured on a subordinate basis to the Bonds.

In connection with the approval of development in the District, the City has agreed that payment of certain impact fees owed by JMC Homes will be deferred (referred to as the “Development Impact Fee Deferral” in the Special Tax Formula) to allow payment of the deferred fees after the 2019 Bonds have been fully paid. [The City expects to receive payment for the deferred impact fees either through continued collection of Special Taxes or through the issuance of future bonds after the 2019 Bonds have matured.] If the City chooses to issue bonds to pay deferred impact fees, the remaining authorization will be available to be utilized by the City as a means therefor.

DEBT SERVICE SCHEDULES

The annual debt service on the 2020 Bonds, based on the interest rates and maturity schedule set forth on the cover of this Official Statement, together with the annual debt service on the 2019 Bonds, in each case, assuming no early redemptions, is set forth below.

City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Special Tax Bonds Series 2020
Debt Service – 2020 Bonds and 2019 Bonds

Year Ending (Sept. 1)	2020 Bonds <u>Principal</u>	2020 Bonds <u>Interest</u>	2020 Bonds <u>Total Debt Service</u>	2019 Bonds <u>Total Debt Service</u>	Total Parity <u>Debt Service</u>
2020					
2021					
2022					
2023					
2024					
2025					
2026					
2027					
2028					
2029					
2030					
2031					
2032					
2033					
2034					
2035					
2036					
2037					
2038					
2039					
2040					
2041					
2042					
2043					
2044					
2045					
2046					
2047					
2048					
2049					
2050					
Total					

Source: Underwriter for 2020 Bonds; Fiscal Agent for 2019 Bonds.

THE SIERRA VISTA SPECIFIC PLAN

The Sierra Vista Specific Plan (“**SVSP**”) is the primary land use, policy and regulatory document used to guide development of the project area. The Specific Plan establishes a development framework for land use, affordable housing, resource protection, circulation, utilities and services, implementation and design. The intent is to promote the systematic and orderly development of the plan area. All subsequent development projects and related activities in the SVSP area are required to be consistent with the SVSP. The SVSP implements the goals and policies of the City of Roseville General Plan and augments these goals and policies by providing specific direction to reflect conditions unique to the project and Plan Area. The General Plan serves as the long-term policy guide for the physical, economic and environmental growth of the City. The property within the District was included within the SVSP at adoption, and is a component of the SVSP. The full text of the SVSP is available on the City’s website.

Land Use Concept. The SVSP is planned primarily as a residential community, with a significant commercial and employment center along Baseline Road, which properties are not part of the District and not subject to the Special Taxes securing the Bonds. The overall mix and intensity of uses is similar to that found in adjacent portions of the City. The SVSP also provides for recreation, open space, employment and educational opportunities available to residents both within and outside the SVSP area.

The primary elements that comprise the form of the SVSP land use plan include: the residential neighborhoods; a range of commercial and employment uses, schools, parks and open space, as more particularly described below.

Residential Neighborhoods - A variety of housing styles similar to that found elsewhere in the City are planned, including affordable housing and designated age restricted neighborhoods. High density residential comprises approximately 30% of planned residential uses.

Commercial and Employment - A range of commercial and employment uses are proposed within the SVSP, including commercial mixed-use, business professional mixed-use, and community commercial uses. Conventional commercial sites are provided as well, typically along arterial roadways. The SVSP’s employment and service uses are intended to complement and further diversify the City’s employment, retail, service, and revenue base.

Neighborhood Parks - Neighborhood parks are proposed throughout the SVSP, some are located adjacent to the elementary schools and middle school sites, maximizing the potential for joint-use opportunities with the outdoor recreation facilities. Park facilities range from approximately one to approximately 10 acres in size. Some of the SVSP’s neighborhood parks would be linked to a system of paseos, providing a comprehensive network of pedestrian and bikeway connections to the SVSP’s parks and open space system. Neighborhood parks typically include a mix of soccer and baseball fields, tot lots, playgrounds, picnic area, and hard surface game courts.

Open Space - Approximately 317 acres of the SVSP are proposed as Open Space, comprising approximately 15 percent of the total project site acreage. Open Space land use and zoning is generally applied to lands that are environmentally sensitive or otherwise significant due to habitat, natural features, or man-made features. Open space corridors provide for passive recreation opportunities, preservation of significant resources, viewsheds, potential floodwater conveyance and retention, resource mitigation, wildlife

movement corridors, and can function to improve the interface between uses. In many locations, the preserve area accommodates a dedicated Class I pedestrian pathway to be shared with a vehicle maintenance road for maintenance activities. In addition, open space areas could accommodate utility lines and provide the conduit for drainage and space for storm water treatment and detention facilities within the SVSP area. Any disturbance or construction within open space preserve areas of the SVSP would comply with the provisions of the Army Corps of Engineers approved Open Space Management Plan and Section 404 permit requirements.

Land Use Plan. The SVSP land use plan includes a blend of residential, service, employment, open space and public uses. The SVSP area is statistically projected to house approximately 22,045 residents and in excess of 9,000 employees. The SVSP includes a total of 8,679 dwelling units on approximately 2,064 gross acres. Proposed land uses include a total of approximately 317 acres set aside in open space; 106 acres for dedication to parks; 71 acres of public/quasi-public uses; 190 acres of community commercial; 27 acres of business professional; and 41 acres of commercial mixed use.

THE DISTRICT

Location and Description of the District and the Immediate Area

General. John Mourier Construction, Inc. (referred to herein as “JMC Homes”) is developing approximately 115 acres of property into 678 residential units, within the current boundary of the District. The District is located in the SVSP area, which is in the northwest portion of the City. Property in the District is within the Center Joint Unified School District. The property was annexed into the City in 2010 when the property was owned by Mourier Investments, LLC (“MILLC”), an investment affiliate of JMC Homes. Areas of future annexation into the District are currently owned by MILLC and consist of approximately 562 acres of property. The land owned by JMC Homes and MILLC in the SVSP area is generally level topography, currently with large open annual grassland areas. The SVSP has targeted a majority of the creek corridors, and a portion of the seasonal wetlands, for preservation in permanent open space. High-voltage power lines run adjacent to certain land in the District. See “THE SIERRA VISTA SPECIFIC PLAN” above.

Map. A map showing the entire project, including both the initial boundary of the District and the areas in the Future Annexation Area, is shown on the following page. The pages following thereafter provide aerial overviews of portions of land within the District; the aerials do not show all of the property in the District.

[Reserved for boundary map]

[Aerial map #1]

[Aerial map #2]

Entitlements and Development

JMC Homes has provided the following information with respect to entitlements and current and anticipated development of land in the District. No assurance can be given that all information is complete. No assurance can be given that development of land in the District will be completed, or that it will be completed in a timely manner. Since the ownership of the parcels is subject to change, the development plans outlined below may not be continued by the subsequent owner if the parcels are sold, although development by any subsequent owner will be subject to the SVSP, the Development Agreements described herein and the policies and requirements of the City. No assurance can be given that the plans or projections detailed below will actually occur.

Overview. As noted above, development within the current District boundary is anticipated by JMC Homes to be consistent with the SVSP land uses, which primarily consist of low-density and medium-density residential neighborhoods. Permitted land uses are configured to reinforce the neighborhood identity and sense of community. See “THE SIERRA VISTA SPECIFIC PLAN” above.

MILLC and JMC Homes currently own approximately 677 acres in the SVSP area, which is approved for development in the SVSP for 2,839 residential units and 25.3 acres of non-residential (retail/office) uses. Property currently in the District and subject to the Special Tax comprises approximately 115 acres planned for 678 residential homes. This includes 73 acres planned for 395 residential homes in the original boundary of the District, plus 42 acres planned for 283 residential units that were annexed into the District in 2020 from the future annexation area. JMC Homes is a homebuilder and expects to build-out the entirety of the 678 residential units in the current boundary of the District over time. Further, JMC Homes has, with respect to the 283 residential units annexed to the District in 2020, and expects to continue in the future, purchase the property comprising the future annexation areas from MILLC, as market conditions warrant.

Entitlements. The entitlements permit a development proposal related to a particular parcel to proceed through tentative map subdivision and design-review permitting processes to final mapping provided the development application is in accord with the entitlements and the final map conditions. The land received full land use approval in 2010, including, but not limited to, approval of Specific Plan Zoning and Development Agreements, and subsequently received a Section 404 (wetlands) permit, California Water Board Section 401 Certification, and U.S. Fish and Wildlife Service Biological Opinion.

With respect to the 395 lots that were part of the initial District boundary, these lots received a grading permit and site improvement plans from the City in 2018 and 2019. Site development for these 395 lots commenced in May 2018 and concluded in April 2019 for JM-2A, JM-3A and JM-20A and in February 2020 for JM-4 with all of the improvements accepted by the City. With respect to the 283 lots that were annexed into the District boundary in 2020, these lots received a grading permit and site improvement plans from the City in 2020. Site development for these 283 lots commenced in May 2020 and is expected to be completed and accepted by the City in the first quarter of 2021.

Property currently within the District encompasses approximately 115 gross acres, planned for development into 678 residential units. Property in the Future Annexation Area encompasses approximately 561 gross acres, planned for development into an additional 2,161 residential units; these parcels are not currently in the District and are therefore not currently subject to the Special Tax securing the Bonds. JMC Homes anticipates annexing additional lots into the District every few years as market conditions warrant. JMC Homes expects that each annexation will contain a similar number of lots as the initial number of lots in the District. However, the timing of each annexation

and number of lots in each annexation may vary based on market conditions. Further, the City and JMC Homes could choose to create new community facilities districts or separate improvement areas for land within the Future Annexation Area.

The tables on the following page shows the entitlements for all of the land owned by MILLC and JMC Homes in the SVSP. Currently, only parcels JM-2A, JM-3A, JM-4 and JM-20A are located within the boundary of the District and subject to the Special Tax securing the Bonds.

Table 1
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Current District Boundary (as of July 1, 2020) – Owned by JMC Homes

Village (Parcel)	Land Use	Acres	Planned Units	Building Permits
<i><u>Phase 1</u></i>				
JM-2A	LDR	15.3	92	85
JM-3A	LDR	19.5	83	69
JM-4	LDR	25.6	132	28
JM-20A	MDR	12.4	88	60
	<i>Sub-Total</i>	72.8	395	242
<i><u>Phase 2</u></i>				
JM-2B	LDR	14.40	95	--
JM-3B	LDR	10.63	44	--
JM-20B	MDR	9.50	75	--
JM-20 Phase 3.1A	MDR	7.70	69	--
	<i>Sub-Total</i>	42.23	283	--
	<i>Total</i>	115.03	678	242

Future Annexation Area (Not in District as of July 1, 2020) – Owned by MILLC

Village (Parcel)	Land Use	Acres	Planned Units
JM-1	LDR	17.00	135
JM-20 Phase 3.1B	MDR	10.00	39
JM-21	MDR	18.28	95
JM-30	HDR	7.51	159
JM-40	CMU	5.65	40
JM-41	CC	13.48	--
FD-6	LDR	14.37	95
FD-7	LDR	8.80	57
FD-8A	LDR	16.21	78
FD-8B	LDR	18.82	86
FD-10	LDR	20.26	93
FD-21	MDR	24.39	204
FD-23	MDR	17.40	143
FD-24	MDR	10.71	96
FD-32	HDR	8.90	178
FD-33 (1/2 owner)	HDR	4.30	86
FD-41	CMU	5.92	40
CO-1	LDR	17.38	86
CO-2A	LDR	14.04	71
CO-2B	LDR	14.65	73
CO-3	LDR	17.16	78
CO-20	MDR	11.61	84
CO-21	MDR	9.15	70
CO-22	MDR	6.01	43
CO-41	CC	0.16	--
Parks / OS / ROW / Other	Misc.	249.82	--
	<i>Total</i>	561.98	2,129

Development Agreements

General. MILLC entered into Development Agreements, dated June 18, 2010 (“**Development Agreements**”) with the City in accordance with applicable state and local codes. The Development Agreements vest development rights, set forth infrastructure improvements and dedication requirements, secure the timing and methods for financing improvements, and specify other performance obligations as related to development in the Sierra Vista Specific Plan area. All of the property in the District is subject to the requirements of the Development Agreements as well as the SVSP. The Development Agreements were entered into in accordance with Sections 65864 through 65869.5 of the California Government Code, as implemented through Article V, Chapter 19.84 of the City’s Zoning Ordinance No. 802.

Development Agreements are the primary implementation tools for the SVSP and are intended to create a binding contract between the City and MILLC and their assigned successors in interest, which set forth the needed infrastructure improvements, park dedication requirements, timing and method for financing improvements and other specific performance obligations of the City and MILLC, including obligations related to development of the property in the District, with the terms, conditions, rules, regulations, entitlements, vested rights and other provisions relating to the development of the property in the District according to the SVSP entitlements. Included are provisions relating to infrastructure improvements, public dedication requirements, landscaping amenities and other obligations of the parties. The Development Agreements have a 30-year term, run with the property, and may be modified only by mutual consent of the City and landowner and in a manner consistent with the SVSP. With the Development Agreements in place, subject to compliance with the terms of the Development Agreements, construction of homes within the District may occur upon City approval of subdivision maps, satisfaction of certain design requirements and conditions of such maps and issuance of building permits.

Land use and development entitlements granted under the Development Agreements for property in the District are consistent with the SVSP as described under the caption “THE SIERRA VISTA SPECIFIC PLAN” and summarized above.

Improvements. The Development Agreements set forth the responsibility of MILLC and its successors (including JMC Homes) for a portion of the costs of certain public improvements required for its development within the SVSP, including an electric substation. The dedication of the electric substation site occurred on May 26, 2017, and [it is now fully functioning]. JMC Homes does not believe any of these improvements – including completion of the electric substation by the City – will impair its ability to timely obtain building permits.

Funding of the Improvements with the 2020 Bonds and Additional Bond proceeds will satisfy a portion, but not all, of the relevant obligations of the District for infrastructure improvements required by the Development Agreements. See Table 6 herein for a sources and uses table. The improvements not funded from the 2020 Bonds and Additional Bonds or Special Taxes are required to be funded by JMC Homes. See “THE IMPROVEMENTS” below.

No Affordable Units. There are no affordable unit requirements for the land in the current District boundary.

Environmental Matters

Flood Hazard Map Information. According to the Federal Emergency Management Agency’s flood insurance rate maps (Flood Area Panel Number 060243, with an effective date of

November 2, 2018), the developable portions of the property in the project area (including land in the District) are located within Flood Zone X, described as areas of minimal flooding (outside of the 100 and 500-year floodplains).

Wetland Conditions. According to the City's planning department, some jurisdictional wetlands will be affected by the development of the project, however the impact has been mitigated by the landowner. No additional environmental permits are required to be obtained.

Seismic Conditions. The property expected to be developed as part of the project (including land in the District) is not located within a seismic special studies zone, designated by the California State Division of Mines and Geology, in accordance with the Alquist-Priolo Special Study Zone Act of 1972.

OWNERSHIP OF PROPERTY WITHIN THE DISTRICT

Unpaid Special Taxes do not constitute a personal indebtedness of the owners of the property within the District. There is no assurance that the present property owners or any subsequent owners will have the ability to pay the Special Taxes or that, even if they have the ability, they will choose to pay the Special Taxes. An owner may elect to not pay the Special Taxes when due and cannot be legally compelled to do so. Neither the City nor any Bond Owner will have the ability at any time to seek payment directly from the owners of property within the District of the Special Tax or the principal or interest on the Bonds, or the ability to control who becomes a subsequent owner of any property within the District.

JMC Homes has provided the information set forth in this section entitled "OWNERSHIP OF PROPERTY WITHIN THE DISTRICT." No assurance can be given that all information is complete. In addition, any Internet addresses included below are for reference only, and the information on those Internet sites is not a part of this Official Statement or incorporated by reference into this Official Statement.

No assurance can be given that development of the property will be completed, or that it will be completed in a timely manner, as described herein. The Special Taxes are not personal obligations of JMC Homes or of any subsequent landowners; the Bonds are secured only by the Special Taxes and moneys available under the Fiscal Agent Agreement. See "SECURITY AND SOURCES OF PAYMENT FOR THE BONDS" and "SPECIAL RISK FACTORS" herein.

Current Property Owners in the District

As of April 21, 2020 (the date of value of the Appraisal), JMC Homes had 15 model homes built and open to the public. The model homes are located in JM-2A, JM-3A, JM-4 and JM-20A, within phase 1 of the development, but available to serve phase 1 and phase 2 production. Sales are currently underway within phase 1 of the development, and as of April 24, 2020, 191 homes have sold of which 114 have closed to individual homeowners. JMC Homes estimates that the last of the 395 homes planned for phase 1 of the development will be completed and sold to individual homeowners by January 2024, while the last of the 283 homes planned for phase 2 of the development will be completed and sold to individual homeowners by October 2023.

The following table shows ownership and value-to-lien ratios for parcels in the District as of April 21, 2020 (the Appraiser's date of value).

Table 2
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Current Ownership in the District as of April 21, 2020

Ownership ⁽¹⁾ / Tax Status ⁽²⁾	No. of Parcels	No. of Units	Appraised Value ⁽²⁾	FY 2020-21 Maximum Facilities Tax	Projected FY 2020-21 Facilities Special Tax Levy ⁽⁵⁾ *	Allocable CFD Bonds ⁽⁶⁾⁽⁷⁾ *	% of Total CFD Bonds ⁽⁷⁾	Overlapping Debt ⁽⁸⁾	Total Direct & Overlapping Debt *	Average Value to Lien Ratios *
Individual Homeowners – Developed	114	114	\$58,185,000	\$208,080	\$208,080	\$3,626,917	17.04%	\$31,211	\$3,658,128	15.91
<u>JMC Homes and Affiliates ⁽⁹⁾</u>										
Developed Parcels	281	281	\$39,158,527	\$513,334	\$513,334	\$8,947,603	42.03%	\$73,098	\$9,020,701	4.34
Tentative Map Parcels ⁽⁵⁾⁽¹⁰⁾	4	283	26,765,223	500,016	423,586	8,715,480	40.93%	71,485	8,786,965	3.05
Subtotal – JMC Homes and Affiliates	285	564	\$65,923,750	\$1,013,350	\$936,920	\$17,663,083	82.96%	\$144,583	\$17,807,666	3.70
Total	399	678	\$124,108,750	\$1,221,430	\$1,145,000	\$21,290,000	100.00%	\$175,794	\$21,465,794	5.78

* Preliminary, subject to change.

- (1) Ownership as of the April 21, 2020 inspection date of the Appraisal Report.
- (2) For the fiscal year 2020-21 Special Tax levy, Developed Parcels consist of all District parcels for which a Final Small Lot Subdivision Map was recorded before May 1, 2020 while Tentative Map Parcels consist of all parcels included in a Small Lot Tentative Map that was approved before May 1, 2020 and which have not yet become a Developed Parcel.
- (3) Planned number of residential lots per the District's Special Tax Formula.
- (4) Appraised Values as of April 21, 2020.
- (5) The Projected FY 2020-21 Special Tax Levy consists of the parcels within the original CFD boundary to be taxed at 100% of the Maximum Facilities Special Tax while the 283 entitled units within Annexation No. 1 expected to be taxed at a Special Tax rate of 85%* of the Maximum Facilities Special Tax.
- (6) Represents the outstanding balance of \$12,540,000 of the 2019 Bonds and the estimated par amount of \$8,750,000* of the 2020 Bonds.
- (7) This table allocates the CFD Debt based upon each parcel's share of the District's Maximum Facilities Special Tax.
- (8) Overlapping debt liens of the District parcels as of May 1, 2020 as summarized under the "Direct and Overlapping Tax and Assessment Debt" table in the overlapping debt report prepared by California Municipal Statistics, Inc. No direct charges related to PACE liens secured by Special Taxes were levied onto the District parcels in FY 2019-20; the existence of any PACE Liens would not be reflected in the overlapping debt report.
- (9) This ownership Includes one parcel owned by Mourier Investments LLC which consists of 69 tentatively approved MDR lots.
- (10) All taxable property within Annexation No. 1 is considered to be Tentative Map Parcels for the fiscal year 2020-21 Special Tax Levy.

Sources: Ownership and Appraised Value - Integra Realty Resources, Inc.; Tax Status - County Assessor Maps and Developer and Overlapping Debt - California Municipal Statistics, Inc, as compiled by Willdan Financial Services

Information Regarding JMC Homes

JMC Homes has been doing business in the greater Sacramento area as a homebuilder since 1978. It has averaged annual new homes sales volume in excess of \$110 million for the past five years and is currently ranked as the 100th largest homebuilder by *Professional Builder* magazine. It is currently building and selling homes in Roseville, Rocklin, Lincoln and Marysville in the Sacramento area. *JMC Homes' website address is <http://www.jmchomes.com>. The website address is given for reference and convenience only, the information on the website may be incomplete or inaccurate and has not been reviewed by the City or the Underwriter. Nothing on the website is a part of this Official Statement or incorporated into this Official Statement by reference.*

Current and Proposed Development by JMC Homes

Overview. As noted above, development within the initial District boundary has so far been, and is anticipated by JMC Homes to continue to be, consistent with the SVSP land uses, which primarily consist of low-density residential neighborhoods. Permitted land uses are configured to reinforce the neighborhood identity and sense of community. See "THE SIERRA VISTA SPECIFIC PLAN" above.

Subdivision Maps. The current configuration of parcels in the District, together with final map status, is set forth in the following table.

Table 3
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Tentative Map and Final Map Status for Taxable Residential Parcels in the District

Large-Lot Parcel	Village	Land Use	Planned Units	Tentative Map Approval Date	Small Lot Final Map Record Date
<i>Phase 1</i>					
JM-2A	Monument	LDR (Residential)	92	12/12/2013	12/27/2018
JM-3A	Pinnacle	LDR (Residential)	83	12/12/2013	12/27/2018
JM-4A/4B	Sentinel	LDR (Residential)	132	12/12/2013	8/23/2019
JM-20A	Palisade	MDR (Residential)	88	12/12/2013	12/27/2018
		Sub-Total	395		
<i>Phase 2/3</i>					
JM-2B	Monument	LDR (Residential)	95	1/9/2019	4/__/2020
JM-3B	Pinnacle	LDR (Residential)	44	1/9/2019	4/__/2020
JM-20B	Palisade	MDR (Residential)	75	1/9/2019	4/__/2020
JM-20 Phase 3.1A	Palisade	MDR (Residential)	69	1/9/2019	4/__/2020
		Sub-Total	283		
		Total	678		

Source: JMC Homes.

In-Tract Improvements. In addition to the Improvements described below, subdivision in-tract improvements have been underway at the project since 2018. With respect to the 395 units planned for phase 1, in-tract improvements for all phase 1 are now complete. With respect to the 283 units planned for phase 2, in-tract improvements for phase 2 began in May 2020 and are expected to be complete in [month, year].

Backbone Infrastructure. With respect to the 395 units planned for phase 1, JMC Homes completed all basic (sometimes referred to as "backbone") infrastructure required for development

of the initial 395 homes in the District (including major roads and offsite improvements), and was accepted by the City on May 17, 2019.

With respect to the 283 units planned for phase 2, JMC Homes is utilizing much of the same backbone improvements that serve the 395 units in phase 1. Additional backbone infrastructure to be built as part of phase 2 consists of a portion of Vista Grande Boulevard, which will be completed in 2020.

Upon completion of various components of such infrastructure, JMC Homes is eligible to be reimbursed for the cost thereof from proceeds of the Bonds as provided in an acquisition agreement entered into with the City, provided such proceeds are available.

JMC Homes is responsible for the cost of construction of the infrastructure improvements and other costs required for the initial District boundary and the Future Annexation Area. Proceeds of the Bonds and any additional bonds will provide a portion of the cost of improvements and the remainder will be contributed by JMC Homes. See “THE IMPROVEMENTS – Estimated Cost of the Improvements”. Bonds for the District are expected to be issued on a parity with the 2020 Bonds and 2019 Bonds in multiple series as development progresses and annexation of land into the District occurs. The pace of home construction in the District will be determined by JMC Homes, largely by market conditions and demand for homes.

Utilities. All typical urban utility services for finished lots are available at the lots or will be extended to the lots within the District. These utilities include electric power, natural gas, telephone, cable television, water, refuse, and sanitary sewer and storm water facilities. The City provides electric, water, sewer refuse and storm water facilities, and police and fire services. Pacific Gas & Electric provides natural gas.

Model Homes and Production Homes. As of April 21, 2020 (the date of value of the Appraisal), JMC Homes had 15 model homes built and open to the public. The model homes are located in JM-2A, JM-3A, JM-4 and JM-20A, within phase 1 of the development, but available to serve phase 1 and phase 2 production. Sales are currently underway within phase 1 of the development, and as of May 31, 2020, 103 homes have sold to individual homeowners and 122 in escrow, 50 of which are expected to close by August 1, 2020. JMC Homes estimates that the last of the 395 homes planned for phase 1 of the development will be completed and sold to individual homeowners by January 2024, while the last of the 283 homes planned for phase 2 of the development will be completed and sold to individual homeowners by October 2023.

However, no assurance can be given that such timing will be accomplished, particularly in light of the current impact of COVID-19 on home production and home sales activities or the willingness of owners of land in the District, including JMC Homes, to pay the Special Taxes securing the 2020 Bonds. See “SPECIAL RISK FACTORS – COVID-19.”

Planned Home Sale Plans and Sizes. The following table sets forth JMC Homes’ current expectations with respect to floorplans, sizes and asking base prices for the 678 homes planned for the land currently in the District (phase 1 and phase 2). Base sales prices are subject to change and exclude options, upgrades, lot premiums and any incentives or price reductions being offered. There can be no assurance that sales prices of the remaining homes in the future annexation areas will equal or exceed the sales prices for the homes in the current District boundary.

Table 4

City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Planned Home Sale Plans, Sizes and Asking Base Prices

INITIAL BOUNDARY (395 LOTS) – Phase 1

Village	No. of Lots	Completed Models ⁽¹⁾	Project Floorplans	Floorplan Size Range (sf)		Asking Base Prices ⁽²⁾
				Low	High	
Palisade	88	4	8	1,343	2,341	\$399,990 – \$519,990
Monument	92	4	4	1,645	2,508	\$454,990 – \$529,990
Sentinel	132	3	3	1,754	2,178	\$479,990 – \$539,990
Pinnacle (Gated)	83	4	5	2,201	3,004	\$549,990 – \$672,990

(1) All models are located in Phase 1 of the project; no new models are being constructed for Phase 2.

(2) Base sales prices are subject to change and exclude options, upgrades, lot premiums and any incentives or price reductions being offered. There can be no assurance that sales prices of the remaining homes in the future annexation areas will equal or exceed the sales prices for the homes in the current District boundary.

Source: JMC Homes.

ANNEXATION AREA #1 (283 LOTS) – Phase 2

Village	No. of Lots	Completed Models ⁽¹⁾	Project Floorplans	Floorplan Size Range (sf)		Asking Base Prices ⁽²⁾
				Low	High	
Palisade	144	4	8	1,343	2,341	\$399,990 – \$519,990
Monument	95	4	4	1,645	2,508	\$454,990 – \$529,990
Pinnacle (Gated)	44	4	5	2,201	3,004	\$549,990 – \$672,990

(1) All models are located in Phase 1 of the project; no new models are being constructed for Phase 2.

(2) Base sales prices are subject to change and exclude options, upgrades, lot premiums and any incentives or price reductions being offered. There can be no assurance that sales prices of the remaining homes in the future annexation areas will equal or exceed the sales prices for the homes in the current District boundary.

Source: JMC Homes.

Table 4B
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Planned Units, Units Under Constructions and Units Sold by Village (Phases 1 and 2)
As of May 31, 2020⁽¹⁾

Village	Total No. Planned Units	Units Completed and Closed	Units Completed and Unsold ⁽²⁾	Units Under Construction and in Escrow ⁽³⁾	Units Under Construction and Unsold	Finished Lots not Under Construction	Small Lot Final Map Parcels	Tentative Mapped Parcels
Palisade	232	27	4	33	19	5	75	69
Monument	187	44	4	33	4	7	95	0
Sentinel	132	0	3	29	6	94	0	0
Pinnacle (Gated)	127	32	4	27	6	14	44	0
Totals	678	103	15	122	35	120	214	69

(1) During the period March 15, 2020 – June 1, 2020, with shelter-in-place orders in place, there were 83 sale contracts entered into and 15 cancellations for a total of 68 net sale contracts.

(2) All of the units completed and unsold consist of the 15 model homes.

(3) All units under construction and in escrow are anticipated to close in calendar year 2020, with approximately 50 homes expected to close by August 1, 2020.

Source: JMC Homes.

Between June 1, 2020 and _____, 2020, JMC Homes closed escrow on _____ homes to individual purchasers. During that time, there were _____ sale contracts entered into and _____ cancellations for a total of _____ net sale contracts.

THE IMPROVEMENTS

Eligible Facilities

The Bonds will provide a funding source to JMC Homes for moneys expended for a portion of the cost of the Improvements and for certain JMC Homes fees paid or to be paid by JMC Homes. The eligible Improvements authorized to be funded with proceeds of the Bonds include, but are not limited to, the following:

Transportation Improvements. Public roadway improvements designed to meet the needs of the project, including those improvements identified in the Development Agreement, including but not limited to:

- Federico Drive.
- Fiddymment Road.
- Market Street.
- Santucci Boulevard.
- Summerfaire Drive.
- Silver Spruce Drive.
- Sierra Glen Drive.
- Vista Park Drive.
- Vista Grande Boulevard.
- Westbrook Boulevard.

Eligible roadway improvements include the following items: acquisition of land and easements; roadway design; project management; geotechnical engineering, testing and observations, bridge crossings and culverts; clearing, grubbing, and demolition; grading, soil import/export, paving (including slurry seal), and decorative/enhanced pavement concrete or pavers; power pole relocations; joint trenches, underground utilities, and undergrounding of existing utilities; dry utilities and appurtenances; curbs, gutters, sidewalks, bike trails (including on- and off-site), park and ride facilities, bus rapid transit improvements, including transfer stations and regional public transit improvements; retaining walls, sound walls, enhanced fencing, and access ramps; street lights, signalization, and traffic signal control systems; bus turnouts; signs and striping; erosion control; median and parkway landscaping and irrigation; entry monumentation; bus shelters; masonry walls; traffic control and agency fees; and other improvements related thereto. Eligible improvements for the roads listed above also include any and all necessary underground potable and non-potable water, sanitary sewer, and storm drainage system improvements.

Potable and Non-Potable Water System Improvements. Authorized facilities include any and all on- and off-site backbone water facilities designed to meet the needs of development of the project. These facilities include potable and non-potable mains, valves, services, and appurtenances; wells; and water treatment and storage facilities, and related improvements, including but not limited to: site clearing, grading, and paving; curbs and gutters; recycled water storage tanks, booster pump stations, and all appurtenances thereto; wells; water treatment; stand-by generator; site lighting, drainage, sanitary sewer, and water service; landscaping and irrigation; access gates and fencing; striping and signage; among others.

Drainage System Improvements. Authorized facilities include any and all on- and off-site backbone drainage and storm drainage improvements designed to meet the needs of development of the project. These facilities include mains, pipelines and appurtenances, outfalls and water quality

measures, temporary drainage facilities, detention/retention basins, and drainage pretreatment facilities; drainage ways/channels, pump stations, landscaping, and irrigation; access roads, gates, and fencing; striping and signage, among others.

Wastewater System Improvements. Authorized facilities include any and all on- and off-site backbone wastewater facilities designed to meet the needs of development of the project. These facilities include pipelines and all appurtenances thereto; manholes; tie-in to existing main line; force mains; lift stations; odor-control facilities; sewer treatment plant improvements and permitting related thereto; and related sewer system improvements, among others.

Solid Waste Improvements. Authorized facilities include any and all backbone solid waste improvements designed to meet the needs of development of the project. Eligible improvements also include the project's pro-rata contribution, as described in the project DA, to the SVSP Solid Waste Recycling Center.

Park, Landscape Corridor and Paseo Improvements. Authorized facilities include any and all improvements to parks, landscape corridors and paseos located in the project, including but not limited to construction of Park Sites as identified by the Specific Plan, and construction of Paseos as identified by the SVSP.

Open Space Improvements. Authorized facilities include any and all open space improvements designed to meet the needs of development of the project, including bike trails, bike/pedestrian bridges, storm drain crossings, storm drain detention/retention, wetland mitigation, tree mitigation, on- and off-site hawk/raptor mitigation, agricultural mitigation or wetland mitigation, property acquisition, endowment payments for open space management, landscaping and irrigation, access gates and fencing, and related open space improvements, among others.

Utilities. Authorized facilities include any and all on- and off-site utility improvements designed to meet the needs of development of the project. All utility improvements, easement payments, and land acquisition not located under or alongside transportation improvements are considered authorized facilities. Authorized facilities also shall include costs related to the acquisition of the off-site electric substation site; site clearing; grading; street frontage improvements, including curbs, gutters, and paving; and construction of an all-weather access road to the site from the nearest public street or extension of temporary 12kV overhead lines as described in the project DA, among others.

Other Public Facilities and Impact Fees. Authorized facilities includes any and all public facilities or infrastructure, including the project's pro-rata contribution to the land acquisition of the off-site fire station site, site clearing, grading, and street frontage improvements including curbs, gutters, and paving, including fire station site reimbursement obligations in the Development Agreement. Authorized facilities also include development impact fees paid and not otherwise reimbursed, whether standard City or County fees levied at the time of the issuance of a building permit or required as part of the DA for the property. Fees include, but are not limited to, the South Placer Regional Transportation Authority Tier II Traffic Fee, City of Roseville City Wide Park Fee, City of Roseville Public Facilities Fee, and Public Benefit Fee.

Estimated Cost of the Improvements

General. The total estimated cost of the Improvements for the land currently within the District (678 units) is approximately \$79.8 million, as shown in the table below. The 2019 Bonds provided \$12.4 million of proceeds for the Improvements, while the 2020 Bonds are expected to provide an additional approximately \$___ million*. Additional infrastructure will be required for areas of future annexation and Additional Bonds are expected to be sold in the future.

Table 5
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Summary of Partial Authorized Facilities and Estimated Cost in Current District Boundary

Item	Estimated Total Cost ⁽¹⁾
Transportation Improvements	\$9,643,222
Potable and Non-Potable Water System Improvements	2,425,164
Drainage System Improvements	3,810,002
Wastewater System Improvements	3,671,763
Parks, Landscape Corridor and Paseo Improvements	3,727,127
Open Space Improvements	5,802,951
Utilities	3,092,339
Other Public Facilities and Impact Fees	47,642,423
Total	\$79,814,990

(1) Includes soft cost and contingency.

Source: JMC Homes.

Funding Sources. In connection with the issuance of the 2019 Bonds, the City and JMC Homes have entered into a Funding, Construction and Acquisition Agreement (the “**Acquisition Agreement**”) which provides that JMC Homes will construct (or cause to be constructed or funded) the Improvements and related facilities, and the City, upon completion of construction and acceptance by the City, or through progress payments prior to completion of the entire improvement, will purchase the Improvements or reimburse JMC Homes for expended amounts using a portion of the proceeds of the Bonds pursuant to the terms of the Acquisition Agreement. JMC Homes will be responsible for the portion of the cost of construction of the Improvements not paid with Bonds.

* Preliminary; subject to change.

The following table shows estimated sources and uses for JMC Homes related to the development and sale of the 678 homes planned for phase 1 and phase 2 in the District.

Table 6
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Proposed Financing Plan – Phase 1 and Phase 2 (678 Lots)
Calendar Years 2020 through 2024

	Total	As of June 1, 2020	Remainder of 2020	2021	2022	2023	2024
Sources:							
Equity	\$18,849,770	\$18,849,770	--	--	--	--	--
Bond Proceeds ⁽¹⁾	20,517,000	12,442,000	\$8,075,000	--	--	--	--
Sales of Homes	338,798,230	52,998,230	64,680,000	\$62,280,000	\$95,920,000	\$47,350,000	\$11,570,000
Total Sources	\$378,165,000	\$84,290,000	\$72,755,000	\$62,280,000	\$95,920,000	\$47,350,000	\$11,570,000
Uses:							
Authorized Facilities ⁽²⁾	\$32,352,000	\$31,260,000	\$1,092,000	--	--	--	--
In-tract Infrastructure	41,700,000	22,550,000	19,150,000	--	--	--	--
Costs of Sales of Homes	189,050,000	30,480,000	36,000,000	\$36,090,000	\$53,310,000	\$26,750,000	\$6,420,000
Total Uses	\$263,102,000	\$84,290,000	\$56,242,000	\$36,090,000	\$53,310,000	\$26,750,000	\$6,420,000
Net Cash Flow	\$115,063,000	--	\$16,513,000	\$30,190,000	\$42,610,000	\$20,600,000	\$5,150,000

(1) Preliminary; subject to change.

(2) Excludes "Other Public Facilities and Impact Fees" included in Cost of Sales of Homes.

Source: JMC Homes.

VALUE OF PROPERTY WITHIN THE DISTRICT

Historical Assessed Valuation

The following table shows a history of assessed valuations of land in the District since Fiscal Year 2019-20

Table 7
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Historical Assessed Values for the District
Fiscal Years 2019-20 and 2020-21

Fiscal Year	Assessed Land Value	Assessed Structure Value	Total Assessed Value	% Change in Total Assessed Value
2019-20	\$6,582,845	--	\$6,582,845	N/A
2020-21		available approx July 13		available approx July 13

Source: Assessed Values - Respective Placer County Secured Property Rolls as compiled by Willdan Financial Services.

The Appraisal

General. Integra Realty Resources, Sacramento, California (the “**Appraiser**”) prepared an appraisal report with a date of value of April 21, 2020 (the “**Appraisal**”). The Appraisal was prepared at the request of the City in order to obtain an additional indication of value of land in the District. The Appraisal is set forth in APPENDIX B hereto. The description herein of the Appraisal is intended for limited purposes only; the Appraisal should be read in its entirety. The conclusions reached in the Appraisal are subject to certain assumptions and qualifications which are set forth in the Appraisal.

Property Appraised. The appraised properties consist of all of the taxable property currently in the District, which is owned by JMC Homes and individual homeowners, and planned for development into 678 single-family residential units. For completed homes that did not have an structural assessed value on the property tax roll, the Appraiser provided a not-less-than value per completed home, based on the smallest floor plan within the applicable subdivision.

Value Estimates. The Appraisal provides a market value, in bulk, of 547 lots that are part of appraised property owned by JMC Homes, a not-less-than value for completed homes owned by individual homeowners and an appraised value for finished homes owned by JMC Homes as of the date of value (based on the hypothetical condition the improvements to be financed by the 2020 Bonds and 2019 Bonds were in place as of the date of valuation). The valuation accounts for the impact of the lien of the Special Tax and represents the hypothetical market value (based on the hypothetical condition) of all the land in the District. The property appraised excludes property in the District designated for public and quasi-public purposes.

The aggregate value estimate for the appraised properties as of the April 21, 2020 date of value, using the methodologies described in the Appraisal and subject to the limiting conditions and special assumptions set forth in the Appraisal, and based on the ownership of the property as of that date, is not less than \$124,108,750.

This aggregate appraised value is further described as follows:

<u>Owner/Subdivision</u>	<u>Value per Parcel</u>	<u>No. of Parcels</u>	<u>Aggregate Value</u>
<u>Individual Homeowners – Completed Homes⁽¹⁾</u>			
Monument	\$495,000	37	\$18,315,000
Palisade	435,000	26	11,310,000
Pinnacle	560,000	<u>51</u>	<u>28,560,000</u>
Sub-Total		114	\$58,185,000
<u>JMC Homes – Finished Homes w/o AVs</u>			
Monument	\$470,250	4	\$1,881,000
Palisade	413,250	4	1,653,000
Pinnacle	532,000	6	3,192,000
Sentinel	489,250	<u>3</u>	<u>1,467,750</u>
Sub-Total		17	\$8,193,750
<u>JMC Homes – Market Value in Bulk (547 Lots)</u>			\$57,730,000
Aggregate Value of Appraised Properties			\$124,108,750

(1) Represents not-less-than value, based on the smallest floor plan within each applicable subdivision.

Hypothetical Condition. *The value estimate is subject to a hypothetical condition, defined as that which is contrary to what exists but is supposed for the purposes of analysis. For purposes of the hypothetical condition, the Appraiser assumed that certain proceeds of the 2020 Bonds are available to reimburse for infrastructure improvements completed.*

Assumptions and Limiting Conditions. In considering the estimate of value evidenced by the Appraisal, the Appraisal is based upon a number of standard and special assumptions which affect the estimates as to value, some of which include the following. See “APPENDIX B – THE APPRAISAL.”

- The value estimates assume certain proceeds from the 2020 Bonds and 2019 Bonds (but not any Additional Bonds that may be issued in the future) are available to reimburse for certain completed infrastructure improvements and accounts for the impact of the lien of the Special Tax and adds the estimated bond amount to the value of property. See “THE IMPROVEMENTS.”

- The Appraiser has assumed that there is no hazardous material on or in the property that would cause a loss in value. Should future conditions and events reduce the level of permitted development or delay the completion of any projected development, the value of the undeveloped land would likely be reduced from that estimated by the Appraiser. See “APPENDIX B – THE APPRAISAL” hereto for a description of certain assumptions made by the Appraiser. Accordingly, because the Appraiser arrived at an estimate of current market value based upon certain assumptions which may or may not be fulfilled, no assurance can be given that should the parcels become delinquent due to unpaid Special Taxes, and be foreclosed upon and offered for sale for the amount of the delinquency, that any bid would be received for such property or, if a bid is received, that such bid would be sufficient to pay such delinquent Special Taxes.

Exposure Time. Exposure time is the length of time the subject property would have been exposed for sale in the market had it sold on the effective valuation date at the concluded market value. Exposure time is always presumed to precede the effective date of the Appraisal. Based on the Appraiser’s review of recent sales transactions for similar properties and its analysis of supply and demand in the local land market, the Appraiser’s opinion was that the probable exposure time for the appraised property at the concluded market value stated previously is 12 months.

Marketing Time. Marketing time is an estimate of the amount of time it might take to sell a property at the concluded market value immediately following the effective date of value. As the Appraiser foresees no significant changes in market conditions in the near term, the Appraiser's opinion was that a reasonable marketing period for the appraised property in bulk is likely to be the same as the exposure time. Accordingly, the Appraiser estimated the marketing period at 12 months.

No assurance can be given that a sale of the property in bulk by JMC Homes could be achieved or attained over an extended period of time; real estate is cyclical in nature, and it is impossible to accurately forecast and project specific demand over a particular period. See "SPECIAL RISK FACTORS – Property Values and Property Development."

Limitations of Appraisal Valuation. Property values may not be evenly distributed throughout the District; thus, certain parcels may have a greater value than others. This disparity is significant because in the event of nonpayment of the Special Tax, the only remedy is to foreclose against the delinquent parcel.

No assurance can be given that the foregoing valuation can or will be maintained during the period of time that the 2020 Bonds are outstanding in that the City has no control over the market value of the property within the District or the amount of additional indebtedness that may be issued in the future by other public agencies, the payment of which, through the levy of a tax or an assessment, may be on a parity with the Special Taxes. See "–Overlapping Liens and Priority of Lien" below.

For a description of certain risks that might affect the assumptions made in the Appraisal, see "SPECIAL RISK FACTORS" herein.

Value to Special Tax Burden Ratios

In comparing the value of the real property within the District and the principal amount of the Bonds, it should be noted that only the real property upon which there is a delinquent Special Tax can be foreclosed upon, and the real property within the District cannot be foreclosed upon as a whole to pay delinquent Special Taxes of the owners of such parcels within the District unless all of the property is subject to a delinquent Special Tax. In any event, individual parcels may be foreclosed upon separately to pay delinquent Special Taxes levied against such parcels.

Other public agencies whose boundaries overlap those of the District could, without the consent of the City and in certain cases without the consent of the owners of the land within the District, impose additional taxes or assessment liens on the land within the District. Property owners can also voluntarily add Property Assessed Clean Energy (PACE) assessment liens on their property to finance energy efficiency improvements. The lien created on the land within the District through the levy of such additional taxes or assessments may be on a parity with the lien of the Special Tax. In addition, construction loans may be obtained by JMC Homes or home loans may be obtained by ultimate homeowners. The deeds of trust securing such debt on property within the District, however, will be subordinate to the lien of the Special Tax.

Appraised Value to Lien Ratios by Development Status and Land Use. The following table sets forth appraised value, maximum special tax, allocable District debt, and average value to lien ratios by status of development, based on the status of development in the District as of April 21, 2020 (the Appraiser's date of value), and on assumptions detailed therein.

Table 8
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Value to Lien Ratios – By Development Status and Land Use

Development Status^{(1)(2)/} Land Use⁽³⁾	Planned Units⁽⁴⁾	Appraised Value⁽⁵⁾	FY 2020-21 Maximum Facilities Tax	Projected FY 2020-21 Facilities Special Tax Levy^{(6)*}	Allocable Debt CFD Bonds^{(7)*}	% Total CFD Bonded Debt^{(7) *}	Overlapping Debt⁽⁸⁾	Total Direct & Overlapping Debt*	Average Value to Lien Ratios*
<u>Homes Completed & Sold⁽¹⁾⁽⁹⁾</u>									
LDR	88	\$46,875,000	\$164,799	\$164,799	\$2,872,518	13.49%	\$24,543	\$2,897,061	16.18
MDR	26	11,310,000	43,281	43,281	754,398	3.54%	6,669	761,067	14.86
Subtotal	114	\$58,185,000	\$208,080	\$208,080	\$3,626,916	17.03%	\$31,212	\$3,658,128	15.91
<u>Homes Completed⁽¹⁾</u>									
LDR	13	\$6,540,750	\$24,345	\$24,345	\$424,350	1.99%	\$3,389	\$427,739	15.29
MDR	4	1,653,000	6,659	6,659	116,061	0.55%	975	117,036	14.12
Subtotal	17	\$8,193,750	\$31,004	\$31,004	\$540,411	2.54%	\$4,364	\$544,775	15.04
<u>Homes Partially Completed⁽¹⁾⁽¹⁰⁾</u>									
LDR	86	\$11,742,881	\$161,054	\$161,054	\$2,807,234	13.19%	\$24,645	\$2,831,879	4.15
MDR	33	4,505,989	54,933	54,933	957,506	4.50%	9,143	966,649	4.66
Subtotal	119	\$16,248,871	\$215,987	\$215,987	\$3,764,740	17.69%	\$33,788	\$3,798,528	4.28
<u>Final Map Lots⁽²⁾</u>									
LDR	120	\$12,178,681	\$224,726	\$224,726	\$3,917,070	18.40%	\$29,004	\$3,946,074	3.09
MDR	25	2,537,225	41,616	41,616	725,384	3.41%	5,941	731,325	3.47
Subtotal	145	\$14,715,907	\$266,342	\$266,342	\$4,642,454	21.81%	\$34,945	\$4,677,399	3.15
<u>Tentative Map Lots (Annexation 1)⁽¹¹⁾⁽¹²⁾</u>									
LDR	139	\$13,646,668	\$260,308	\$220,519	\$4,537,272	21.31%	\$38,844	\$4,576,116	2.98
MDR	144	13,118,555	239,708	203,068	4,178,207	19.63%	32,642	4,210,849	3.12
Subtotal	283	\$26,765,223	\$500,016	\$423,587	\$8,715,479	40.94%	\$71,486	\$8,786,965	3.05
Total	678	\$124,108,750	\$1,221,430	\$1,145,000	\$21,290,000	100.00%	\$175,794	\$21,465,794	5.78

Footnotes Follow on Next Page

* Preliminary, subject to change.

- (1) Status of home construction as of April 21, 2020 per Appraiser.
- (2) Status of subdivision lot recordation as of May 1, 2020 per JMC Homes.
- (3) Land use per the District's Special Tax Formula.
- (4) Planned number of residential lots per the District's Special Tax Formula.
- (5) Appraised Values as of April 21, 2020, includes bulk values for each development status category under Homes Partially Completed, Final Map Lots and Tentative Map Lots.
- (6) The Projected FY 2020-21 Special Tax Levy consists of the parcels within the original CFD boundary to be taxed at 100% of the Maximum Facilities Special Tax while the 283 entitled units within Annexation No. 1 expected to be taxed at a Special Tax rate of 85%* of the Maximum Facilities Special Tax.
- (7) Represents the outstanding balance of \$12,540,000 of the 2019 Bonds and the preliminary par amount of \$8,750,000* of the 2020 Bonds. This table allocates the CFD Debt upon each parcel's Maximum Facilities Special Tax..
- (8) The overlapping debt liens of the District parcels as of May 1, 2020 as summarized under "Direct and Overlapping Tax and Assessment Debt" table in the overlapping debt report prepared by California Municipal Statistics, Inc. No direct charges related to PACE liens secured by Special Taxes were levied onto the District parcels in FY 2019-20; the existence of any PACE Liens would not be reflected in the overlapping debt report.
- (9) Represents homes sold to individual homeowners as of April 21, 2020 per Appraiser.
- (10) A partially completed home represents a single-family lot upon which a building permit has been issued together with substantial construction towards the completion of the structure's footings or more.
- (11) Represents all property within the District's Annexation No. 1.
- (12) All of the Annexation No. 1 territory was approved tentative map property at the time of the appraisal but all 139 of the LDR lots and 79 of the 144 MDR lots within the Annexation No.1 were converted to final lots upon the recordation of the subdivision maps on May 4, 2020.

Sources: Development Status and Appraised Values - Integra Realty Resources, Inc.; May 4, 2020 Final Lots and Subdivision Status - JMC Homes; Overlapping Debt - California Municipal Statistics, Inc, as compiled by Willdan Financial Services and Maximum Facilities Special Tax - Willdan Financial Services.

Appraised Value to Lien Ratio Categories. The appraised value of all taxable property within the District is \$124,108,750. The principal amount of direct and overlapping bonded debt in the District (including the 2020 Bonds and 2019 Bonds) is \$21,465,794*. Consequently, the estimated value of the taxable property within the District is approximately 5.78* times the principal amount of the direct and overlapping bonded debt. The following table sets forth the appraised value, maximum special tax, projected special tax levy tax and allocable District debt by value to lien ratio range categories.

Table 9
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Average Value to Lien Ratio Categories

Value-to-Lien Ratio Range *	No. of Parcels	No. of Units⁽¹⁾	Appraised Value⁽²⁾	FY 2020-21 Maximum Facilities Tax	Allocable CFD Bonds^{(3)(4)*}	% Total CFD Bonds⁽⁴⁾	Overlapping Debt⁽⁵⁾	Total Direct & Overlapping Debt*	Average Value to Lien Ratios*
15:1 to 19.99:1	93	93	\$49,572,000	\$174,164	\$3,035,729	14.26%	\$25,734	\$3,061,463	16.19
10:1 to 14.99:1	38	38	16,806,750	64,921	1,131,598	5.32%	9,841	1,141,439	14.72
4:1 to 4.99:1	119	119	16,248,870	215,986	3,764,739	17.68%	33,788	3,798,527	4.28
3:1 to 3.99:1	147	289	27,834,462	506,051	8,820,661	41.43%	67,587	8,888,248	3.13
2:1 to 2.99:1	2	139	13,646,668	260,308	4,537,273	21.31%	38,844	4,576,117	2.98
Total	399	678	\$124,108,750	\$1,221,430	\$21,290,000	100.00%	\$175,794	\$21,465,794	5.78

* Preliminary, subject to change.

(1) Planned number of residential lots per the Special Tax Formula.

(2) Appraised Values as of April 21, 2020.

(3) Represents the outstanding balance of \$12,540,000 of 2019 Bonds and the preliminary par amount of \$8,750,000* of 2020 Bonds.

(4) The CFD Bonded Debt has been allocated based upon each parcel's Maximum Facilities Special Tax.

(5) The overlapping debt liens of the District parcels as of May 1, 2020 as summarized under "Direct and Overlapping Tax and Assessment Debt" table in the overlapping debt report prepared by California Municipal Statistics, Inc.

Sources: Appraised Value - Integra Realty Resources, Inc.; Overlapping Debt - California Municipal Statistics, Inc, as compiled by Willdan Financial Services and Maximum Special Facilities Tax - Willdan Financial Services.

Special Tax Collections and Delinquencies

Fiscal Year 2019-20 was the first year in which the Special Tax was levied in the District. The following table shows the collections of the Special Tax and delinquency information for Fiscal Year 2019-20.

Table 10
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Historical Collections and Delinquencies
Fiscal Year 2019-20

Fiscal Year / Installment	Special Taxes Levied per Installment	No. of Parcels Levied	Amount Collected	Amount Delinquent⁽¹⁾	No. of Parcels Delinquent	Percent Levy Delinquent
2019-20 / Installment 1	\$343,261	265	\$343,261	\$0	0	0.00%
2019-20 / Installment 2	\$343,261	265	\$342,343	\$918	1	0.27%

(1) Delinquent amounts and collections shown above do not include penalties, interest or fees.

Source: Placer County Tax Collector as of May 4, 2020, compiled by Willdan Financial Services

Overlapping Liens and Priority of Lien

The principal of and interest on the Bonds are payable from the Special Tax authorized to be collected within the District, and payment of the Special Tax is secured by a lien on certain real property within the District. Such lien is co-equal to and independent of the lien for general taxes and any other liens imposed under the Act, regardless of when they are imposed on the property in the District. The imposition of additional special taxes, assessments and general property taxes will increase the amount of independent and co-equal liens which must be satisfied in foreclosure. The City, the County and certain other public agencies are authorized by the Act to form other community facilities districts and improvement areas and, under other provisions of State law, to form special assessment districts, either or both of which could include all or a portion of the land within the District.

Set forth below is an overlapping debt table showing the existing direct and overlapping bonded debt payable with respect to property within the District. This table has been prepared by California Municipal Statistics Inc. as of the date indicated, and is included for general information purposes only. The City has not reviewed the data for completeness or accuracy and makes no representations in connection therewith. In addition to bonded debt, property in the District is also subject to special taxes authorized to be levied on behalf of the City's Sierra Vista Community Facilities District No. 2 (Public Services) and Community Facilities District No. 3 (Municipal Services) for municipal services, which districts provide for escalating annual special taxes on residential property. The Fiscal Year 2020-21 annual amount is \$352.63 per lot (low density and medium density) for CFD No. 2 and the Fiscal Year 2019-20 amounts are \$456.66 per lot (low density)/\$267.05 per lot (medium density) for CFD No. 3; the CFD No. 3 tax rates are subject to annual escalation up to 4% depending on the City's public safety budget each year.

Table 11
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Summary of Overlapping Debt
As of May 1, 2020

2019-20 Local Secured Assessed Valuation: \$11,094,213

<u>DIRECT AND OVERLAPPING TAX AND ASSESSMENT DEBT:</u>	<u>% Applicable</u>	<u>Debt 5/1/20</u>	
Sierra Jt. Comm. College District SFID No. 4 General Obligation Bonds	0.016%	\$ 12,658	
Center Jt. Unified School District General Obligation Bonds	0.475	163,137	
City of Roseville Villages at Sierra Vista CFD No. 1	100.000	<u>12,540,000</u>	(1)
TOTAL DIRECT AND OVERLAPPING TAX AND ASSESSMENT DEBT		\$12,715,795	
 <u>OVERLAPPING GENERAL FUND DEBT:</u>			
Placer County Certificates of Participation	0.014%	\$ 3,093	
Placer County Office of Education Certificates of Participation	0.014	96	
Sierra Joint Community College District Certificates of Participation	0.010	278	
City of Roseville Certificates of Participation	0.046	9,639	
Placer County Mosquito and Vector Control District Certificates of Participation	0.014	<u>367</u>	
TOTAL OVERLAPPING GENERAL FUND DEBT		\$13,473	
 COMBINED TOTAL DEBT		 \$12,729,268	 (2)

Ratios to 2019-20 Assessed Valuation:

Direct Debt (\$12,540,000)	113.03%
Total Direct and Overlapping Tax and Assess. Debt ...	114.62%
Combined Total Debt	114.74%

(1) Excludes the 2020 Bonds to be sold.

(2) Excludes tax and revenue anticipation notes, enterprise revenue, mortgage revenue and non-bonded capital lease obligations.

Source: California Municipal Statistics, Inc.

There can be no assurance that JMC Homes, its affiliates or any subsequent owner will not petition for the formation of other community facilities districts and improvement areas or for a special assessment district or districts and that parity special taxes or special assessments will not be levied by the County or some other public agency to finance additional public facilities; however, no other special districts are currently contemplated by the City or JMC Homes.

Private liens, such as deeds of trust securing loans obtained by JMC Homes, may be placed upon property in the District at any time. Under California law, the Special Taxes have priority over all existing and future private liens imposed on property subject to the lien of the Special Taxes.

Estimated Tax Burden on Single-Family Home

Based on current and estimated sales prices for the smallest floorplan for MDR and LDR homes provided by JMC Homes being planned for the first 678 homes in the District (phase 1 and phase 2 of the development), the Special Tax Administrator has projected that the overall tax burden for the smallest floorplan homes planned for the District will be approximately 1.75% and 1.72%, respectively, as shown in the following table. The projected overall tax burden for larger floorplan homes is expected to be smaller, as a percentage of the projected assessed value of the homes.

Table 12
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Projected Overall Tax Burden for Single-Family Residential Parcels
Fiscal Year 2020-21

		Land Use Designations	
Net Taxable Value		MDR Value	LDR Value
Projected Assessed Value - Representative Homes ⁽¹⁾		\$435,000	\$555,000
<u>Less: Homeowner's Exemption</u>		<u>(\$7,000)</u>	<u>(\$7,000)</u>
Net Taxable Value		\$428,000	\$548,000
Ad Valorem Property Taxes ⁽²⁾	Rate ⁽²⁾	Taxes	Taxes
Base Property Tax	1.000000%	\$4,280	\$5,480
<u>Center USD and Sierra CCD GO Taxes</u>	<u>0.245391%</u>	<u>1,050</u>	<u>1,345</u>
Total Ad Valorem Property Taxes	1.245391%	\$5,330	\$6,825
Parcel Charges, Special Taxes and Assessments ⁽³⁾		Charges	Charges
Placer Mosquito & Vector ⁽⁴⁾		\$5.56	\$5.56
City of Roseville, Villages of Sierra Vista CFD #1 (Public Facilities) ⁽⁵⁾		1,664.64	1,872.72
City of Roseville, Sierra Vista CFD #2 (Public Services) ⁽⁶⁾		352.63	352.63
<u>City of Roseville CFD #3 (Municipal Services) ⁽⁷⁾</u>		<u>277.73</u>	<u>474.93</u>
Total Parcel Charges, Assessments, and Special Taxes		2,300.57	2,705.84
Total Projected Taxes and Direct Charges		\$7,631	\$9,531
Total Effective Projected Tax Rate		1.75%	1.72%

(1) Values of Representative MDR and LDR Homes from the Ability to Pay section of the Appraisal.

(2) 2019/20 Ad Valorem Property Taxes Rates for TRA 005-070 per Placer County Resolution 2019-170.

(3) Assumes no optional PACE related Special Taxes.

(4) Equal to the rate per home applied on the FY 2019-20 tax bill.

(5) Equal to the applicable Maximum Public Facilities Special Tax for FY 2020-21.

(6) Equal to the applicable Maximum Public Services Special Tax for FY 2020-21.

(7) Projected applicable Maximum Municipal Services Special Tax for FY 2020-21.

Sources: FY 2019-20 Ad Valorem Tax Rates of TRA 005-070 - Placer County Auditor Controller; Placer Mosquito & Vector charges - Placer County Tax Collector; Projected Assessed Values of Representative Homes - Integra Realty Resources, Inc; Maximum Special Tax Rates, Roseville CFD Nos 1, 2 and 3 - Willdan Financial Services

SPECIAL RISK FACTORS

The purchase of the 2020 Bonds described in this Official Statement involves a degree of risk that may not be appropriate for some investors. The following includes a discussion of some of the risks that should be considered before making an investment decision.

Limited Obligation of the City to Pay Debt Service

The City has no obligation to pay principal of and interest on the 2020 Bonds in the event Special Tax collections are delinquent, other than from amounts, if any, on deposit in the Reserve Fund or funds derived from the tax sale or foreclosure and sale of parcels on which levies of the Special Tax are delinquent, nor is the City obligated to advance funds to pay such debt service on the 2020 Bonds. The 2020 Bonds are not general obligations of the City but are limited obligations of the City and the District payable solely from the proceeds of the Special Tax and certain funds held under the Fiscal Agent Agreement, including amounts deposited in the Reserve Fund and investment income thereon, and the proceeds, if any, from the sale of property in the event of a foreclosure. See “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS.” Any tax for the payment of the 2020 Bonds will be limited to the Special Tax to be collected within the jurisdiction of the District.

Concentration of Ownership

Land in the District is mostly owned by a single entity, JMC Homes. Owners of property are not personally obligated to pay the Special Tax attributable to their property. Rather, the Special Tax is an obligation only against the parcel of property, secured by the amount which could be realized in a foreclosure proceeding against the property, and not by any promise of the owner to pay. If the value of the property is not sufficient, taking into account other obligations also constituting a lien against the property, the City, Fiscal Agent and owners of the 2020 Bonds have no recourse against the owner, such as filing a lawsuit to collect money.

Failure of JMC Homes or any future owner of significant property subject to the Special Taxes in the District to pay installments of Special Taxes when due could cause the depletion of the Reserve Fund prior to reimbursement from the resale of foreclosed property or payment of the delinquent Special Tax and, consequently, result in the delinquency rate reaching a level that would cause an insufficiency in collection of the Special Tax to meet the District’s obligations on the 2020 Bonds. For a description of JMC Homes, see “OWNERSHIP OF PROPERTY WITHIN THE DISTRICT.” In that event, there could be a delay or failure in payments on the 2020 Bonds. See “– Bankruptcy and Foreclosure Delays” below and “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Delinquent Payments of Special Tax; Covenant for Superior Court Foreclosure.”

Appraised Values

The Appraisal summarized in APPENDIX B estimates the market value of the taxable property within the District. This market value is merely the present opinion of the Appraiser, and is subject to the assumptions and limiting conditions stated in the Appraisal. The City has not sought the present opinion of any other appraiser of the value of the taxed parcels. A different present opinion of value might be rendered by a different appraiser.

The opinion of value relates to sale by a willing seller to a willing buyer as of the date of valuation, each having similar information and neither being forced by other circumstances to sell or

to buy. Consequently, the opinion is of limited use in predicting the selling price at a foreclosure sale, because the sale is forced and the buyer may not have the benefit of full information.

In considering the estimates of value evidenced by the appraisal, it should be noted that the appraisal is based upon a number of standard and special assumptions which affect the estimates as to value, in addition to hypothetical conditions, as set forth in the Appraisal (see APPENDIX B hereto). The improvements to be financed by the 2020 Bonds were not in place as of the date of inspection; thus, the value estimate is subject to a hypothetical condition (of such improvements being in place)

In addition, the opinion is a present opinion. It is based upon present facts and circumstances. Differing facts and circumstances may lead to differing opinions of value. The appraised market value is not evidence of future value because future facts and circumstances may differ significantly from the present.

No assurance can be given that any of the appraised property in the District could be sold in a foreclosure for the estimated market value contained in the Appraisal. Such sale is the primary remedy available to Bondowners if that property should become delinquent in the payment of Special Taxes.

Property Values and Property Development

The value of Taxable Parcels within the District is a critical factor in determining the investment quality of the 2020 Bonds. If a property owner defaults in the payment of the Special Tax, the District's only remedy is to foreclose on the delinquent property in an attempt to obtain funds with which to pay the delinquent Special Tax. Land development and land values could be adversely affected by economic and other factors beyond the City's control, such as: a general economic downturn; adverse judgments in future litigation that could affect the scope, timing or viability of development; relocation of employers out of the area; stricter land use regulations; shortages of water, electricity, natural gas or other utilities; destruction of property caused by earthquake, flood or other natural disasters; environmental pollution or contamination.

The Appraisal information included as APPENDIX B sets forth certain assumptions of the Appraiser in estimating the market value of the property within the District as of the date indicated. No assurance can be given that the land values are accurate if these assumptions are incorrect or that the values will not decline in the future if one or more events, such as natural disasters or adverse economic conditions, occur. See "Appraised Values" above.

Neither the District, the Underwriter, nor the City has evaluated development risks. Since these are largely business risks of the type that property owners customarily evaluate individually, and inasmuch as changes in land ownership may well mean changes in the evaluation with respect to any particular parcel, the District is issuing the 2020 Bonds without regard to any such evaluation. Thus, the creation of the District and the issuance of the 2020 Bonds in no way implies that the District, the Underwriter, or the City has evaluated these risks or the reasonableness of these risks.

The following is a discussion of specific risk factors that could affect the timing or scope of property development in the District or the value of property in the District.

Land Development. Land values are influenced by the level of development in the area in many respects.

First, undeveloped or partially developed land is generally less valuable than developed land and provides less security to the owners of the 2020 Bonds should it be necessary for the District to foreclose on undeveloped or partially developed property due to the nonpayment of Special Taxes.

Second, failure to complete development on a timely basis could adversely affect the land values of those parcels that have been completed. Lower land values would result in less security for the payment of principal of and interest on the 2020 Bonds and lower proceeds from any foreclosure sale necessitated by delinquencies in the payment of the Special Tax. See "VALUE OF PROPERTY WITHIN THE DISTRICT – Value to Special Tax Burden Ratios." No assurance can be given that the proposed development within the District will be completed, and in assessing the investment quality of the 2020 Bonds, prospective purchasers should evaluate the risks of noncompletion.

JMC Homes provides no assurances to the City that the project will be developed or that sources of financing that will actually be available will be sufficient to complete the currently projected development. JMC Homes has no obligation to the City or to owners of the 2020 Bonds to complete the project.

Risks of Real Estate Investment Generally. Continuing development of land within the District may be adversely affected by changes in general or local economic conditions, fluctuations in the real estate market, increased construction costs, development, financing and marketing capabilities of individual property owners, water or electricity shortages, and other similar factors. Development in the District may also be affected by development in surrounding areas, which may compete with the District. In addition, land development operations are subject to comprehensive federal, state and local regulations, including environmental, land use, zoning and building requirements. There can be no assurance that proposed land development operations within the District will not be adversely affected by future government policies, including, but not limited to, governmental policies to restrict or control development, or future growth control initiatives. There can be no assurance that land development operations within the District will not be adversely affected by these risks.

Natural Disasters. The value of the parcels in the District in the future can be adversely affected by a variety of natural occurrences, particularly those that may affect infrastructure and other public improvements and private improvements on the parcels in the District and the continued habitability and enjoyment of such private improvements. For example, the areas in and surrounding the District, like those in much of California, may be subject to earthquakes or other unpredictable seismic activity, however, the District is not located in a seismic special studies zone.

Other natural disasters could include, without limitation, landslides, floods, droughts, wildfires or tornadoes. One or more natural disasters could occur and could result in damage to improvements of varying seriousness. Although the District is not in a high-risk area for landslides, floods, wildfires or tornadoes, natural disasters such as these are unpredictable and may occur anywhere throughout the State, with devastating consequences. The damage may entail significant repair or replacement costs and that repair or replacement may never occur either because of the cost, or because repair or replacement will not facilitate habitability or other use, or because other considerations preclude such repair or replacement. Under any of these circumstances there could be significant delinquencies in the payment of Special Taxes, and the value of the parcels may well depreciate.

Drought. California has been subject to droughts from time-to-time in the past. Although the City does not believe any future drought would impact development in the District, no assurances can be given in this regard.

The City employs a portfolio approach to its water supplies which includes the use of surface water, groundwater and recycled water. This portfolio approach is designed to provide a more reliable water supply. Surface water is the City's primary water supply which is delivered from the Folsom Reservoir under contracts with the Bureau of Reclamation and the Placer County Water Agency. The City also uses groundwater to supplement its surface water supplies during emergency and drought conditions. These ground water wells are designated to accommodate Aquifer Storage and Recovery (ASR). The City's ASR program allows for the storage of treated surface water in the groundwater basin through direct injection through the ASR wells. This water can be extracted later from the same wells for use during emergency or drought conditions. This water "banking" allows the City to use groundwater without significant impact to the ground water table when surface water supplies are limited. The City also uses recycled water generated from its wastewater treatment facilities for irrigation purposes in commercial landscaping, public rights-of way, parks and golf courses. The use of recycled water reduces the demand for treated water for these purposes and leaving more for domestic use. However, no assurance can be given that a future drought affecting homes in the District would not result in decreased values.

JMC Homes and the City indicate that the existing Development Agreement protects JMC Homes's ability to access water for the project through an agreed upon water allocation. Further, the City indicates it has adequate surface water and groundwater supplies to meet the allocation for all three phases of development in accordance with applicable law and regulations. However, in the event that the City's water supply is severely limited or cut off by virtue of future actions beyond its control resulting from ongoing or future drought conditions, development within the District may be delayed or even stopped. The Development Agreement provides that should the City need to restrict development it must do so City-wide and cannot single out the Villages at Sierra Vista property in restricting development activity. In turn, the anticipated diversity of land ownership within the District could also be reduced, making the owners of the 2020 Bonds more dependent upon JMC Homes's or other owners of undeveloped land timely payment of the Special Taxes levied on undeveloped property. Furthermore, such an increased period of concentrated ownership of undeveloped land increases the potential negative impact of any bankruptcy or other financial difficulties experienced by JMC Homes or successor owners. Any reduction or interruption in the water supply would also likely cause a reduction in the land value and thus a reduction in the security in the event of a need to foreclose on land within the District following a delinquency in the payment of Special Taxes.

Legal Requirements. Other events that may affect the value of a parcel include changes in the law or application of the law. Such changes may include, without limitation, local growth control initiatives, local utility connection moratoriums and local application of statewide tax and governmental spending limitation measures. Development in the District may also be adversely affected by the application of laws protecting endangered or threatened species.

Hazardous Substances. Any discovery of a hazardous substance detected on property within the District would affect the marketability and the value of some or all of the property in the District. In that event, the owners and operators of a parcel within the District may be required by law to remedy conditions of the parcel relating to releases or threatened releases of hazardous substances. The federal Comprehensive Environmental Response, Compensation and Liability Act of 1980, sometimes referred to as "CERCLA" or the "Superfund Act," is the most well-known and widely applicable of these laws. California laws with regard to hazardous substances are also applicable to property within the District and are as stringent as the federal laws. Under many of

these laws, the owner (or operator) is obligated to remedy a hazardous substance condition of property whether or not the owner (or operator) has anything to do with creating or handling the hazardous substance. The effect, therefore, should any of the parcels be contaminated by a hazardous substance is to reduce the marketability and value of the parcel by the costs of remedying the condition, because the purchaser, upon becoming owner, will become obligated to remedy the condition just as is the seller.

The values set forth in the Appraisal do not take into account the possible reduction in marketability and value of any of the parcels within the District by reason of the possible liability of the owner (or operator) for the remedy of a hazardous substance condition on a parcel. Although the City is not aware that the owner (or operator) of any of the property within the District has a current liability for a hazardous substance with respect to any of the parcels, it is possible that such liabilities do currently exist and that the City is not aware of them.

Further, it is possible that liabilities may arise in the future with respect to any of the parcels within the District resulting from the existence, currently, on the parcel of a substance presently classified as hazardous but which has not been released or the release of which is not presently threatened, or may arise in the future resulting from the existence, currently, on the parcel of a substance not presently classified as hazardous but which may in the future be so classified. Further, such liabilities may arise not simply from the existence of a hazardous substance but from the method of handling it. All of these possibilities could significantly affect the value of a parcel within the District that is realizable upon a foreclosure sale.

Endangered and Threatened Species. It is illegal to harm or disturb any plants or animals in their habitat that have been listed as endangered species by the United States Fish & Wildlife Service under the Federal Endangered Species Act or by the California Fish & Game Commission under the California Endangered Species Act without a permit. Although JMC Homes believes that no federally listed endangered or threatened species would be affected by the proposed development within the District, other than any that are permitted by the entitlements already received (which allow for the impact of development and specify the mitigation required), the discovery of an endangered plant or animal could delay development of vacant property in the District or reduce the value of undeveloped property.

Levy and Collection of Special Taxes

General. The principal source of payment of principal of and interest on the 2020 Bonds is the proceeds of the annual levy and collection of the Special Tax against property within the District.

Limitation on Maximum Special Tax Rate. The annual levy of the Special Tax is subject to the Maximum Annual Facilities Special Tax rate authorized in the Special Tax Formula. The levy cannot be made at a higher rate even if the failure to do so means that the estimated proceeds of the levy and collection of the Special Tax, together with other available funds, will not be sufficient to pay debt service on the 2020 Bonds.

In addition to the Maximum Annual Facilities Special Tax rate limitation in the Special Tax Formula, Section 53321(d) of the Act provides that the special tax levied against any parcel for which an occupancy permit for private residential use has been issued may not be increased as a consequence of delinquency or default by the owner of any other parcel within a community facilities district by more than 10% above the amount that would have been levied in such Fiscal Year had there never been any such delinquencies or defaults. In cases of significant delinquency, these factors may result in defaults in the payment of principal of and interest on the 2020 Bonds.

No Relationship Between Property Value and Special Tax Levy. Because the Special Tax Formula is not based on property value, the levy of the Special Tax will rarely, if ever, result in a uniform relationship between the value of particular parcels of Taxable Property and the amount of the levy of the Special Tax against those parcels. Thus, there will rarely, if ever, be a uniform relationship between the value of the parcels of Taxable Property and their proportionate share of debt service on the 2020 Bonds, and certainly not a direct relationship.

Factors that Could Lead to Special Tax Deficiencies. The following are some of the factors that might cause the levy of the Special Tax on any particular parcel of Taxable Property to vary from the Special Tax that might otherwise be expected:

Transfers to Governmental Entities. The number of parcels of Taxable Property could be reduced through the acquisition of Taxable Property by a governmental entity and failure of the government to pay the Special Tax based upon a claim of exemption or, in the case of the federal government or an agency thereof, immunity from taxation, thereby resulting in an increased tax burden on the remaining taxed parcels.

Property Tax Delinquencies. Failure of the owners of Taxable Property to pay property taxes (and, consequently, the Special Tax), or delays in the collection of or inability to collect the Special Tax by tax sale or foreclosure and sale of the delinquent parcels, could result in a deficiency in the collection of Special Tax revenues. See “– Tax Delinquencies” below. There is currently no history of tax levies in the District.

Delays Following Special Tax Delinquencies and Foreclosure Sales. The Fiscal Agent Agreement generally provides that the Special Tax is to be collected in the same manner as ordinary *ad valorem* property taxes are collected and, except as provided in the special covenant for foreclosure described in “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Delinquent Payments of Special Tax; Covenant for Superior Court Foreclosure” and in the Act, is subject to the same penalties and the same procedure, sale and lien priority in case of delinquency as is provided for ordinary *ad valorem* property taxes. Under these procedures, if taxes are unpaid for a period of five years or more, the property is deeded to the State and then is subject to sale by the County.

If sales or foreclosures of property are necessary, there could be a delay in payments to owners of the 2020 Bonds pending such sales or the prosecution of foreclosure proceedings and receipt by the City of the proceeds of sale if the Reserve Fund is depleted. See “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Delinquent Payments of Special Tax; Covenant for Superior Court Foreclosure.”

The ability of the City to collect interest and penalties specified by State law and to foreclose against properties having delinquent Special Tax installments may be limited in certain respects with regard to properties in which the Federal Deposit Insurance Corporation (the “**FDIC**”) has or obtains an interest. The FDIC would obtain such an interest by taking over a financial institution that has made a loan that is secured by property within the District. See “– FDIC/Federal Government Interests in Properties” below.

Other laws generally affecting creditors’ rights or relating to judicial foreclosure may affect the ability to enforce payment of Special Taxes or the timing of enforcement of Special Taxes. For example, the Soldiers and Sailors Civil Relief Act of 1940 affords protections such as a stay in enforcement of the foreclosure covenant, a six-month period after termination of military service to

redeem property sold to enforce the collection of a tax or assessment and a limitation on the interest rate on the delinquent tax or assessment to persons in military service if the court concludes the ability to pay such taxes or assessments is materially affected by reason of such service.

FDIC/Federal Government Interests in Properties

General. The ability of the District to foreclose the lien of delinquent unpaid Special Tax installments may be limited with regard to properties in which the Federal Deposit Insurance Corporation (the “**FDIC**”), the Drug Enforcement Agency, the Internal Revenue Service, or other federal agency has or obtains an interest.

Federal courts have held that, based on the supremacy clause of the United States Constitution, in the absence of Congressional intent to the contrary, a state or local agency cannot foreclose to collect delinquent taxes or assessments if foreclosure would impair the federal government interest.

The supremacy clause of the United States Constitution reads as follows: “This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the contrary notwithstanding.”

This means that, unless Congress has otherwise provided, if a federal governmental entity owns a parcel that is subject to Special Taxes within the District but does not pay taxes and assessments levied on the parcel (including Special Taxes), the applicable state and local governments cannot foreclose on the parcel to collect the delinquent taxes and assessments.

Moreover, unless Congress has otherwise provided, if the federal government has a mortgage interest in the parcel and the District wishes to foreclose on the parcel as a result of delinquent Special Taxes, the property cannot be sold at a foreclosure sale unless it can be sold for an amount sufficient to pay delinquent taxes and assessments on parity with the Special Taxes and preserve the federal government’s mortgage interest. In *Rust v. Johnson* (9th Circuit; 1979) 597 F.2d 174, the United States Court of Appeal, Ninth Circuit held that the Federal National Mortgage Association (“**FNMA**”) is a federal instrumentality for purposes of this doctrine, and not a private entity, and that, as a result, an exercise of state power over a mortgage interest held by FNMA constitutes an exercise of state power over property of the United States.

Bankruptcy and Foreclosure Delays

The payment of the Special Tax and the ability of the District to foreclose the lien of a delinquent unpaid tax, as discussed in “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Delinquent Payments of Special Tax; Covenant for Superior Court Foreclosure,” may be limited by bankruptcy, insolvency or other laws generally affecting creditors’ rights or by the laws of the State of California relating to judicial foreclosure. The various legal opinions to be delivered concurrently with the delivery of the 2020 Bonds (including Bond Counsel’s approving legal opinion) will be qualified as to the enforceability of the various legal instruments by bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors’ rights, by the application of equitable principles and by the exercise of judicial discretion in appropriate cases.

Although bankruptcy proceedings would not cause the Special Taxes to become extinguished, bankruptcy of a property owner could result in a delay in prosecuting superior court

foreclosure proceedings and could result in the possibility of delinquent Special Tax installments not being paid in full. Such a delay would increase the likelihood of a delay or default in payment of the principal of and interest on the 2020 Bonds. To the extent that property in the District continues to be owned by a limited number of property owners, the chances are increased that the Reserve Fund established for the 2020 Bonds could be fully depleted during any such delay in obtaining payment of delinquent Special Taxes. As a result, sufficient moneys would not be available in the Reserve Fund for transfer to the Bond Fund to make up shortfalls resulting from delinquent payments of the Special Tax and thereby to pay principal of and interest on the 2020 Bonds on a timely basis.

To the extent that bankruptcy or similar proceedings were to involve a large property owner, the chances would increase the likelihood that the Reserve Fund could be fully depleted during any resulting delay in receiving payment of delinquent Special Taxes. As a result, sufficient monies would not be available in the Reserve Fund for transfer to the Bond Fund to make up any shortfalls resulting from delinquent payments of the Special Tax and thereby to pay principal of and interest on the 2020 Bonds on a timely basis.

On July 30, 1992, the United States Court of Appeals for the Ninth Circuit issued its opinion in a bankruptcy case entitled *In re Glasply Marine Industries*. In that case, the court held that *ad valorem* property taxes levied by Snohomish County in the State of Washington after the date that the property owner filed a petition for bankruptcy were not entitled to priority over a secured creditor with a prior lien on that property. The court upheld the priority of unpaid *ad valorem* taxes imposed before the bankruptcy petition (the “pre-petition taxes”), but unpaid taxes imposed after the filing of the bankruptcy petition (“post-petition taxes”) were declared to be unsecured “administrative expenses” of the bankruptcy estate, and were therefore held to be payable from the bankruptcy estate only after payment of all secured creditors. As a result, the secured creditor of the property was able to foreclose on the property and retain all of the proceeds of the sale except for the amount of the pre-petition taxes.

According to the court’s ruling, as administrative expenses, post-petition taxes would have to be paid, but only if the debtor had sufficient assets not subject to other perfected security interests to do so. In certain circumstances, payment of such administrative expenses may also be allowed to be deferred. Once the property is transferred out of the bankruptcy estate (through foreclosure or otherwise) it would at that time again become subject to and would secure liens for then current and future *ad valorem* taxes.

Glasply was controlling precedent on bankruptcy courts in the State of California for several years subsequent to the date of the Ninth Circuit’s holding. Pursuant to state law, the lien date for general *ad valorem* property taxes levied in the State of California is the January 1 preceding the fiscal year for which the taxes are levied. Under the *Glasply* holding, a bankruptcy petition filing would have prevented the lien for general *ad valorem* property taxes levied in fiscal years subsequent to the filing of a bankruptcy petition from attaching and becoming a lien so long as the property was a part of the estate in bankruptcy. However, the *Glasply* holding was for the most part subsequently rendered inoperative with respect to the imposition of a lien for and the collection of *ad valorem* taxes by amendments to the federal Bankruptcy Code (Title 11 U.S.C.) which were part of the Bankruptcy Reform Act of 1994 (the “Bankruptcy Reform Act”) passed by Congress during the later part of 1994. The Bankruptcy Reform Act added a provision to the automatic stay section of the Bankruptcy Code which, pursuant to Section 362(b)(18) thereof, excepts from the Bankruptcy Code’s automatic stay provisions, “the creation of a statutory lien for an *ad valorem* property tax imposed by . . . a political subdivision of a state, if such tax comes due after the filing of the petition” by a debtor in bankruptcy court. The effect of this provision is to continue the secured interest of *ad*

valorem taxes on real property (i.e., post-petition taxes) in effect during the period following the filing of a bankruptcy petition, including during the period bankruptcy proceedings are pending.

Without further clarification by the courts or Congress, the original rationale of the *Glasply* holding could, however, still result in the treatment of post-petition special taxes as “administrative expenses,” rather than as tax liens secured by real property, at least during the pendency of bankruptcy proceedings. This treatment might result from the fact that, although the lien of special taxes is of record from the date of the filing of a Notice of Special Tax Lien, the actual special tax is levied annually. As noted above, special taxes have a different lien date than the lien date for general *ad valorem* taxes in the State of California noted above. The lien of a Mello-Roos special tax attaches upon recordation of the notice of the special tax lien, as provided for in Section 53328.3 of the Act, as opposed to the annual January 1 lien date for general *ad valorem* taxes. Thus, in deciding whether the original *Glasply* ruling is applicable to a bankruptcy proceeding involving special taxes rather than general *ad valorem* property taxes, a court might consider the differences in the statutory provisions for creation of the applicable tax lien (general *ad valorem* or special tax) in determining whether there is a basis for post petition special taxes to be entitled to a lien on the property during pending bankruptcy proceedings. If a court were to apply *Glasply* to eliminate the priority of the special tax lien as a secured claim against property with respect to post-petition levies of the Special Taxes made against property owners within the District who file for bankruptcy, collections of the Special Taxes from such property owners could be reduced as the result of being treated as “administrative expenses” of the bankruptcy estate. Also, and most importantly, is the fact that the original holding in *Glasply* and the mitigation of that holding by the Bankruptcy Reform Act of 1994 both appear to be applicable only to general *ad valorem* taxes, and, therefore, the exemption from the automatic stay in Section 362(b)(18) discussed above may not be applicable to special taxes since they were not expressly mentioned or provided for in this section, nor defined to be included within the term “*ad valorem* taxes.”

Parity Taxes and Special Assessments; Private Debt

The City, the County and certain other public agencies are authorized by the Act to form other community facilities districts and improvement areas and, under other provisions of State law, to form special assessment districts, either or both of which could include all or a portion of the land within the District.

Property in the District is currently subject to certain overlapping tax and assessment liens, as shown in the overlapping debt statement. Property in the District is also subject to the special tax of two additional community facilities districts formed to fund services and known as the Sierra Vista Community Facilities District No. 2 (Public Services) and the City’s Community Facilities District No. 3 (Municipal Services). The property is not subject to any other special tax or assessment liens (other than the lien of the Special Tax). See “VALUE OF PROPERTY WITHIN THE DISTRICT – Estimated Tax Burden on Single Family Home.”

In addition, other governmental obligations may be authorized and undertaken or issued in the future, the tax, assessment or charge for which may become an obligation of one or more of the parcels of taxable property and may be secured by a lien on a parity with the lien of the Special Tax securing the 2020 Bonds. The principal of and interest on the 2020 Bonds are payable from the Special Tax authorized to be collected within the District, and payment of the Special Tax is secured by a lien on certain real property within the District. Such lien is co-equal to and independent of the lien for general taxes and any other liens imposed under the Act, regardless of when they are imposed on the property in the District. The imposition of additional special taxes, assessments and general property taxes will increase the amount of independent and co-equal liens which must be

satisfied in foreclosure if unpaid. The City, the County and certain other public agencies are authorized by the Act to form other community facilities districts and improvement areas and, under other provisions of State law, to form special assessment districts, either or both of which could include all or a portion of the land within the District. Although the Special Taxes will generally have priority over non-governmental liens on a parcel of taxable property, regardless of whether the non-governmental liens were in existence at the time of the levy of the Special Tax or not, this result may not apply in the case of bankruptcy. See “– Bankruptcy and Foreclosure Delays” above.

There can be no assurance that property owners within the District will not petition for the formation of other community facilities districts and improvement areas or for a special assessment district or districts and that parity special taxes or special assessments will not be levied by the County or some other public agency to finance additional public facilities. Property owners may also elect to finance improvements to their homes through Property Assessed Clean Energy (PACE) financings, which are secured by assessment district liens. In addition to liens for special taxes or assessments to finance public improvements of benefit to land within the District, owners of property may obtain loans from banks or other private sources which loans may be secured by a lien on the parcels in the District. Such loans would increase amounts owed by the owner of such parcel with respect to development of its property in the District. However, the lien of such loans would be subordinate to the lien of the Special Taxes.

Tax Delinquencies

Under provisions of the Act, the Special Taxes will be billed to the properties within the District on the regular property tax bills sent to owners of such properties. Such Special Tax installments are due and payable, and bear the same penalties and interest for nonpayment, as do regular property tax installments. Special Tax installment payments cannot be made separately from property tax payments. Therefore, the unwillingness or inability of a property owner to pay regular property tax bills as evidenced by property tax delinquencies may also indicate an unwillingness or inability to make regular property tax payments and Special Tax payments in the future.

The annual Special Tax will be billed and collected in two installments payable without penalty by December 10 and April 10. In the event such Special Taxes are not timely paid, moneys available to pay debt service on the 2020 Bonds becoming due on the subsequent respective March 1 and September 1 may be insufficient, except to the extent moneys are available in the Reserve Fund.

In the event of non-payment of Special Taxes, funds in the 2020 Reserve Account of the Reserve Fund, if available, may be used to pay principal of and interest on the 2020 Bonds. If funds in the 2020 Reserve Account of the Reserve Fund for the 2020 Bonds are depleted, the funds can be replenished from the proceeds of the levy and collection of the Special Tax that are in excess of the amount required to pay all amounts to be paid to the 2020 Bond holders pursuant to the Fiscal Agent Agreement. However, no replenishment from the proceeds of a Special Tax levy can occur as long as the proceeds that are collected from the levy of the Special Tax against property within the District at the maximum Special Tax rates, together with other available funds, remains insufficient to pay all such amounts. Thus it is possible that the 2020 Reserve Account of the Reserve Fund will be depleted and not be replenished by the levy of the Special Tax.

See “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Delinquent Payments of Special Tax; Covenant for Superior Court Foreclosure” for a discussion of the provisions which apply, and procedures which the City is obligated to follow, in the event of delinquency in the payment of Special Taxes. See also “SECURITY AND SOURCES OF PAYMENT FOR THE

BONDS – Special Tax Methodology” for a discussion of a limitation imposed by the Act applicable to Special Tax increases on residential property.

No Acceleration Provisions

The 2020 Bonds do not contain a provision allowing for the acceleration of the 2020 Bonds in the event of a payment default or other default under the terms of the 2020 Bonds or the Fiscal Agent Agreement. Under the Fiscal Agent Agreement, a 2020 Bond holder is given the right for the equal benefit and protection of all 2020 Bond holders similarly situated to pursue certain remedies. So long as the 2020 Bonds are in book-entry form, DTC will be the sole 2020 Bond holder and will be entitled to exercise all rights and remedies of 2020 Bond holders.

Ballot Initiatives

From time to time, initiative measures qualify for the State ballot pursuant to the State’s constitutional initiative process, and those measures could be adopted by California voters. The adoption of any such initiative might place limitations on the ability of the State, the City, the County or other local districts to increase revenues or to increase appropriations or on the ability of the landowners to complete the development of the District. See “–Property Values and Property Development – Land Development” above. See also “–Voter Initiatives” below.

Voter Initiatives

Under the California Constitution, the power of initiative is reserved to the voters for the purpose of enacting statutes and constitutional amendments. Since 1978, the voters have exercised this power through the adoption of Proposition 13 and similar measures, including Proposition 218, which was approved in the general election held on November 5, 1996, and Proposition 26, which was approved on November 2, 2010.

Any such initiative may affect the collection of fees, taxes and other types of revenue by local agencies such as the District. Subject to overriding federal constitutional principles, such collection may be materially and adversely affected by voter-approved initiatives, possibly to the extent of creating cash-flow problems in the payment of outstanding obligations such as the 2020 Bonds.

Proposition 218—Voter Approval for Local Government Taxes—Limitation on Fees, Assessments, and Charges—Initiative Constitutional Amendment, added Articles XIIIC and XIID to the California Constitution, imposing certain vote requirements and other limitations on the imposition of new or increased taxes, assessments and property-related fees and charges.

On November 2, 2010, California voters approved Proposition 26, entitled the “Supermajority Vote to Pass New Taxes and Fees Act”. Section 1 of Proposition 26 declares that Proposition 26 is intended to limit the ability of the State Legislature and local government to circumvent existing restrictions on increasing taxes by defining the new or expanded taxes as “fees.” Proposition 26 amended Articles XIII A and XIIIC of the State Constitution. The amendments to Article XIII A limit the ability of the State Legislature to impose higher taxes (as defined in Proposition 26) without a two-thirds vote of the Legislature. Article XIIIC requires that all new local taxes be submitted to the electorate before they become effective. Taxes for general governmental purposes require a majority vote and taxes for specific purposes (“special taxes”) require a two-thirds vote.

The Special Taxes and the issuance of special tax bonds of the District were each authorized by not less than a two-thirds vote of the landowners within the District who constituted the qualified

electors at the time of such voted authorization. The District believes, therefore, that issuance of the 2020 Bonds does not require the conduct of further proceedings under the Mello-Roos Act, Proposition 218 or Proposition 26.

Like their antecedents, Proposition 218 and Proposition 26 are likely to undergo both judicial and legislative scrutiny before the impact on the District can be determined. Certain provisions of Proposition 218 and Proposition 26 may be examined by the courts for their constitutionality under both State and federal constitutional law, the outcome of which cannot be predicted.

Recent Case Law Related to the Mello-Roos Act

On August 1, 2014, the California Court of Appeal, Fourth Appellate District, issued its opinion in *City of San Diego v. Melvin Shapiro, et al.* (D063997). The case involved a Convention Center Facilities District (the “CCFD”) established by the City of San Diego. The CCFD is a financing district established under the City’s charter (the “Charter”) and was intended to function much like a community facilities district established under the Mello-Roos Act. The CCFD was comprised of all of the real property in the entire City. However, the CCFD special tax was to be levied only on properties in the CCFD that were improved with a hotel.

At the election to authorize the CCFD special tax, the CCFD proceedings limited the electorate to owners of hotel properties and lessees of real property owned by a governmental entity on which a hotel was located. Registered voters in the City of San Diego were not permitted to vote. This definition of the qualified electors of the CCFD was based on Section 53326(c) of the Mello-Roos Act, which generally provides that, if a special tax will not be apportioned in any tax year on residential property, the legislative body may provide that the vote shall be by the landowners of the proposed community facilities district whose property would be subject to the special tax.

The *San Diego* Court held that the CCFD special tax election did not comply with the City’s Charter and with applicable provisions of the California Constitution -- specifically Article XIII A, section 4 (“Cities, Counties and special districts, by a two-thirds vote of the qualified electors of such district, may impose special taxes on such district....”) and Article XIII C, section 2(d) (“No local government may impose, extend, or increase any special tax unless and until that tax is submitted to the electorate and approved by a two-thirds vote.”) -- because the electors in the CCFD election should have been the registered voters residing within the CCFD (the boundaries of which were coterminous with the boundaries of the City of San Diego).

As to the District, there were no registered voters within the District at the time of the election to authorize the Special Taxes. Significantly, the *San Diego* Court expressly stated that it was not addressing the validity of a landowner election to impose special taxes on residential property pursuant to the Mello-Roos Act in situations where there are fewer than 12 registered voters. Therefore, by its terms, the *San Diego* Court’s holding does not apply to the special tax election in the District.

Moreover, Sections 53341 and 53359 of the Act establish a limited period of time in which special taxes levied under the Mello-Roos Act may be challenged by a third party:

53341. Any action or proceeding to attack, review, set aside, void, or annul the levy of a special tax or an increase in a special tax pursuant to [the Mello-Roos Act] shall be commenced within 30 days after the special tax is approved by the voters....

53359. An action to determine the validity of bonds issued pursuant to [the Mello-Roos Act] or the validity of any special taxes levied pursuant to [the Mello-Roos Act] ... shall be commenced within 30 days after the voters approve the issuance of the bonds or the special tax ...

Section 53326(b) of the Mello-Roos Act defines the authorized voters for an election in which the special taxes will be levied on residential property: “Except as otherwise provided in subdivision (c), if at least 12 persons, who need not necessarily be the same 12 persons, have been registered to vote within the territory of the proposed community facilities district for each of the 90 days preceding the close of the protest hearing, the vote shall be by the registered voters of the proposed district, with each voter having one vote. Otherwise, the vote shall be by the landowners of the proposed district and each person who is the owner of land at the close of the protest hearing, or the authorized representative thereof, shall have one vote for each acre or portion of an acre of land that he or she owns within the proposed community facilities district not exempt from the special tax....”

Landowner voters approved the Special Taxes and the issuance of bonds for the District in compliance with all applicable requirements of the Mello-Roos Act in 2018. Therefore, pursuant to Sections 53341 and 53359 of the Mello-Roos Act, the statute of limitations period to challenge the validity of the special tax has expired. Because the *San Diego* Court expressly stated that it did not consider the facts presented by the District and because the period for challenging the Special Taxes has passed, the City believes the Special Taxes are valid and cannot be challenged.

Recent Changes in Tax Law

H.R. 1 of the 115th U.S. Congress, known as the “Tax Cuts and Jobs Act,” was enacted into law on December 22, 2017 (the “**Tax Act**”). The Tax Act makes significant changes to many aspects of the Code that could have an impact on future property development. The Tax Act reduces the amount of mortgage interest expense and state local income tax and property tax expense that individuals may deduct from their gross income for federal income tax purposes, which could increase the cost of home ownership within the District and could adversely affect the sale of homes by JMC Homes. However, neither the City nor JMC Homes can predict the effect that the Tax Act may have on the cost of home ownership or the price of homes in the District, the rate at which homes in the District are sold to individual homeowners, or the ability or willingness of homeowners to pay special taxes or property taxes on Taxable Property within the District. The appraised values do not take into account any of the potential impacts of the Tax Act on home values or home sales in the District.

COVID-19

The spread of the COVID-19 coronavirus pandemic, and responses intended to slow its spread, are likely to result in negative impacts to the homebuilding operations and sales of homes within the District. In addition, no assurance can be given that the property tax payment dates will not be deferred in the future, which may cause a delay in the receipt of Special Tax Revenues by the City for the payment of the 2020 Bonds. Finally, stock and municipal bond markets in the U.S. and globally have seen significant volatility attributed to coronavirus concerns; there can be no assurances that these or other concerns that emerge later will not materially adversely impact the secondary market for the 2020 Bonds.

There can be no assurances that the spread of the virus and the related shelter in place order and social distancing requirements currently imposed by the State of California, or other State or

local mandates and/or other responses intended to slow its spread will not materially adversely impact the pace of homesales or the willingness of owners of land in the District to pay the Special Taxes securing the 2020 CFD Bonds and the Prior CFD Bonds.

As a measure to assist certain taxpayers impacted by COVID 19, on May 6, 2020 the Governor of the State issued Executive Order N-61-20 which waives penalties and interest on property tax installments for residential property occupied by the taxpayer and certain other real property which is used for a small business, subject to certain filing requirements and proof of economic hardship due to COVID-19 or any local, state or federal response to COVID-19. The order applies to taxes not delinquent prior to March 4, 2020, and waives and forgives penalties and interest through May 6, 2021.

Negative impacts on the collection of Special Taxes could occur because Special Tax payments are deferred and could be further deferred, or some taxpayers may be unable to make their property and special tax payments. Such impacts could be offset because the County operates under the Teeter Plan, which shields the City from delinquencies. There is the possibility that the County could end the Teeter Plan in the future, although County staff has indicated that they have no plan to do that. Through _____, 2020, the County reports it has received _____ percent of the property tax levy, which results in a delinquency rate of approximately _____ percent, which is [slightly higher than the normal _____ percent delinquency rate]. The value of property on the 2020-21 and future tax rolls could be reduced, which will not be known until the tax roll is released sometime in **late July 2020**. At this time, there is no way to provide an estimate of the impact that the pandemic could have on future property taxes.

CONSTITUTIONAL LIMITATIONS ON TAXATION AND APPROPRIATIONS

Article XIII A of the California Constitution, commonly known as “**Proposition 13**,” provides that each county will levy the maximum *ad valorem* property tax permitted by Proposition 13 and will distribute the proceeds to local agencies in accordance with an allocation formula based in part on pre-Proposition 13 *ad valorem* property tax rates levied by local agencies.

Article XIII A limits the maximum *ad valorem* tax on real property to 1% of “full cash value,” which is defined as the County Assessor’s valuation of real property as shown on the 1975-76 tax bill under full cash value, or, thereafter, the appraised value of real property when purchased, newly constructed, or a change in ownership has occurred after the 1975 assessment. The full cash value may be adjusted annually to reflect increases of no more than 2% per year or decreases in the consumer price index or comparable local data, or declining property value caused by damage, destruction or other factors.

Article XIII A exempts from the 1% tax limitation any taxes to repay indebtedness approved by the voters prior to July 1, 1978, and requires a vote of two-thirds of the qualified electorate to impose Special Taxes or any additional *ad valorem*, sales, or transaction taxes on real property. In addition, Article XIII A requires the approval of two-thirds of all members of the State Legislature to change any State laws resulting in increased tax revenues. On June 3, 1986, California voters approved an amendment to Article XIII A of the California Constitution to allow local governments and school districts to raise their property tax rates above the constitutionally mandated 1% ceiling for the purpose of paying off certain new general obligation debt issued for the acquisition or improvement of real property and approved by two-thirds of the votes cast by the qualified electorate. If any such voter-approved debt is issued, it may be on a parity with the lien of the Special Tax on the parcels within the District.

State and local government agencies in the State, and the State itself are subject to annual appropriation limits, imposed by Article XIII B of the State Constitution. Article XIII B prohibits government agencies and the State from spending "appropriations subject to limitation" in excess of the appropriations limits imposed. "Appropriations subject to limitation" are authorizations to spend "proceeds of taxes," which consist of tax revenues, certain state subventions and certain other funds, including proceeds from regulatory licenses, user charges or other fees to the extent that such proceeds exceed the cost reasonably borne by such entity in providing the regulation, product or service. No limit is imposed on appropriations of funds which are not "proceeds of taxes" such as debt service on indebtedness existing or authorized before January 1, 1979, or subsequently authorized by the voters, appropriations required to comply with mandates of courts or the federal government, reasonable user charges or fees and certain other non-tax funds.

CONTINUING DISCLOSURE

The City has covenanted for the benefit of owners of the 2020 Bonds to provide certain financial information and operating data relating to the District by not later than nine months after the end of the City's fiscal year (presently June 30) in each year (the "**City Annual Report**") commencing with its report for the 2019-20 fiscal year (due April 1, 2021) and to provide notices of the occurrence of certain enumerated events.

JMC Homes has also covenanted for the benefit of owners of the 2020 Bonds to provide certain financial information and operating data relating to the property it or its affiliates owns in the District by not later than April 1st and October 1st of each year, beginning with the report due October 1, 2020 (the "**Developer Periodic Reports**") and to provide notices of the occurrence of certain enumerated events. The obligation of JMC Homes to provide such information is in effect only so long as JMC Homes and its affiliates, or their successors, are collectively responsible for 20% or more of the Special Taxes, as described in the Developer Periodic Reports and JMC Homes' undertaking includes a provision that if a portion of JMC Homes' property which is responsible for such 20% is sold, the reporting obligation may be assumed by the new owner and JMC Homes' obligations with respect to such property will be terminated, or if not so assumed, JMC Homes is to report such required information, as applicable to the transferee.

The City Annual Report and the Developer Periodic Reports and notices of listed events will be filed with the Municipal Securities Rulemaking Board. The covenants of the City have been made in order to assist the Underwriter in complying with Securities Exchange Commission Rule 15c2-12(b)(5) (the "**Rule**"). The specific nature of the information to be contained in the Annual Report or the notices of listed events by the City and JMC Homes is summarized in "APPENDIX E — FORM OF CONTINUING DISCLOSURE UNDERTAKINGS."

The City believes it currently is in material compliance with all of its continuing disclosure undertakings for the last five years. Notwithstanding the foregoing, in the last five years:

(1) The Annual Reports for Fiscal Year 2014-15 for certain of the City's then-outstanding obligations were not timely filed, including up to 510 days late.

(2) In the last five years, the City has not in a timely manner filed all significant event notices of changes in the ratings of certain then-outstanding obligations resulting from changes in ratings to the bond insurers who insured such obligations or the underlying rates for such obligations, including up to 1,983 days late. However, the City has submitted all undisclosed significant event notices of changes in ratings occurring during the last five years on all currently outstanding obligations.

JMC Homes has represented to the City that, during the past five years, JMC Homes has been in material compliance with its continuing disclosure undertakings.

UNDERWRITING

The 2020 Bonds were purchased through negotiation by Piper Sandler & Co., as underwriter (the "**Underwriter**"). The Underwriter agreed to purchase the 2020 Bonds at a price of \$_____ (which is equal to the par amount of the 2020 Bonds, plus/less an original issue premium/discount of \$_____ and less the Underwriter's discount of \$_____). The initial public offering prices set forth on the cover page hereof may be changed by the

Underwriter. The Underwriter may offer and sell the 2020 Bonds to certain dealers and others at a price lower than the public offering prices set forth on the cover page hereof.

MUNICIPAL ADVISOR

The City has retained Hilltop Securities Inc., Encino, California, as registered municipal advisor (the “**Municipal Advisor**”) in connection with the issuance of the 2020 Bonds. The Municipal Advisor is not obligated to undertake, and has not undertaken to make, an independent verification or assume responsibility for the accuracy, completeness, or fairness of the information contained in this Official Statement. The fees of the Municipal Advisor are contingent upon the sale and delivery of the 2020 Bonds.

LEGAL OPINION

The validity of the 2020 Bonds and certain other legal matters are subject to the approving opinion of Jones Hall, a Professional Law Corporation, Bond Counsel. A complete copy of the proposed form of Bond Counsel opinion is contained in APPENDIX D to this Official Statement, and the final opinion will be made available to registered owners of the 2020 Bonds at the time of delivery. The fees of Bond Counsel are contingent upon the sale and delivery of the 2020 Bonds.

TAX MATTERS

Federal Tax Status. In the opinion of Jones Hall, A Professional Law Corporation, San Francisco, California, Bond Counsel, subject, however to the qualifications set forth below, under existing law, the interest on the 2020 Bonds is excluded from gross income for federal income tax purposes and such interest is not an item of tax preference for purposes of the federal alternative minimum tax.

The opinions set forth in the preceding paragraph are subject to the condition that the City comply with all requirements of the Internal Revenue Code of 1986, as amended (the “**Tax Code**”) relating to the exclusion from gross income for federal income tax purposes of interest on obligations such as the 2020 Bonds. The City has made certain representations and covenants in order to comply with each such requirement. Inaccuracy of those representations, or failure to comply with certain of those covenants, may cause the inclusion of such interest in gross income for federal income tax purposes, which may be retroactive to the date of issuance of the 2020 Bonds.

Tax Treatment of Original Issue Discount and Premium. If the initial offering price to the public at which a 2020 Bond is sold is less than the amount payable at maturity thereof, then such difference constitutes “original issue discount” for purposes of federal income taxes and State of California personal income taxes. If the initial offering price to the public at which a 2020 Bond is sold is greater than the amount payable at maturity thereof, then such difference constitutes “original issue premium” for purposes of federal income taxes and State of California personal income taxes. *De minimis* original issue discount and original issue premium are disregarded.

Under the Tax Code, original issue discount is treated as interest excluded from federal gross income and exempt from State of California personal income taxes to the extent properly allocable to each owner thereof subject to the limitations described in the first paragraph of this section. The original issue discount accrues over the term to maturity of the 2020 Bond on the basis of a constant interest rate compounded on each interest or principal payment date (with straight-line interpolations

between compounding dates). The amount of original issue discount accruing during each period is added to the adjusted basis of such 2020 Bonds to determine taxable gain upon disposition (including sale, redemption, or payment on maturity) of such 2020 Bond. The Tax Code contains certain provisions relating to the accrual of original issue discount in the case of purchasers of the 2020 Bonds who purchase the 2020 Bonds after the initial offering of a substantial amount of such maturity. Owners of such 2020 Bonds should consult their own tax advisors with respect to the tax consequences of ownership of 2020 Bonds with original issue discount, including the treatment of purchasers who do not purchase in the original offering, the allowance of a deduction for any loss on a sale or other disposition, and the treatment of accrued original issue discount on such 2020 Bonds under federal individual alternative minimum taxes.

Under the Tax Code, original issue premium is amortized on an annual basis over the term of the 2020 Bond (said term being the shorter of the 2020 Bond's maturity date or its call date). The amount of original issue premium amortized each year reduces the adjusted basis of the owner of the 2020 Bond for purposes of determining taxable gain or loss upon disposition. The amount of original issue premium on a 2020 Bond is amortized each year over the term to maturity of the 2020 Bond on the basis of a constant interest rate compounded on each interest or principal payment date (with straight-line interpolations between compounding dates). Amortized 2020 Bond premium is not deductible for federal income tax purposes. Owners of premium 2020 Bonds, including purchasers who do not purchase in the original offering, should consult their own tax advisors with respect to State of California personal income tax and federal income tax consequences of owning such 2020 Bonds.

California Tax Status. In the further opinion of Bond Counsel, interest on the 2020 Bonds is exempt from California personal income taxes.

Other Tax Considerations. Current and future legislative proposals, if enacted into law, clarification of the Tax Code or court decisions may cause interest on the 2020 Bonds to be subject, directly or indirectly, to federal income taxation or to be subject to or exempted from state income taxation, or otherwise prevent beneficial owners from realizing the full current benefit of the tax status of such interest. The introduction or enactment of any such legislative proposals, clarification of the Tax Code or court decisions may also affect the market price for, or marketability of, the 2020 Bonds. It cannot be predicted whether or in what form any such proposal might be enacted or whether, if enacted, such legislation would apply to bonds issued prior to enactment.

The opinions expressed by Bond Counsel are based upon existing legislation and regulations as interpreted by relevant judicial and regulatory authorities as of the date of such opinion, and Bond Counsel has expressed no opinion with respect to any proposed legislation or as to the tax treatment of interest on the 2020 Bonds, or as to the consequences of owning or receiving interest on the 2020 Bonds, as of any future date. Prospective purchasers of the 2020 Bonds should consult their own tax advisors regarding any pending or proposed federal or state tax legislation, regulations or litigation, as to which Bond Counsel expresses no opinion.

Owners of the 2020 Bonds should also be aware that the ownership or disposition of, or the accrual or receipt of interest on, the 2020 Bonds may have federal or state tax consequences other than as described above. Other than as expressly described above, Bond Counsel expresses no opinion regarding other federal or state tax consequences arising with respect to the 2020 Bonds, the ownership, sale or disposition of the 2020 Bonds, or the amount, accrual or receipt of interest on the 2020 Bonds.

NO RATINGS

The City has not applied to a rating agency for the assignment of a rating to the 2020 Bonds and does not contemplate applying for a rating.

NO LITIGATION

At the time of delivery of and payment for the 2020 Bonds, the City Attorney will deliver his opinion that to the best of its knowledge there is no action, suit, proceeding, inquiry or investigation at law or in equity before or by any court or regulatory agency pending against the City affecting its existence or the titles of its officers to office or seeking to restrain or to enjoin the issuance, sale or delivery of the 2020 Bonds, the application of the proceeds thereof in accordance with the Fiscal Agent Agreement, or the collection or application of the Special Tax to pay the principal of and interest on the 2020 Bonds, or in any way contesting or affecting the validity or enforceability of the 2020 Bonds, the Fiscal Agent Agreement or any action of the City contemplated by any of said documents, or in any way contesting the completeness or accuracy of this Official Statement or any amendment or supplement thereto, or contesting the powers of the City or its authority with respect to the 2020 Bonds or any action of the City contemplated by any of said documents.

EXECUTION

The execution and delivery of this Official Statement by the City has been duly authorized by the City Council on behalf of the District.

CITY OF ROSEVILLE

By: _____
Chief Financial Officer

APPENDIX A

RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAX

APPENDIX B
THE APPRAISAL

APPENDIX C

THE CITY OF ROSEVILLE AND PLACER COUNTY

The District is located in the City of Roseville (the “City”), which is located in southwestern Placer County (the “County”), California (the “State”). Certain financial and economic data for the City, County and State are presented in this appendix for information purposes only. The 2020 Bonds are not a debt or obligation of the City, County or State, but are a limited obligation of the City, secured solely by the Special Tax Revenues and other amounts pledged under the Fiscal Agent Agreement, all as described in more detail in this Official Statement.

General

The City is located in the County, which is located in the Sacramento Valley near the foothills of the Sierra Nevada mountain range, about 16 miles northeast of Sacramento and 110 miles east of San Francisco. The City presently occupies 43 square miles in the southwestern part of the County and is the largest city in the County as well as the residential and business center of the County. It is bordered by Sacramento County to the south, the City of Rocklin to the north and un-incorporated Placer County to the east and west. The estimated population of the City as of January 1, 2019 was approximately 139,643.

The City has warm summers typical of central California, with an average July temperature of 77 degrees. Winter temperatures are moderate; the average January temperature is 46 degrees. The temperature drops below freezing an average of eight days per year. Rainfall averages 20 inches annually and falls mostly during the winter.

The City is predominately comprised of residential housing, small and large businesses, as well as numerous retail centers, the latter of which play a vital role in the economy of the City and contribute significantly to City and County sales tax receipts. The City has the thirteenth highest retail sales of all cities in the State, and the City is considered a regional shopping destination. The Westfield Galleria at Roseville is the main shopping center in the City and the second largest shopping mall in Northern California. Across from the Westfield Galleria lies the “Fountains at Roseville,” a 330,000 square foot retail center, containing additional stores and several recreation centers. Plans call for future construction of hotel, additional retail, and office buildings in connection with the Fountains at Roseville project. In addition to the Westfield Galleria and Fountains at Roseville, the City has many shopping plazas surrounding the Westfield Galleria and the Douglas Boulevard financial corridor. The City is also home to one of the largest auto malls in the United States and a popular water park, Roseville Golf and SunSplash.

Municipal Government

The City was incorporated on April 10, 1909 and is a charter city. The City operates under the council-manager form of government, with a five-member City Council elected at large for staggered four-year terms. At each election, the council member receiving the most votes is appointed mayor pro-tempore for two years and becomes mayor for the final two years.

City services include, among others, police and fire protection, library services, street maintenance, and parks and recreation. The City also owns two golf courses and provides its own electricity, water, sewer and refuse services to its citizens.

Population

The following table sets forth population estimates for the City, County and State for the past five years.

POPULATION ESTIMATES
City, County and State
Calendar Years 2016 through 2020, as of January 1

<u>Year</u>	<u>City of Roseville</u>	<u>Placer County</u>	<u>State of California</u>
2016	132,676	376,508	39,131,307
2017	135,398	383,598	39,398,702
2018	137,983	389,387	39,586,646
2019	141,299	395,978	39,695,376
2020	145,163	403,711	39,782,870

Source: California State Department of Finance.

Effective Buying Income

Effective buying income (“**EBI**”) is designated as personal income less personal tax and non-tax payments. Personal income is the aggregate of wages and salaries, other labor income (such as employer contributions to private pension funds), proprietor’s income, rental income (which includes imputed rental income of owner-occupants of non-farm dwellings), dividends paid by corporations, personal interest income from all sources, and transfer payments (such as pensions and welfare assistance). Deducted from this total are personal taxes (federal, state and local), non-tax payments (such as fines, fees, penalties), and personal contributions for social insurance. Effective buying income is a bulk measure of market potential. It indicates the general ability to buy and is essential in comparing, selecting and grouping markets on that basis. The following table demonstrates the growth in annual estimated EBI for the City, the County, the State and the United States.

EFFECTIVE BUYING INCOME (EBI) City, County, State and United States As of January 1, 2016 through 2020

Year	Area	Total Effective Buying Income (000's Omitted)	Median Household Effective Buying Income
2016	City of Roseville	\$3,959,073	\$64,615
	Placer County	11,729,490	64,480
	California	981,231,666	53,589
	United States	7,757,960,399	46,738
2017	City of Roseville	\$4,126,395	\$66,668
	Placer County	12,122,101	65,269
	California	1,036,142,723	55,681
	United States	8,132,748,136	48,043
2018	City of Roseville	\$4,470,762	\$70,438
	Placer County	12,967,927	69,226
	California	1,113,648,181	59,646
	United States	8,640,770,229	50,735
2019	City of Roseville	\$4,981,208	\$75,784
	Placer County	14,736,480	74,797
	California	1,183,264,399	62,637
	United States	9,017,967,563	52,841
2020	City of Roseville	\$4,834,974	\$72,395
	Placer County	14,333,583	72,431
	California	1,243,564,816	65,870
	United States	9,487,165,436	55,303

Source: The Nielsen Company (US), Inc for years 2015 through 2018; Claritas, LLC for 2019 and 2020.

Employment and Industry

The unemployment rate in the Sacramento--Roseville--Arden-Arcade MSA was 3.8 percent in February 2020, down from a revised 3.9 percent in January 2020, and below from the year-ago estimate of 4.0 percent. This compares with an unadjusted unemployment rate of 4.3 percent for California and 3.8 percent for the nation during the same period. The unemployment rate was 3.7 percent in El Dorado County, 3.2 percent in Placer County, 3.8 percent in Sacramento County, and 4.9 percent in Yolo County.

The following table summarizes the civilian labor force, employment and unemployment, as well as employment by industry, in the Sacramento--Arden-Arcade--Roseville MSA for the years 2015 through 2019. Annual figures are not yet available for 2020.

CIVILIAN LABOR FORCE, EMPLOYMENT AND UNEMPLOYMENT
Sacramento Arden Arcade Roseville Metropolitan Statistical Area
(El Dorado, Placer, Sacramento, and Yolo Counties)
Civilian Labor Force, Employment and Unemployment
Annual Averages

	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
<u>Civilian Labor Force</u> ⁽¹⁾	1,052,800	1,068,300	1,075,300	1,089,600	1,101,000
Employment	991,200	1,012,000	1,026,400	1,048,200	1,061,400
Unemployment	61,700	56,400	48,900	41,400	39,600
Unemployment Rate	5.9%	5.3%	4.5%	3.8%	3.6%
<u>Wage and Salary Employment</u> ⁽²⁾					
Agriculture	9,400	9,700	9,800	9,100	8,800
Mining and Logging	400	400	400	500	500
Construction	50,300	55,000	58,700	64,500	68,400
Manufacturing	36,400	36,200	35,700	36,000	36,500
Wholesale Trade	24,400	25,500	26,500	28,400	28,700
Retail Trade	98,000	100,500	101,400	102,000	100,600
Transportation, Warehousing and Utilities	24,600	26,000	26,700	29,600	32,300
Information	14,200	13,800	12,600	12,400	11,900
Finance and Insurance	37,100	37,300	37,200	36,600	35,200
Real Estate and Rental and Leasing	13,800	14,500	15,200	16,800	17,400
Professional and Business Services	120,100	127,800	130,000	133,500	134,900
Educational and Health Services	140,900	146,500	153,600	159,800	166,400
Leisure and Hospitality	95,400	99,800	103,300	106,200	109,200
Other Services	30,900	31,700	33,000	34,200	35,100
Federal Government	13,700	14,000	14,200	14,100	14,200
State Government	115,300	116,600	118,400	120,400	122,500
Local Government	102,900	104,000	102,600	103,500	104,800
Total, All Industries ⁽³⁾	1,052,800	1,068,300	1,075,300	1,089,600	1,101,000

⁽¹⁾ Labor force data is by place of residence; includes self-employed individuals, unpaid family workers, household domestic workers, and workers on strike.

⁽²⁾ Industry employment is by place of work; excludes self-employed individuals, unpaid family workers, household domestic workers, and workers on strike.

⁽³⁾ Totals may not add due to rounding.

Source: State of California Employment Development Department.

Major Employers

The following table lists the major employers within the County, in alphabetical order.

MAJOR EMPLOYERS Placer County (In Alphabetical Order) April 2020

<u>Employer Name</u>	<u>Location</u>	<u>Industry</u>
Adventist Health	Roseville	Health Services
Alpine Meadows Ski Resort	Alpine Meadows	Resorts
Backyard Bar & BBQ	Truckee	Restaurants
Composite Engineering Inc	Roseville	Engineers-Professional
Costco Wholesale	Roseville	Wholesale Clubs
Golfand Sunsplash	Roseville	Water Parks
Hewlett-Packard	Roseville	Computers-Electronic-Manufacturers
Kaiser Permanente Roseville MD	Roseville	Hospitals
Northstar California	Truckee	Resorts
Placer County Fire Dept	Auburn	Government Offices-County
Placer County Food Stamps	Auburn	County Government-Social/Human Resources
Placer County Sheriff	Auburn	Government Offices-County
Placer County Sheriff Dept	Tahoe City	Government Offices-County
PRIDE Industries	Roseville	Employment Agencies & Opportunities
Q I P-Roseville	Roseville	Real Estate Management
Resort At Squaw Creek	Alpine Meadows	Hotels & Motels
Ritz-Carlton Club Lake Tahoe	Truckee	Hotels & Motels
Sheriff's Training	Auburn	Government Offices-County
Sierra Community College Dist	Rocklin	Junior-Community College-Tech Institutes
Stagg Howard A Pro Corp	Roseville	Attorneys
Sutter Auburn Faith Hospital	Auburn	Hospitals
Sutter Roseville Medical Ctr	Roseville	Hospitals
Tami Saner & Assoc	Roseville	Real Estate
Thunder Valley Casino	Lincoln	Casinos
Union Pacific Railroad Co	Roseville	Railroads

Source: State of California Employment Development Department, extracted from the America's Labor Market Information System (ALMIS) Employer Database, 2020 1st Edition.

Principal Employers

The following table shows the principal employers in the City, as shown in the City's Comprehensive Annual Financial Report for fiscal year ending June 30, 2019.

PRINCIPAL EMPLOYERS City of Roseville As of June 30, 2019

<u>Employer</u>	<u>Number of Employees</u>
The Permanente Medical Group & Foundation Group	5,794
Sutter Roseville Medical Group	2,202
City of Roseville	1,896
Hewlett Packard	1,154
Roseville City School District	1,154
PRIDE Industries	1,062
Roseville Joint Union High School	1,005
Adventist Health	920
Union Pacific Railroad Company	569
Wal-Mart	488
Total – Top Ten	<u>16,244</u>
Total City-Wide Employment	88,597

Source: City of Roseville Comprehensive Annual Financial Report for Fiscal Year 2018-19.

Construction Permits

The following table shows valuations of residential and non-residential building permits issued for calendar years 2014 through 2018. Annual figures are not yet available for 2019

BUILDING PERMIT VALUATION City of Roseville (Valuation in Thousands of Dollars)

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
<u>Permit Valuation</u>					
New Single-family	\$154,499.7	\$262,769.4	\$242,272.7	\$322,386.5	\$220,813.8
New Multi-family	15,360.4	0.0	5,900.3	51,882.2	0.0
Res. Alterations/Additions	<u>4,967.8</u>	<u>9,039.9</u>	<u>7,518.4</u>	<u>7,283.3</u>	<u>8,598.7</u>
Total Residential	\$174,827.9	\$271,809.3	\$255,691.4	\$381,552.0	\$229,412.5
 New Commercial	 \$19,546.6	 \$36,704.0	 \$27,783.7	 \$81,544.8	 \$21,072.5
New Industrial	0.0	0.0	0.0	0.0	0.0
New Other	10,935.1	9,340.5	18,126.2	8,356.1	11,541.4
Com. Alterations/Additions	<u>62,138.9</u>	<u>42,754.7</u>	<u>32,621.0</u>	<u>51,836.3</u>	<u>38,098.5</u>
Total Nonresidential	\$92,620.6	\$88,799.2	\$78,530.9	\$141,737.2	\$70,712.4
 <u>New Dwelling Units</u>					
Single-Family	644	927	862	1,201	806
Multiple Family	<u>0</u>	<u>0</u>	<u>58</u>	<u>486</u>	<u>0</u>
Total New Dwelling Units	644	927	920	1,687	806

Source: Construction Industry Research Board, Building Permit Summary.

The County's 2019-20 assessment roll totaled \$80.0 billion as compared to the prior year's assessment roll of \$75.3 billion, which reflected a 6.24% increase this year. These numbers over the last two years contrast with the real estate decline years of 2008 and after, where the County assessment roll experienced declines.

The following table shows residential and non-residential building permits issued within the County for calendar years 2014 through 2018. Annual figures are not yet available for 2019.

BUILDING PERMIT VALUATION
County of Placer
(Valuation in Thousands of Dollars)

	2014	2015	2016	2017	2018
<u>Permit Valuation</u>					
New Single-family	\$523,638.2	\$683,806.3	\$776,410.8	\$771,800.5	\$696,737.4
New Multi-family	48,645.5	21,702.2	42,395.7	92,565.5	23,384.7
Res. Alterations/Additions	<u>59,428.5</u>	<u>82,577.5</u>	<u>79,543.6</u>	<u>89,429.2</u>	<u>99,341.6</u>
Total Residential	\$631,712.2	\$788,086.0	\$898,350.1	\$953,795.2	\$819,463.7
 New Commercial	 \$38,343.5	 \$72,506.2	 \$84,953.2	 \$138,544.8	 \$90,424.4
New Industrial	199.8	1,339.6	535.1	0.0	7,956.4
New Other	44,159.8	72,602.9	90,958.7	57,356.4	68,208.3
Com. Alterations/Additions	<u>101,977.7</u>	<u>80,457.5</u>	<u>64,524.2</u>	<u>94,058.6</u>	<u>84,271.0</u>
Total Nonresidential	\$184,680.8	\$226,906.2	\$240,971.2	\$289,959.8	\$250,860.1
 <u>New Dwelling Units</u>					
Single-Family	1,620	1,994	2,102	2,500	1,963
Multiple Family	<u>376</u>	<u>240</u>	<u>322</u>	<u>782</u>	<u>19</u>
Total New Dwelling Units	2,234	2,424	2,342	3,282	<u>1,982</u>

Source: Construction Industry Research Board, Building Permit Summary.

Commercial Activity

A summary of historic taxable sales within the City and the County during the past five years in which data is available is shown in the following tables.

The total taxable sales during three quarters of calendar year 2019 in the City were reported to be \$3,588,427,384, a 3.51% increase from the total taxable sales of \$3,466,584,246 reported during three quarters of calendar year 2018. Annual figures for 2019 are not yet available.

TAXABLE TRANSACTIONS City of Roseville Calendar Years 2014 through 2018 (Dollars in Thousands)

	Retail Stores		Total All Outlets	
	Number of Permits	Taxable Transactions	Number of Permits	Taxable Transactions
2014	3,699	\$3,607,127	4,743	\$4,227,788
2015 ⁽¹⁾	3,828	3,684,238	5,334	4,446,457
2016	3,761	3,749,782	5,293	4,425,939
2017	3,715	3,915,184	5,257	4,642,069
2018	3,705	\$4,048,870	5,393	\$4,767,160

(1) Permit figures for calendar year 2015 are not comparable to that of prior years due to outlet counts in these reports including the number of outlets that were active during the reporting period. Retailers that operate part-time are now tabulated with store retailers.

Source: State Board of Equalization. Taxable Sales in California (Sales & Use Tax) for years 2014-2016. State Department of Tax and Fee Administration for year 2017 and 2018.

The total taxable sales during three quarters of calendar year 2019 in the County were reported to be \$7,566,637,000, a 5.01% increase over the total taxable sales of \$7,205,828,358 reported during the three quarters of calendar year 2018. Annual figures for 2019 are not yet available.

TAXABLE TRANSACTIONS Placer County Calendar Years 2014 through 2018 (Dollars in Thousands)

	Retail Stores		Total All Outlets	
	Number of Permits	Taxable Transactions	Number of Permits	Taxable Transactions
2014	8,520	\$6,296,076	11,749	\$8,100,167
2015 ⁽¹⁾	8,678	6,594,126	13,124	8,675,315
2016	8,671	6,814,515	13,227	8,920,892
2017	8,713	7,194,952	13,365	9,428,862
2018	8,717	7,724,326	13,794	9,909,906

(1) Permit figures for calendar year 2015 are not comparable to that of prior years due to outlet counts in these reports including the number of outlets that were active during the reporting period. Retailers that operate part-time are now tabulated with store retailers.

Source: State Board of Equalization. Taxable Sales in California (Sales & Use Tax) for years 2014-2016. State Department of Tax and Fee Administration for year 2017 and 2018.

Transportation

The transportation network in and around the City is an integral part of its development. Centrally located in the State, the area is the hub of several major highways. Interstate 80 runs through the City, connecting San Francisco to New York. Highway 65 runs north through the City, from I-80 to Lincoln and Marysville. Interstate 5, which is west of the City, runs north to Seattle and south to Los Angeles.

Union Pacific Railroad bought Southern Pacific in 1996 and the J.R. Davis Yard, located in Roseville, is the largest rail facility on the West Coast. Union Pacific owns and operates track in 23 states, primarily west of the Mississippi River. Amtrak provides passenger service daily to San Francisco and San Jose, and the California Zephyr connects the County to the Midwest and Chicago.

Greyhound operates a station in the City, providing interstate destination services. Greyhound also operates throughout the County, with bus depots or regularly scheduled stops in most of the communities along major highways and roads.

Sacramento International Airport serves the Roseville area. Served by ten major carriers and several commuter airlines, as well as air-freight carriers, the airport handles passenger flights to over 140 cities with more than 130 scheduled departures per day and 4.3 million passengers annually. Nearby Auburn Municipal Airport serves charter and private aircraft for coastal, state and transcontinental flights. Executive air service is available as well. Auburn Municipal has an elevation of 1,520 feet and an east/west runway 3,100 feet in length.

Several trucking companies serve the City, ranging from interstate lines to local haulers, and transporting a wide variety of goods. United Parcel Service, with a distribution center in Rocklin, offers freight transportation services as well.

APPENDIX D
FORM OF OPINION OF BOND COUNSEL

[Closing Date]

City Council
City of Roseville
311 Vernon Street
Roseville, California 95678

OPINION: \$_____ City of Roseville Villages at Sierra Vista Community Facilities
 District No. 1 (Public Facilities) Special Tax Bonds Series 2020

Members of the City Council:

We have acted as bond counsel to the City of Roseville (the "City") in connection with the issuance by the City of the \$_____ City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds Series 2020 (the "Bonds"), pursuant to the Mello-Roos Community Facilities Act of 1982, as amended, constituting Section 53311, et seq. of the California Government Code (the "Act") and a Fiscal Agent Agreement dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the "Fiscal Agent Agreement"), by and between the City, on behalf of the City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities), and The Bank of New York Mellon Trust Company, N.A., as fiscal agent. We have examined the law and such certified proceedings and other papers as we deem necessary to render this opinion.

As to questions of fact material to our opinion, we have relied upon representations of the City contained in the Fiscal Agent Agreement, and in the certified proceedings and other certifications of public officials furnished to us, without undertaking to verify the same by independent investigation.

Based upon the foregoing, we are of the opinion, under existing law, as follows:

1. The City is duly created and validly existing as a public body, corporate and politic, with the power to adopt the resolution authorizing the issuance of the Bonds, enter into the Fiscal Agent Agreement and perform the agreements on its part contained therein, and to issue the Bonds.

2. The Bonds have been duly authorized, executed and delivered by the City and are valid and binding limited obligations of the City, payable solely from the sources provided therefor in the Fiscal Agent Agreement.

3. The Fiscal Agent Agreement has been duly entered into by the City and constitutes a valid and binding obligation of the City enforceable upon the City.

4. Pursuant to the Act, the Fiscal Agent Agreement creates a valid lien on the funds pledged by the Fiscal Agent Agreement.

5. The interest on the Bonds is excluded from gross income for federal income tax purposes and is not an item of tax preference for purposes of the federal alternative minimum tax. The opinions set forth in the preceding sentence are subject to the condition that the City comply with all requirements of the Internal Revenue Code of 1986, as amended, relating to the exclusion from gross income for federal income tax purposes of interest on obligations such as the Bonds. The City has made certain representations and covenants in order to comply with each such requirement. Inaccuracy of those representations, or failure to comply with certain of those covenants, may cause the inclusion of such interest in gross income for federal income tax purposes, which may be retroactive to the date of issuance of the Bonds.

6. The interest on the Bonds is exempt from personal income taxation imposed by the State of California.

We express no opinion regarding any other tax consequences arising with respect to the ownership, sale or disposition of, or the amount, accrual or receipt of interest on, the Bonds.

The rights of the owners of the Bonds and the enforceability of the Bonds are limited by bankruptcy, insolvency, reorganization, moratorium and other similar laws affecting creditors' rights generally, and by equitable principles, whether considered at law or in equity.

This opinion is given as of the date hereof, and we assume no obligation to revise or supplement this opinion to reflect any facts or circumstances that may hereafter come to our attention, or any changes in law that may hereafter occur. Our engagement with respect to this matter has terminated as of the date hereof.

Respectfully submitted,

A Professional Law Corporation

APPENDIX E

FORMS OF CONTINUING DISCLOSURE UNDERTAKINGS

CONTINUING DISCLOSURE CERTIFICATE (City)

This CONTINUING DISCLOSURE CERTIFICATE (this “Disclosure Certificate”) dated as of _____ 1, 2020, is executed and delivered by the CITY OF ROSEVILLE (the “City”) in connection with the execution and delivery of its City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds Series 2020 (the “Bonds”). The Bonds are being executed and delivered pursuant to a Fiscal Agent Agreement dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the “Fiscal Agent Agreement”), by and between the City and The Bank of New York Mellon Trust Company, N.A., as fiscal agent (the “Fiscal Agent”).

The District covenants and agrees as follows:

Section 1. Purpose of the Disclosure Certificate. This Disclosure Certificate is being executed and delivered by the City for the benefit of the holders and beneficial owners of the Bonds and in order to assist the Participating Underwriter in complying with S.E.C. Rule 15c2-12(b)(5).

Section 2. Definitions. In addition to the definitions set forth above and in the Fiscal Agent Agreement, which apply to any capitalized term used in this Disclosure Certificate unless otherwise defined in this Section 2, the following capitalized terms shall have the following meanings:

“Annual Report” means any Annual Report provided by the City pursuant to, and as described in, Sections 3 and 4 of this Disclosure Certificate.

“Annual Report Date” means the date that is nine months after the end of the City’s fiscal year (currently April 1 based on the City’s fiscal year end of June 30).

“Dissemination Agent” means Willdan Financial Services, or any successor Dissemination Agent designated in writing by the City and which has filed with the City a written acceptance of such designation.

“Listed Events” means any of the events listed in Section 5(a) of this Disclosure Certificate.

“MSRB” means the Municipal Securities Rulemaking Board, which has been designated by the Securities and Exchange Commission as the sole repository of disclosure information for purposes of the Rule, or any other repository of disclosure information that may be designated by the Securities and Exchange Commission as such for purposes of the Rule in the future.

“Official Statement” means the final official statement executed by the City in connection with the issuance of the Bonds.

“Participating Underwriter” shall mean any of the original underwriters of the Bonds.

“Rule” means Rule 15c2-12(b)(5) adopted by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as it may be amended from time to time.

Section 3. Provision of Annual Reports.

(a) The City shall, or shall cause the Dissemination Agent to, not later than the Annual Report Date, commencing April 1, 2020, with the report for the 2018-19 fiscal year, provide to the MSRB, in an electronic format as prescribed by the MSRB, an Annual Report that is consistent with the requirements of Section 4 of this Disclosure Certificate. Not later than 15 Business Days prior to the Annual Report Date, the City shall provide the Annual Report to the Dissemination Agent (if other than the City). If by 15 Business Days prior to the Annual Report Date the Dissemination Agent (if other than the City) has not received a copy of the Annual Report, the Dissemination Agent shall contact the City to determine if the City is in compliance with the previous sentence. The Annual Report may be submitted as a single document or as separate documents comprising a package, and may include by reference other information as provided in Section 4 of this Disclosure Certificate; provided that the audited financial statements of the City may be submitted separately from the balance of the Annual Report, and later than the Annual Report Date, if not available by that date. If the City’s fiscal year changes, it shall give notice of such change in the same manner as for a Listed Event under Section 5(b). The City shall provide a written certification with each Annual Report furnished to the Dissemination Agent to the effect that such Annual Report constitutes the Annual Report required to be furnished by the City hereunder.

(b) If the City does not provide (or cause the Dissemination Agent to provide) an Annual Report by the Annual Report Date, the City shall provide (or cause the Dissemination Agent to provide) in a timely manner to the MSRB, in an electronic format as prescribed by the MSRB, a notice in substantially the form attached as Exhibit A to this Disclosure Certificate.

(c) With respect to each Annual Report, the Dissemination Agent shall:

(i) determine prior to each Annual Report Date the then-applicable rules and electronic format prescribed by the MSRB for the filing of annual continuing disclosure reports; and

(ii) if the Dissemination Agent is other than the City, file a report with the City certifying that the Annual Report has been provided pursuant to this Disclosure Certificate, and stating the date it was provided.

Section 4. Content of Annual Reports. The City’s Annual Report shall contain or incorporate by reference the following:

(a) The City’s audited financial statements prepared in accordance with generally accepted accounting principles as promulgated to apply to governmental entities from time to time by the Governmental Accounting Standards Board. If the City’s audited financial statements are not available by the Annual Report Date, the Annual Report shall contain unaudited financial statements in a format similar to the financial statements contained in the Official Statement, and the audited financial statements shall be filed in the same manner as the Annual Report when they become available.

(b) The following information, unless otherwise specified, as of September 30 of the preceding year:

(i) Principal amount of all outstanding bonds of the District.

(ii) Balance in the improvement fund.

(iii) Balance in 2020 Reserve Account of the Reserve Fund, and statement of the Reserve Requirement for the Bonds. Statement of projected draws on the 2020 Reserve Account of the Reserve Fund, if any.

(iv) Balance in other funds and accounts held by the City or fiscal agent related to the Bonds.

(v) Additional debt authorized by the City and payable from or secured by assessments or special taxes with respect to property within the District.

(vi) The Special Tax levy, the delinquency rate, total amount of delinquencies, number of parcels delinquent in payment for the five most recent fiscal years.

(vii) Notwithstanding the September 30 reporting date, the following information shall be reported as of the last day of the month immediately preceding the date of the Annual Report rather than as of September 30. Identity of each delinquent taxpayer responsible for 5 percent or more of total Special Tax levied, and the following information: assessor parcel number, assessed value of applicable properties, amount of Special Tax levied, amount delinquent by parcel number and status of foreclosure proceedings. If any foreclosure has been completed, summary of results of foreclosure sales or transfers.

(viii) Most recently available total assessed value of all parcels subject to the Special Tax.

(ix) List of landowners and assessor's parcel number of parcels subject to 20% or more of the Special Tax levy including the following information: development status to the extent shown in City records, land use classification, assessed value (land and improvements).

(c) In addition to any of the information expressly required to be provided under this Disclosure Certificate, the City shall provide such further material information, if any, as may be necessary to make the specifically required statements, in the light of the circumstances under which they are made, not misleading.

(d) Any or all of the items listed above may be included by specific reference to other documents, including official statements of debt issues of the City or related public entities, which are available to the public on the MSRB's Internet web site or filed with the Securities and Exchange Commission. The City shall clearly identify each such other document so included by reference.

Section 5. Reporting of Significant Events.

(a) The City shall give, or cause to be given, notice of the occurrence of any of the following Listed Events with respect to the Bonds:

- (1) Principal and interest payment delinquencies.
- (2) Non-payment related defaults, if material.
- (3) Unscheduled draws on debt service reserves reflecting financial difficulties.
- (4) Unscheduled draws on credit enhancements reflecting financial difficulties.
- (5) Substitution of credit or liquidity providers, or their failure to perform.
- (6) Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the security, or other material events affecting the tax status of the security.
- (7) Modifications to rights of security holders, if material.
- (8) Bond calls, if material, and tender offers.
- (9) Defeasances.
- (10) Release, substitution, or sale of property securing repayment of the securities, if material.
- (11) Rating changes.
- (12) Bankruptcy, insolvency, receivership or similar event of the City or other obligated person.
- (13) The consummation of a merger, consolidation, or acquisition involving the City or an obligated person, or the sale of all or substantially all of the assets of the City or an obligated person (other than in the ordinary course of business), the entry into a definitive agreement to undertake such an action, or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material.
- (14) Appointment of a successor or additional fiscal agent or the change of name of the fiscal agent, if material.
- (15) Incurrence of a financial obligation of the City, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a financial obligation of the City, any of which affect security holders, if material (for the definition of "financial obligation," see clause (e)).

- (16) Default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a financial obligation of the City, any of which reflect financial difficulties (for the definition of “financial obligation,” see clause (e)).

(b) Whenever the City obtains knowledge of the occurrence of a Listed Event, the City shall, or shall cause the Dissemination Agent (if not the City) to, file a notice of such occurrence with the MSRB, in an electronic format as prescribed by the MSRB, in a timely manner not in excess of 10 business days after the occurrence of the Listed Event. Notwithstanding the foregoing, notice of Listed Events described in subsections (a)(8) and (9) above need not be given under this subsection any earlier than the notice (if any) of the underlying event is given to holders of affected Bonds under the Fiscal Agent Agreement.

(c) The City acknowledges that the events described in subparagraphs (a)(2), (a)(7), (a)(8) (if the event is a bond call), (a)(10), (a)(13), (a)(14) and (a)(15) of this Section 5 contain the qualifier “if material” and that subparagraph (a)(6) also contains the qualifier “material” with respect to certain notices, determinations or other events affecting the tax status of the Bonds. The City shall cause a notice to be filed as set forth in paragraph (b) above with respect to any such event only to the extent that it determines the event’s occurrence is material for purposes of U.S. federal securities law. Whenever the City obtains knowledge of the occurrence of any of these Listed Events, the City will as soon as possible determine if such event would be material under applicable federal securities law. If such event is determined to be material, the City will cause a notice to be filed as set forth in paragraph (b) above. The Dissemination Agent shall not be responsible for determining whether an event is material.

(d) For purposes of this Disclosure Certificate, any event described in paragraph (a)(12) above is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent, or similar officer for the City in a proceeding under the United States Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the City, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement, or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the City.

(e) For purposes of Section 5(a)(15) and (16), “financial obligation” means a (i) debt obligation; (ii) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation; or (iii) guarantee of (i) or (ii). The term financial obligation shall not include municipal securities as to which a final official statement has been provided to the MSRB consistent with the Rule.

Section 6. Identifying Information for Filings with the MSRB. All documents provided to the MSRB pursuant to this Disclosure Certificate shall be accompanied by identifying information as prescribed by the MSRB.

Section 7. Termination of Reporting Obligation. The City’s obligations under this Disclosure Certificate shall terminate upon the legal defeasance, prior redemption or payment in full of all of the Bonds. If such termination occurs prior to the final maturity of the Bonds, the City shall give notice of such termination in the same manner as for a Listed Event under Section 5(b).

Section 8. Dissemination Agent. The City may, from time to time, appoint or engage a Dissemination Agent to assist it in carrying out its obligations under this Disclosure Certificate, and may discharge any Dissemination Agent, with or without appointing a successor Dissemination Agent. Any Dissemination Agent may resign by providing 30 days' written notice to the City.

Section 9. Amendment; Waiver. Notwithstanding any other provision of this Disclosure Certificate, the City may amend this Disclosure Certificate, and any provision of this Disclosure Certificate may be waived, provided that the following conditions are satisfied:

(a) if the amendment or waiver relates to the provisions of Sections 3(a), 4 or 5(a), it may only be made in connection with a change in circumstances that arises from a change in legal requirements, change in law, or change in the identity, nature, or status of an obligated person with respect to the Bonds, or type of business conducted;

(b) the undertakings herein, as proposed to be amended or waived, would, in the opinion of nationally recognized bond counsel, have complied with the requirements of the Rule at the time of the primary offering of the Bonds, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances; and

(c) the proposed amendment or waiver either (i) is approved by holders of the Bonds in the manner provided in the Fiscal Agent Agreement for amendments to the Fiscal Agent Agreement with the consent of holders, or (ii) does not, in the opinion of nationally recognized bond counsel, materially impair the interests of the holders or beneficial owners of the Bonds.

If the annual financial information or operating data to be provided in the Annual Report is amended pursuant to the provisions hereof, the first Annual Report filed pursuant hereto containing the amended operating data or financial information shall explain, in narrative form, the reasons for the amendment and the impact of the change in the type of operating data or financial information being provided.

If an amendment is made to this Disclosure Certificate modifying the accounting principles to be followed in preparing financial statements, the Annual Report for the year in which the change is made shall present a comparison between the financial statements or information prepared on the basis of the new accounting principles and those prepared on the basis of the former accounting principles. The comparison shall include a qualitative discussion of the differences in the accounting principles and the impact of the change in the accounting principles on the presentation of the financial information, in order to provide information to investors to enable them to evaluate the ability of the City to meet its obligations. To the extent reasonably feasible, the comparison shall be quantitative.

A notice of any amendment made pursuant to this Section 9 shall be filed in the same manner as for a Listed Event under Section 5(b).

Section 10. Additional Information. Nothing in this Disclosure Certificate shall be deemed to prevent the City from disseminating any other information, using the means of dissemination set forth in this Disclosure Certificate or any other means of communication, or including any other information in any Annual Report or notice of occurrence of a Listed Event, in addition to that which is required by this Disclosure Certificate. If the City chooses to include any information in any Annual Report or notice of occurrence of a Listed Event in addition to that which is specifically

required by this Disclosure Certificate, the City shall have no obligation under this Disclosure Certificate to update such information or include it in any future Annual Report or notice of occurrence of a Listed Event.

Section 11. Default. If the City fails to comply with any provision of this Disclosure Certificate, the Participating Underwriter or any holder or beneficial owner of the Bonds may take such actions as may be necessary and appropriate, including seeking mandate or specific performance by court order, to cause the City to comply with its obligations under this Disclosure Certificate. A default under this Disclosure Certificate shall not be deemed an Event of Default under the Fiscal Agent Agreement, and the sole remedy under this Disclosure Certificate in the event of any failure of the City to comply with this Disclosure Certificate shall be an action to compel performance.

Section 12. Duties, Immunities and Liabilities of Dissemination Agent.

(a) The Dissemination Agent shall have only such duties as are specifically set forth in this Disclosure Certificate, and the City agrees to indemnify and save the Dissemination Agent, its officers, directors, employees and agents, harmless against any loss, expense and liabilities which they may incur arising out of or in the exercise or performance of its powers and duties hereunder, including the costs and expenses (including attorneys' fees) of defending against any claim of liability, but excluding liabilities due to the Dissemination Agent's negligence or willful misconduct. The Dissemination Agent shall have no duty or obligation to review any information provided to it by the City hereunder and shall not be deemed to be acting in any fiduciary capacity for the City, the Bond holders, or any other party. The obligations of the City under this Section shall survive resignation or removal of the Dissemination Agent and payment of the Bonds.

(b) The Dissemination Agent shall be paid compensation by the City for its services provided hereunder in accordance with its schedule of fees as amended from time to time, and shall be reimbursed for all expenses, legal fees and advances made or incurred by the Dissemination Agent in the performance of its duties hereunder.

Section 13. Beneficiaries. This Disclosure Certificate shall inure solely to the benefit of the City, the Dissemination Agent, the Participating Underwriter and the holders and beneficial owners from time to time of the Bonds, and shall create no rights in any other person or entity.

Section 14. Counterparts. This Disclosure Certificate may be executed in several counterparts, each of which shall be regarded as an original, and all of which shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have executed this Disclosure Certificate as of the date first above written.

CITY OF ROSEVILLE, for and on behalf of
City of Roseville Villages at Sierra Vista
Community Facilities District No. 1 (Public
Facilities)

By: _____
Name:
Title:

WILLDAN FINANCIAL SERVICES, as
Dissemination Agent

By: _____
Name:
Title:

EXHIBIT A

NOTICE TO REPOSITORIES OF FAILURE TO FILE ANNUAL REPORT

Name of Issuer: City of Roseville

Name of Bond Issue: \$_____ City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds Series 2020

Date of Issuance: _____, 2020

NOTICE IS HEREBY GIVEN that the City of Roseville (the "City") on behalf of City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) has not provided an Annual Report with respect to the above-named Bonds as required by the Fiscal Agent Agreement dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the "Fiscal Agent Agreement") by and between the City and The Bank of New York Mellon Trust Company, N.A., as Fiscal Agent. The City anticipates that the Annual Report will be filed by _____.

Dated: _____

WILLDAN FINANCIAL SERVICES, as
Dissemination Agent, on behalf of City of
Roseville Villages at Sierra Vista
Community Facilities District No. 1 (Public
Facilities)

By: _____
Name:
Title:

cc: City of Roseville

**FORM OF CONTINUING DISCLOSURE CERTIFICATE
(Developer)**

THIS CONTINUING DISCLOSURE AGREEMENT (the "Disclosure Certificate") dated as of _____, 2020, is executed by John Mourier Construction, Inc., a California corporation (the "Developer") in connection with the execution and delivery by the City of Roseville of its City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds Series 2020 (the "Bonds"). The Bonds are being executed and delivered pursuant to a Fiscal Agent Agreement, dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the "Fiscal Agent Agreement"), by and between the City and The Bank of New York Mellon Trust Company, N.A., as fiscal agent (the "Fiscal Agent").

The Developer covenants and agrees as follows:

Section 1. Purpose of the Disclosure Certificate. This Disclosure Certificate is being executed and delivered by the Developer for the benefit of the holders and beneficial owners of the Bonds.

Section 2. Definitions. In addition to the definitions set forth above and in the Fiscal Agent Agreement, which apply to any capitalized term used in this Disclosure Certificate unless otherwise defined in this Section, the following capitalized terms shall have the following meanings:

"Affiliate" of another Person means (a) a Person directly or indirectly owning, controlling, or holding with power to vote, 5% or more of the outstanding voting securities of such other Person, (b) any Person, 5% or more of whose outstanding voting securities are directly or indirectly owned, controlled, or held with power to vote, by such other Person, and (c) any Person directly or indirectly controlling, controlled by, or under common control with, such other Person. For purposes hereof, control means the power to exercise a controlling influence over the management or policies of a Person, unless such power is solely the result of an official position with such Person.

"Assumption Agreement" means an undertaking of a Major Owner, or an Affiliate thereof, for the benefit of the holders and beneficial owners of the Bonds containing terms substantially similar to this Disclosure Certificate (as modified for such Major Owner's development and financing plans with respect to the District), whereby such Major Owner or Affiliate agrees to provide periodic reports and notices of significant events, setting forth the information described in sections 4 and 5 hereof, respectively, with respect to the portion of the property in the District owned by such Major Owner and its Affiliates and, at the option of the Developer or such Major Owner, agrees to indemnify the Dissemination Agent (if any) pursuant to a provision substantially in the form of Section 11 hereof.

"Dissemination Agent" means Willdan Financial Services, or any successor Dissemination Agent designated in writing by the Developer, and which has filed with the Developer, the City and the Fiscal Agent a written acceptance of such designation, and which is experienced in providing dissemination agent services such as those required under this Disclosure Certificate.

"Listed Events" means any of the events listed in Section 5(a) of this Disclosure Certificate.

“Major Owner” means, as of any Report Date, an owner of land in the District that is responsible in the aggregate for 20% or more of the Special Taxes in the District anticipated to be levied at any time during the then-current fiscal year.

“MSRB” means the Municipal Securities Rulemaking Board, which has been designated by the Securities and Exchange Commission as the sole repository of disclosure information for purposes of the Rule, or any other repository of disclosure information that may be designated by the Securities and Exchange Commission as such for purposes of the Rule in the future.

“Official Statement” means the final official statement executed by the City in connection with the issuance of the Bonds.

“Participating Underwriter” means Piper Sandler & Co., the original Underwriter of the Bonds.

“Periodic Report” means any Periodic Report provided by the Developer pursuant to, and as described in, Sections 3 and 4 of this Disclosure Certificate.

“Person” means an individual, a corporation, a partnership, a limited liability company, an association, a joint stock company, a trust, any unincorporated organization or a government or political subdivision thereof.

“Property” means the property owned by the Developer in the District.

“Report Date” means April 1 and October 1 of any fiscal year.

“Rule” means Rule 15c2-12(b)(5) adopted by the Securities and Exchange Commission under the Securities Exchange Act of 1934, as the same may be amended from time to time.

“Special Taxes” means the special taxes of the District levied on taxable property within the District.

Section 3. Provision of Periodic Reports.

(a) The Developer shall, or, upon written direction of the Developer the Dissemination Agent shall, not later than the Report Date, commencing October 1, 2020, file or cause to be filed with the MSRB a Periodic Report which is consistent with the requirements of Section 4 of this Disclosure Certificate with a copy to the Fiscal Agent (if different from the Dissemination Agent), the Participating Underwriter and the City. Not later than 15 calendar days prior to the Report Date, the Developer shall provide the Periodic Report to the Dissemination Agent (if different from the Developer). The Developer shall provide a written certification with (or included as a part of) each Periodic Report furnished to the Dissemination Agent (if different from the Developer), the Fiscal Agent (if different from the Dissemination Agent), the Participating Underwriter and the City to the effect that such Periodic Report constitutes the Periodic Report required to be furnished by it under this Disclosure Certificate. The Dissemination Agent, the Fiscal Agent, the Participating Underwriter and the City may conclusively rely upon such certification of the Developer and shall have no duty or obligation to review the Periodic Report. The Periodic Report may be submitted as a single document or as separate documents comprising a package, and may incorporate by reference other information as provided in Section 4 of this Disclosure Certificate.

(b) If the Dissemination Agent does not receive a Periodic Report by 15 calendar days prior to the Report Date, the Dissemination Agent shall send a reminder notice to the Developer that the Periodic Report has not been provided as required under Section 3(a) above. The reminder notice shall instruct the Developer to determine whether its obligations under this Disclosure Certificate have terminated (pursuant to Section 6 below) and, if so, to provide the Dissemination Agent with a notice of such termination in the same manner as for a Listed Event (pursuant to Section 5 below). If the Developer does not provide, or cause the Dissemination Agent to provide, a Periodic Report to the MSRB by the Report Date as required in subsection (a) above, the Dissemination Agent shall send a notice to the MSRB in substantially the form attached hereto as Exhibit A, with a copy to the Fiscal Agent (if other than the Dissemination Agent), the City and the Participating Underwriter.

(c) With respect to the Periodic Report, the Dissemination Agent shall, to the extent the Periodic Report has been furnished to it, file the Periodic Report with the MSRB and file a report with the Developer (if the Dissemination Agent is other than the Developer), the City and the Participating Underwriter certifying that the Periodic Report has been provided pursuant to this Disclosure Certificate, stating the date it was provided to and filed with the MSRB.

Section 4. Content of Periodic Reports. The Developer's Periodic Report shall contain or incorporate by reference the information set forth in Exhibit B relating to the Developer, any or all of which may be included by specific reference to other documents, including official statements of debt issues of the Developer or related public entities, which have been submitted to the MSRB or the Securities and Exchange Commission. If the document included by reference is a final official statement, it must be available from the MSRB. The Developer shall clearly identify each such other document so included by reference.

In addition to any of the information expressly required to be provided in Exhibit B, the Developer's Periodic Report shall include such further information, if any, as may be necessary to make the specifically required statements, in the light of the circumstances under which they are made, not misleading.

Section 5. Reporting of Significant Events.

(a) The Developer shall give, or cause to be given, notice of the occurrence of any of the following Listed Events with respect to itself or the Property, if material:

(i) bankruptcy or insolvency proceedings commenced by or against the Developer and, if known, any bankruptcy or insolvency proceedings commenced by or against any Affiliate of the Developer that is reasonably likely to have a significant impact on the Developer's ability to pay Special Taxes or to sell or develop the Property;

(ii) failure to pay any taxes, special taxes (including the Special Taxes) or assessments due with respect to the Property on or prior to the delinquency date;

(iii) filing of a lawsuit of which the Developer is aware against the Developer or an Affiliate seeking damages, which is reasonably likely to have a significant impact on the Developer's ability to pay Special Taxes or to sell or develop the Property;

(iv) material damage to or destruction of any of the improvements on the Property; and

(v) any payment default or other material default by the Developer on any loan with respect to the construction of improvements on the Property.

(b) Whenever the Developer obtains knowledge of the occurrence of a Listed Event, the Developer shall as soon as possible determine if such event would be material under applicable Federal securities law.

(c) If the Developer determines that knowledge of the occurrence of a Listed Event would be material under applicable Federal securities law, the Developer shall, or shall cause the Dissemination Agent to, promptly file a notice of such occurrence with the MSRB, with a copy to the Fiscal Agent, the City and the Participating Underwriter.

Section 6. Duration of Reporting Obligation.

(a) All the Developer's obligations hereunder shall commence on the date hereof and terminate (except as provided in Section 11) on the earliest to occur of the following:

(i) upon the legal defeasance, prior redemption or payment in full of all the Bonds, or

(ii) at such time as property owned by the Developer is no longer responsible for payment of 20% or more of the Special Taxes, or

(iii) the date on which the Developer prepays in full all of the Special Taxes attributable to the Property, or

(iv) the date on which (A) the Developer has completed construction of all buildings to be constructed within property it owns in the District and (B) each such building constructed by the Developer and intended for lease by the Developer has been, since completion of construction, at least 80% occupied at one time or another, if applicable.

The Developer shall give notice of the termination of its obligations under this Disclosure Certificate in the same manner as for a Listed Event under Section 5.

(b) If a portion of the Property owned by the Developer, or any Affiliate of the Developer, is conveyed to a Person that, upon such conveyance, will be a Major Owner, the obligations of the Developer hereunder with respect to the property in the District owned by such Major Owner and its Affiliates may be assumed by such Major Owner or by an Affiliate thereof, and if so assumed the Developer's obligations hereunder with respect to such portion of the Property will be terminated. In order to effect such an assumption, such Major Owner or Affiliate shall enter into an Assumption Agreement in form and substance reasonably satisfactory to the City and the Participating Underwriter. If not so assumed, the Developer shall report the information, as applicable to the transferee, required herein so long as the transferee is a Major Owner.

Section 7. Dissemination Agent. The Developer may, from time to time, appoint or engage a Dissemination Agent to assist the Developer in carrying out its obligations under this Disclosure Certificate, and may discharge any such Dissemination Agent, with or without appointing a successor Dissemination Agent. The Dissemination Agent may resign by providing thirty days' written notice to the City, the Developer and the Participating Underwriter.

Section 8. Amendment; Waiver. Notwithstanding any other provision of this Disclosure Certificate, the Developer may amend this Disclosure Certificate, and any provision of this Disclosure Certificate may be waived, provided that the following conditions are satisfied (provided, however, that the Dissemination Agent shall not be obligated under any such amendment that modifies or increases its duties or obligations hereunder without its written consent thereto):

(a) if the amendment or waiver relates to the provisions of sections 3(a), 4 or 5(a), it may only be made in connection with a change in circumstances that arises from a change in legal requirements, change in law, or change in the identity, nature, or status of an obligated person with respect to the Bonds, or type of business conducted; and

(b) the proposed amendment or waiver either (i) is approved by holders of the Bonds in the manner provided in the Fiscal Agent Agreement, with the consent of holders, or (ii) does not, in the opinion of nationally recognized bond counsel, materially impair the interests of the holders or beneficial owners of the Bonds.

Section 9. Additional Information. Nothing in this Disclosure Certificate shall be deemed to prevent the Developer from disseminating any other information, using the means of dissemination set forth in this Disclosure Certificate or any other means of communication, or including any other information in any Periodic Report or notice of occurrence of a Listed Event, in addition to that which is required by this Disclosure Certificate. If the Developer chooses to include any information in any Periodic Report or notice of occurrence of a Listed Event in addition to that which is specifically required by this Disclosure Certificate, the Developer shall have no obligation under this Disclosure Certificate to update such information or include it in any future Periodic Report or notice of occurrence of a Listed Event.

Section 10. Default. In the event of a failure of the Developer to comply with any provision of this Disclosure Certificate, the Fiscal Agent shall (upon written direction and only to the extent indemnified to its satisfaction from any liability, cost or expense, including fees and expenses of its attorneys), and the Participating Underwriter and any holder or beneficial owner of the Bonds may, take such actions as may be necessary and appropriate, including seeking mandate or specific performance by court order, to cause the Developer to comply with its obligations under this Disclosure Certificate. A default under this Disclosure Certificate shall not be deemed an Event of Default under the Fiscal Agent Agreement, and the sole and exclusive remedy under this Disclosure Certificate in the event of any failure of the Developer to comply with this Disclosure Certificate shall be an action to compel performance.

Section 11. Duties, Immunities and Liabilities of Dissemination Agent. The Dissemination Agent shall have only such duties as are specifically set forth in this Disclosure Certificate, and the Developer agrees to indemnify and save the Dissemination Agent, its officers, directors, employees and agents (each, an "Indemnified Party"), harmless against any loss, expense and liabilities which it may incur arising out of or in the exercise or performance of its powers and duties hereunder, including the reasonable costs and expenses (including attorneys' fees) of defending against any claim of liability, but excluding loss, liabilities, costs and expenses due to an Indemnified Party's negligence or willful misconduct or failure to perform its duties hereunder. The Dissemination Agent shall be paid compensation for its services provided hereunder in accordance with its schedule of fees as amended from time to time, which schedule, as amended, shall be reasonably acceptable, and all reasonable expenses, reasonable legal fees and advances made or incurred by the Dissemination Agent in the performance of its duties hereunder. The Dissemination Agent shall have no duty or obligation to review any information

provided to it hereunder and shall not be deemed to be acting in any fiduciary capacity for the City, the Developer, the Fiscal Agent, the Bond owners, or any other party. The obligations of the Developer under this Section shall survive resignation or removal of the Dissemination Agent and payment of the Bonds.

Section 12. Notices. Any notice or communications to be among any of the parties to this Disclosure Certificate may be given as follows:

To the Developer	John Mourier Construction, Inc. Attn: _____ _____ _____
To the Dissemination Agent:	Willdan Financial Services 27368 Via Industria, Suite 200 Temecula, CA 92590
To the Issuer/City:	City of Roseville 311 Vernon Street Roseville, CA 95678 Attn: CFD Administrator
To the Fiscal Agent:	The Bank of New York Mellon Trust Company, N.A. 400 South Hope Street, Suite 400 Los Angeles, CA 90071 Attn: Corporate Trust
To the Participating Underwriter:	Piper Sandler & Co. Attn: _____ 2321 Rosecrans Avenue, Suite 3200, El Segundo, CA 90245

Any person may, by written notice to the other persons listed above, designate a different address or telephone number(s) to which subsequent notices or communications should be sent.

Section 13. Beneficiaries. This Disclosure Certificate shall inure solely to the benefit of the City, the Developer (its successors and assigns), the Fiscal Agent, the Dissemination Agent, the Participating Underwriter and holders and beneficial owners from time to time of the Bonds, and shall create no rights in any other person or entity. All obligations of the Developer hereunder shall be assumed by any legal successor to the obligations of the Developer as a result of a sale, merger, consolidation or other reorganization.

Section 14. Counterparts. This Disclosure Certificate may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

IN WITNESS WHEREOF, the Developer has executed this Disclosure Certificate as of the date first above written.

John Mourier Construction, Inc., a California corporation

By: _____
Name:
Title:

ACCEPTED by DISSEMINATION AGENT:

Willdan Financial Services,
as Dissemination Agent

By: _____
Name:
Title:

EXHIBIT A

NOTICE TO REPOSITORIES OF FAILURE TO FILE PERIODIC REPORT

Name of Issuer: City of Roseville

Name of Bond Issue: \$_____ City of Roseville, Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities), Special Tax Bonds, Series 2020

Date of Issuance: _____, 2020

NOTICE IS HEREBY GIVEN that _____ (the "Major Owner") has not provided a Periodic Report with respect to the above-named Bonds as required by the Continuing Disclosure Certificate of the Developer dated as of the date of issuance of such Bonds. The Developer anticipates that the Periodic Report will be filed by _____.

Dated: _____

_____,
Dissemination Agent

By: _____

Its: _____

cc: Developer

EXHIBIT B

PERIODIC REPORT

This Periodic Report is hereby submitted under Section 4 of the Continuing Disclosure Certificate (the "Disclosure Certificate") dated _____ 1, 2020, executed by the undersigned (the "Developer") in connection with the issuance of the above-captioned bonds by the City of Roseville (the "City") with respect to its City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the "District").

Capitalized terms used in this Periodic Report but not otherwise defined have the meanings given to them in the Disclosure Certificate.

I. Property Ownership and Development

The information in this section is provided as of _____ (this date must be not more than 60 days before the date of this Periodic Report).

A. Property currently owned by the Developer in the District (the "Property"):

Development name: _____

Number of lots (acreage): _____

B. Status of land development or construction activities:

C. Status of building permits and any significant amendments to land use or development entitlements:

D. Aggregate property sold, optioned or leased by the Developer to end users or merchant builders:

Since the Date of
Issuance of the Bonds

Since the Last Periodic
Report

Acres* _____
Lots _____
Bldg. Sq. Ft. _____

Acres* _____
Lots _____
Bldg. Sq. Ft. _____

* For bulk land sales only (excluding sales of finished lots or completed buildings).

E. Status of any land purchase contracts with regard to the Property, whether acquisition of land in the District by the Developer or sales of land in the District to other property

owners, distinguishing between (i) end users (e.g., condominiums), (ii) developers and (iii) merchant builders.

F. With respect to occupied buildings owned and leased by Developer, (i) occupancy percentage and (ii) a rent roll consisting solely of (A) term of lease and (B) number of square feet subject to the lease, if applicable.

II. Legal and Financial Status of Developer

Unless such information has previously been included or incorporated by reference in a Periodic Report, describe any change in the legal structure of the Developer or the financial condition and financing plan of the Developer that would materially and adversely interfere with its ability to complete its development plan described in the Official Statement.

III. Change in Development or Financing Plans

Unless such information has previously been included or incorporated by reference in a Periodic Report, describe any development plans or financing plans relating to the Property *that are materially different from* the proposed development and financing plan described in the Official Statement.

IV. Official Statement Updates

Unless such information has previously been included or incorporated by reference in a Periodic Report, describe any other significant changes in the information relating to the Developer or the Property contained in the Official Statement under the heading "OWNERSHIP OF PROPERTY WITHIN THE DISTRICT" that would materially and adversely interfere with the Developer's ability to develop and sell the Property as described in the Official Statement.

V. Other Material Information

In addition to any of the information expressly required above, provide such further information, if any, as may be necessary to make the specifically required statements, in the light of the circumstances under which they are made, not misleading.

Certification

The undersigned Developer hereby certifies that this Periodic Report constitutes the Periodic Report required to be furnished by the Developer under the Disclosure Certificate.

ANY STATEMENTS REGARDING THE DEVELOPER, THE DEVELOPMENT OF THE PROPERTY, THE DEVELOPER'S FINANCING PLAN OR FINANCIAL CONDITION, OR THE BONDS, OTHER THAN STATEMENTS MADE BY THE DEVELOPER IN AN OFFICIAL RELEASE, OR FILED WITH THE MUNICIPAL SECURITIES RULEMAKING BOARD, ARE NOT AUTHORIZED BY THE DEVELOPER. THE DEVELOPER IS NOT RESPONSIBLE FOR THE ACCURACY, COMPLETENESS OR FAIRNESS OF ANY SUCH UNAUTHORIZED STATEMENTS.

THE DEVELOPER HAS NO OBLIGATION TO UPDATE THIS PERIODIC REPORT OTHER THAN AS EXPRESSLY PROVIDED IN THE DISCLOSURE CERTIFICATE.

Dated: _____

[John Mourier Construction, Inc.]

By: _____

APPENDIX F

SUMMARY OF CERTAIN PROVISIONS OF FISCAL AGENT AGREEMENT

APPENDIX G

DTC AND THE BOOK-ENTRY ONLY SYSTEM

The following description of the Depository Trust Company ("DTC"), the procedures and record keeping with respect to beneficial ownership interests in the 2020 Bonds, payment of principal, interest and other payments on the 2020 Bonds (herein, the "Securities") to DTC Participants or Beneficial Owners, confirmation and transfer of beneficial ownership interest in the Securities and other related transactions by and between DTC, the DTC Participants and the Beneficial Owners is based solely on information provided by DTC. Accordingly, no representations can be made concerning these matters and neither the DTC Participants nor the Beneficial Owners should rely on the foregoing information with respect to such matters, but should instead confirm the same with DTC or the DTC Participants, as the case may be.

Neither the issuer of the Securities (the "Issuer") nor the fiscal agent appointed with respect to the Securities (the "Agent") takes any responsibility for the information contained in this Appendix.

No assurances can be given that DTC, DTC Participants or Indirect Participants will distribute to the Beneficial Owners (a) payments of interest, principal or premium, if any, with respect to the Securities, (b) certificates representing ownership interest in or other confirmation or ownership interest in the Securities, or (c) redemption or other notices sent to DTC or Cede & Co., its nominee, as the registered owner of the Securities, or that they will so do on a timely basis, or that DTC, DTC Participants or DTC Indirect Participants will act in the manner described in this Appendix. The current "Rules" applicable to DTC are on file with the Securities and Exchange Commission and the current "Procedures" of DTC to be followed in dealing with DTC Participants are on file with DTC.

1. The Depository Trust Company ("DTC") will act as securities depository for the securities (the "Securities"). The Securities will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Security certificate will be issued for each issue of the Securities, each in the aggregate principal amount of such issue, and will be deposited with DTC. If, however, the aggregate principal amount of any issue exceeds \$500 million, one certificate will be issued with respect to each \$500 million of principal amount, and an additional certificate will be issued with respect to any remaining principal amount of such issue.

2. DTC, the world's largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding

company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has a Standard & Poor's rating of AA+. The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com. *The information contained on this Internet site is not incorporated herein by reference.*

3. Purchases of Securities under the DTC system must be made by or through Direct Participants, which will receive a credit for the Securities on DTC's records. The ownership interest of each actual purchaser of each Security ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Securities are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Securities, except in the event that use of the book-entry system for the Securities is discontinued.

4. To facilitate subsequent transfers, all Securities deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Securities with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Securities; DTC's records reflect only the identity of the Direct Participants to whose accounts such Securities are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

5. Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of Securities may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Securities, such as redemptions, tenders, defaults, and proposed amendments to the Security documents. For example, Beneficial Owners of Securities may wish to ascertain that the nominee holding the Securities for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the registrar and request that copies of notices be provided directly to them.

6. Redemption notices shall be sent to DTC. If less than all of the Securities within an issue are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such issue to be redeemed.

7. Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to Securities unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to Issuer as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting

rights to those Direct Participants to whose accounts Securities are credited on the record date (identified in a listing attached to the Omnibus Proxy).

8. Redemption proceeds, distributions, and dividend payments on the Securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from Issuer or Agent, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, Agent, or Issuer, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of redemption proceeds, distributions, and dividend payments to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of Issuer or Agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

9. DTC may discontinue providing its services as depository with respect to the Securities at any time by giving reasonable notice to Issuer or Agent. Under such circumstances, in the event that a successor depository is not obtained, Security certificates are required to be printed and delivered.

10. Issuer may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, Security certificates will be printed and delivered to DTC.

11. The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that Issuer believes to be reliable, but Issuer takes no responsibility for the accuracy thereof.

\$ _____
CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1
(PUBLIC FACILITIES)
SPECIAL TAX BONDS
SERIES 2020

BOND PURCHASE AGREEMENT

_____, 2020

City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
311 Vernon Street
Roseville, California 95678

Ladies and Gentlemen:

The undersigned, Piper Sandler & Co., as underwriter (the “**Underwriter**”), acting not as a fiduciary or agent for you, but on behalf of itself, offers to enter into this Bond Purchase Agreement (this “**Purchase Agreement**”) with the City of Roseville (the “**City**”) for its Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the “**Community Facilities District**”), which upon acceptance will be binding upon the Underwriter and the City. The agreement of the Underwriter to purchase the Bonds (as hereinafter defined) is contingent upon the City satisfying all of the obligations imposed upon it under this Purchase Agreement. This offer is made subject to the City’s acceptance by the execution of this Purchase Agreement and its delivery to the Underwriter at or before 11:59 p.m., California time, on the date hereof, and, if not so accepted, will be subject to withdrawal by the Underwriter upon notice delivered to the City at any time prior to the acceptance hereof by the City. All capitalized terms used herein, which are not otherwise defined, shall have the meaning provided for such terms in the Fiscal Agent Agreement, dated as of July 1, 2019 as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the “**Fiscal Agent Agreement**”) by and between the City and The Bank of New York Mellon Trust Company, N.A., as fiscal agent (the “**Fiscal Agent**”).

1. Purchase, Sale and Delivery of the Bonds.

A. Subject to the terms and conditions and in reliance upon the representations, warranties and agreements set forth herein: the Underwriter hereby agrees to purchase from the City and the City hereby agrees to sell to the Underwriter all (but not less than all) of the \$ _____ aggregate principal amount of the City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2020 (the “**Bonds**”), dated the Closing Date (as hereinafter defined), bearing interest at the rates and maturing on the dates and in the principal amounts set forth in Appendix A hereto.

B. The purchase price for the Bonds shall be \$ _____ (being 100% of the aggregate principal amount thereof, plus net original issue premium of \$ _____, less an Underwriter’s discount of \$ _____).

The Underwriter agrees to make a bona fide initial public offering of all of the Bonds in compliance with federal and state securities laws, at a price not in excess of the initial offering prices

(or yields) set forth in Appendix A attached hereto and incorporated herein by reference. Subsequent to the initial public offering, the Underwriter reserves the right to change the public offering prices (or yields) as it deems necessary in connection with the offering of the Bonds, without any requirement of prior notice, provided that the Underwriter shall not change the interest rates set forth in Appendix A. The Bonds may be offered and sold to certain dealers at prices lower than such initial offering prices.

The Bonds shall be substantially in the form described in, shall be issued and secured under the provisions of, and shall be payable from the Special Taxes and certain other amounts as provided in the Fiscal Agent Agreement, the Preliminary Official Statement (as hereinafter defined), and the Mello-Roos Community Facilities Act of 1982, as amended, being Chapter 2.5, Part 1, Division 2, Title 5 of the Government Code of the State of California (the “**Community Facilities District Act**” or the “**Act**”). The issuance of the Bonds has been duly authorized by the City pursuant to a resolution (the “**Resolution**”), adopted by its City Council (the “**City Council**”) on behalf of the Community Facilities District, on _____, 2020. The Bonds are being issued on a parity basis with the \$12,540,000 initial principal amount of City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2019 (the “**2019 Bonds**”).

The proceeds of the Bonds shall be used to (i) construct and acquire certain public facilities of benefit to the Community Facilities District, (ii) provide for a deposit to a debt service reserve account for the Bonds, (iii) provide capitalized interest on the Bonds through [September 1, 2020], and (iv) pay costs of issuance of the Bonds.

C. The City hereby acknowledges that the Underwriter is entering into this Purchase Agreement in reliance on the representations, warranties and agreements made by the City on behalf of itself and on behalf of the Community Facilities District herein, and the City shall take all action necessary to enforce its rights hereunder for the benefit of the Underwriter and shall immediately notify the Underwriter if it becomes aware that any representation, warranty or agreement made by the City, on behalf of itself or on behalf of the Community Facilities District, herein is incorrect in any material respect.

D. The City acknowledges and agrees that: (i) the primary role of the Underwriter, as an underwriter, is to purchase securities for resale to investors in an arm’s-length commercial transaction between the City and the Underwriter and that the Underwriter has financial and other interests that differ from those of the City and the Community Facilities District; (ii) the Underwriter is not acting as a municipal advisor, financial advisor or fiduciary to the City, the Community Facilities District, or any other person or entity and has not assumed any advisory or fiduciary responsibility to the City or the Community Facilities District with respect to the transaction contemplated hereby and the discussions, undertakings and proceedings leading thereto (irrespective of whether the Underwriter has provided other services or is currently providing other services to the City or the Community Facilities District on other matters); (iii) the only obligations the Underwriter has to the City or the Community Facilities District with respect to the transaction contemplated hereby expressly are set forth in this Purchase Agreement, except as otherwise provided by applicable rules and regulations of the Securities and Exchange Commission or the rules of the Municipal Securities Rulemaking Board (the “**MSRB**”); and (iv) the City has consulted its own legal, accounting, tax, financial and other advisors, as applicable, to the extent it has deemed appropriate in connection with the transaction contemplated herein. The City acknowledges that it has previously provided the Underwriter with an acknowledgement of receipt of the required Underwriter disclosure under Rule G-17 of the MSRB and acknowledges that it has engaged Hilltop Securities Inc. (the “**Municipal Advisor**”), as its municipal advisor (as defined in Securities and

Exchange Commission Rule 15Ba1) and will rely solely on the Municipal Advisor for financial advice with respect to the Bonds.

E. Pursuant to the authorization of the City, the Underwriter has distributed copies of the Preliminary Official Statement dated _____, 2020, relating to the Bonds, which, together with the cover page, inside cover page and appendices thereto is herein called the **“Preliminary Official Statement.”** By its acceptance of this Purchase Agreement, the City hereby consents to and ratifies the use and distribution by the Underwriter of the Preliminary Official Statement, and the City agrees to execute a final official statement relating to the Bonds (the **“Official Statement”**) which will consist of the Preliminary Official Statement with such changes as may be made thereto, with the approval of Jones Hall, a Professional Corporation, Bond Counsel and Disclosure Counsel (herein called **“Bond Counsel”**), and the Underwriter, and to provide copies thereof to the Underwriter as set forth in Section 2(S) hereof. The City hereby authorizes and requires the Underwriter to use and promptly distribute, in connection with the offer and sale of the Bonds, the Preliminary Official Statement, the Official Statement and any supplement or amendment thereto. The City further authorizes the Underwriter to use and distribute, in connection with the offer and sale of the Bonds, the Fiscal Agent Agreement, this Purchase Agreement and all information contained herein, and all other documents, certificates and statements furnished by or on behalf of the City or the Community Facilities District to the Underwriter in connection with the transactions contemplated by this Purchase Agreement. The Preliminary Official Statement and/or the Official Statement may be delivered and printed in a “designated electronic format” as defined in the MSRB’s Rule G-32 and as may be agreed to by the City and the Underwriter. The City confirms that it does not object to distribution of the Preliminary Official Statement or the Official Statement in electronic form. A copy of the most recent Preliminary Official Statement sent to a potential purchaser shall be sent by first class mail or electronically (or other equally prompt means) not later than the first business day following the day upon which each such request is received.

F. To assist the Underwriter in complying with Securities and Exchange Commission Rule 15c2-12(b)(5) (the **“Rule”**), the City will undertake pursuant to the City Continuing Disclosure Certificate, in the form attached as an appendix to the Official Statement (the **“City Continuing Disclosure Certificate”**), to provide annual reports and notices of certain enumerated events. A description of this undertaking is set forth in the Preliminary Official Statement and will also be set forth in the Official Statement.

G. Except as the Underwriter and the City may otherwise agree, the City will deliver to the Underwriter, at the offices of Bond Counsel in San Francisco, California, or at such other location as may be mutually agreed upon by the Underwriter and the City, the documents hereinafter mentioned; and the City will deliver to the Underwriter through The Depository Trust Company’s (**“DTC”**) FAST delivery system, the Bonds, in definitive form (all Bonds bearing CUSIP® numbers printed thereon), duly executed by the City and authenticated by the Fiscal Agent in the manner provided for in the Fiscal Agent Agreement and the Community Facilities District Act at 8:00 a.m. California time, on _____, 2020 (the **“Closing Date”**), and the Underwriter will accept such delivery and pay the purchase price of the Bonds as set forth in paragraph (B) of this Section by wire transfer, payable in federal or other immediately available funds (such delivery and payment being herein referred to as the **“Closing”**). The Bonds shall be in fully registered book-entry form (which may be typewritten) and shall be registered in the name of Cede & Co., as nominee of DTC, which will act as securities depository for the Bonds, and the specimen Bonds will be made available for checking by the Underwriter not less than 5 days prior to the Closing.

H. Except as the City and the Underwriter may otherwise agree, the City will deliver to the Underwriter, at the offices of Bond Counsel in San Francisco, California, or at such

other location as may be mutually agreed upon by the Underwriter and the City, the documents hereinafter mentioned on the Closing Date.

2. Representations, Warranties and Covenants of the Community Facilities District. The City represents, warrants and covenants to the Underwriter, on behalf of itself and the Communities Facilities District, as the case may be, that:

A. The City is a municipal corporation duly organized and validly existing pursuant to the Constitution and laws of the State of California (the “**State**”), and has duly authorized the formation of the Community Facilities District pursuant to resolutions duly adopted by the City Council (the “**Community Facilities District Formation Resolution**” and, together with the Resolution, the “**Community Facilities District Resolutions**”) and the Act. The City Council, as the legislative body of the Community Facilities District, has duly adopted the Community Facilities District Formation Resolution, has duly adopted a Resolution and Ordinance levying the Special Taxes (for all purposes herein, as such are defined in the Fiscal Agent Agreement) within the Community Facilities District (the “**Ordinance**”), and has caused to be recorded in the real property records of Placer County, a notice of special tax lien (the “**Notice of Special Tax Lien**”) (the Community Facilities District Formation Resolution, the Ordinance, and the Notice of Special Tax Lien being collectively referred to herein as the “**Formation Documents**”), and the City Council has duly adopted the Resolution. Each of the Formation Documents remains in full force and effect as of the date hereof and has not been amended. The Community Facilities District is duly organized and validly existing as a community facilities district under the laws of the State. The City has, and at the Closing Date will have, as the case may be, full legal right, power and authority: (i) to execute, deliver and perform its obligations under this Purchase Agreement and the Fiscal Agent Agreement and to carry out all transactions contemplated by each of such agreements; (ii) to enter into the City Continuing Disclosure Certificate; and (iii) to carry out, give effect to and consummate the transactions contemplated by the Formation Documents, the Fiscal Agent Agreement, this Purchase Agreement and the Official Statement.

This Purchase Agreement, the Fiscal Agent Agreement, and the City Continuing Disclosure Certificate are collectively referred to herein as the “**City Documents**.”

B. By all necessary official action of the City, the City has duly authorized and approved the execution and delivery by the City of, and the performance by City of, the obligations on its part contained in, the City Documents and has approved the use and distribution by the Underwriter of the Preliminary Official Statement and the execution, use and distribution by the Underwriter of the Official Statement, and, as of the date hereof, such authorizations and approvals are in full force and effect and have not been amended, modified or rescinded. When executed and delivered by the parties thereto, the City Documents will constitute the legally valid and binding obligations of the City, on its own behalf and on behalf of the Communities Facilities District, enforceable upon the City and the Community Facilities District in accordance with their respective terms, except as enforcement may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws or equitable principles relating to or affecting creditors’ rights generally. To the best of the City’s knowledge, the City has complied, and will at the Closing Date be in compliance in all respects, with the terms of the City Documents that are applicable to the City, and the Community Facilities District has complied, and will at the Closing Date be in compliance in all respects, with the terms of the City Documents that are applicable to the Community Facilities District.

C. The information in the Preliminary Official Statement (other than statements pertaining to the book-entry system and under the headings “THE DISTRICT – Entitlements and Development,” as to which no view is expressed) as of its date was and as of the date hereof is, and

in the Official Statement (other than statements pertaining to the book-entry system and under the headings “THE DISTRICT – Entitlements and Development,” as to which no view is expressed) as of its date is, true and correct in all material respects and does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading; and, upon delivery and up to and including 25 days after the End of the Underwriting Period (as defined in paragraph (D) below), the Official Statement will be amended and supplemented so as to contain no misstatement of any material fact or material omission of any statement necessary to make the statements contained therein, in the light of the circumstances in which such statements were made, not misleading.

D. Up to and including 25 days after the End of the Underwriting Period (as defined below), the City will advise the Underwriter promptly of any proposal to amend or supplement the Official Statement and will not effect or consent to any such amendment or supplement without the consent of the Underwriter, which consent will not be unreasonably withheld. The City will advise the Underwriter promptly of the institution of any proceedings known to it by any governmental agency prohibiting or otherwise materially affecting the use of the Official Statement in connection with the offering, sale or distribution of the Bonds. As used herein, the term “End of the Underwriting Period” means the later of such time as: (i) the Bonds are delivered to the Underwriter; or (ii) the Underwriter does not retain, directly or as a member of an underwriting syndicate, an unsold balance of the Bonds for sale to the public. Unless the Underwriter gives notice to the contrary, the End of the Underwriting Period shall be deemed to be the Closing Date. Any notice delivered pursuant to this provision shall be written notice delivered to the City at or prior to the Closing Date and shall specify a date (other than the Closing Date) to be deemed the “End of the Underwriting Period.” If in the opinion of the Underwriter any such event or proceedings requires the preparation and distribution of a supplement or amendment to the Official Statement, the City shall prepare and furnish to the Underwriter, at the City’s expense, such number of copies of the supplement or amendment to the Official Statement, in (i) a “designated electronic format” consistent with the requirements of the MSRB’s Rule G-32 and (ii) a printed format form in substance mutually agreed upon by the City and the Underwriter as the Underwriter may reasonably request. If such amendment or supplement to the Official Statement shall be made subsequent to the Closing Date, the City also shall furnish, or cause to be furnished, such additional legal opinions, certificates, instruments and other documents as the Underwriter may reasonably deem necessary to evidence the truth and accuracy of any such supplement or amendment to the Official Statement.

E. As of the time of acceptance hereof and as of the Closing Date, the City and the Community Facilities District, as applicable, have each complied, and will at the Closing Date be in compliance in all material respects, with the Formation Documents and the City Documents, and any immaterial noncompliance by the City or the Community Facilities District, if any, will not impair the ability of the City or the Community Facilities District, as applicable, to carry out, give effect to or consummate the transactions contemplated by the foregoing. From and after the date of issuance of its Bonds, the City will continue to comply with the covenants of the City contained in the City Documents and it shall cause the Community Facilities District to continue to comply with the covenants of the Community Facilities District contained in the City Documents.

F. Except as described in the Preliminary Official Statement, neither the City nor the Community Facilities District is, and as of the Closing Date, neither will be, in any respect material to the transactions referred to herein or contemplated hereby, in breach of or in default under, any law or administrative rule or regulation of the State, the United States of America, or of any department, division, agency or instrumentality of either thereof, or under any applicable court or administrative decree or order, or under any loan agreement, note, resolution, indenture, contract, agreement or other instrument to which the City or the Community Facilities District, as the case

may be, is a party or is otherwise subject or bound; and, to the City's knowledge, no event has occurred and is continuing which, with the passage of time or the giving of notice, or both, would constitute a default or event of default under any such instrument which breach, default or event could have an adverse effect on the City's ability or the Community Facilities District's ability to perform their respective obligations under the City Documents; and as of such times, except as disclosed in the Official Statement, the authorization, execution and delivery of the City Documents and compliance with the provisions of each thereof, or the performance of the conditions precedent to be performed by the City pursuant to this Purchase Agreement, will not conflict with or constitute a breach of or default under any applicable law or administrative rule or regulation of the State, the United States of America, or of any department, division, agency or instrumentality of either thereof, or under any applicable court or administrative decree or order, or under any loan agreement, note, resolution, indenture, contract, agreement or other instrument to which the City is a party or is otherwise subject or bound, in any manner which would materially and adversely affect the performance by the City or the Community Facilities District of their respective obligations under the City Documents or the performance of the conditions precedent to be performed by the City pursuant to this Purchase Agreement. The City has received all licenses, permits or other regulatory approvals required, if any, for the pledge, collection and/or application by the Community Facilities District of the Special Taxes (as defined in the Fiscal Agent Agreement) and other moneys pledged to the payment of the principal of and interest on the Bonds under the Fiscal Agent Agreement.

G. Except as may be required under the "blue sky" or other securities laws of any jurisdiction, all approvals, consents, authorizations, elections and orders of, or filings or registrations with, any governmental authority, board, agency or commission having jurisdiction which would constitute a condition precedent to, or the absence of which would materially adversely affect, the performance by the City or the Community Facilities District of their respective obligations under the City Documents, and the performance of the conditions precedent to be performed by the City pursuant to this Purchase Agreement, have been or will be obtained at the Closing Date and are or will be in full force and effect at the Closing Date.

H. At the time of acceptance hereof there is and as of the Closing there will be no action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court, government agency, public board or body (collectively and individually, an "**Action**") pending (notice of which has been served on the City or the Community Facilities District) or to the best knowledge of the City or the Community Facilities District threatened, in which any such Action: (i) in any way questions the powers of the City Council or the existence of the Community Facilities District or the titles of the officers of the City and/or the Community Facilities District to their respective offices; (ii) affects, contests or seeks to prohibit, restrain or enjoin the issuance or delivery of the Bonds or the payment or collection of Special Taxes or any amounts pledged or to be pledged to pay the principal of and interest on the Bonds, or in any way contests or affects the validity of the City Documents or the consummation of the transactions on the part of the City or the Community Facilities District contemplated thereby; (iii) contests the exclusion of interest on the Bonds from federal or State income taxation or contests the powers of the City or the Community Facilities District which may result in any material adverse change relating to the financial condition of the City or the Community Facilities District; (iv) except as disclosed in the Official Statement, wherein an unfavorable decision, ruling or finding would materially adversely affect the financial position or condition of the City or the Community Facilities District or would result in any material adverse change in the ability of the City to pledge or apply the Special Taxes or to pay debt service on the Bonds; or (v) contests the completeness or accuracy of the Preliminary Official Statement or the Official Statement or any supplement or amendment thereto or asserts that the Preliminary Official Statement or the Official Statement contained any untrue statement of a material fact or omitted to

state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; and as of the time of acceptance hereof there is and, as of the Closing Date, there will be no known basis for any Action of the nature described in clauses (i) through (v) of this sentence.

I. The City will furnish such information, execute such instruments and take such other action in cooperation with the Underwriter and at the expense of the Underwriter as the Underwriter may reasonably request in order: (i) to qualify the Bonds for offer and sale under the “blue sky” or other securities laws and regulations of such states and other jurisdictions of the United States of America as the Underwriter may designate; and (ii) to determine the eligibility of the Bonds for investment under the laws of such states and other jurisdictions and will use its best efforts to continue such qualifications in effect so long as required for the distribution of the Bonds, provided; however, that the City will not be required to execute a special or general consent to service of process or qualify as a foreign corporation in connection with any such qualification in any jurisdiction.

J. The City Documents conform as to form and tenor to the descriptions thereof contained in the Preliminary Official Statement. The City represents that the Bonds, when issued, executed and delivered in accordance with the Fiscal Agent Agreement and sold to the Underwriter as provided herein, will be validly issued and outstanding obligations of the City, entitled to the benefits of the Fiscal Agent Agreement. The City and the Community Facilities District will each comply with the covenant in the Fiscal Agent Agreement to cause the Special Taxes to be levied and collected at the same time and in the same manner as ordinary *ad valorem* property taxes. The Fiscal Agent Agreement creates a valid pledge of, first lien upon and security interest in, the Special Taxes, and in the moneys in the Special Tax Fund established pursuant to the Fiscal Agent Agreement, on the terms and conditions set forth in the Fiscal Agent Agreement. The Fiscal Agent Agreement creates a valid pledge of the moneys in certain funds and accounts established pursuant to the Fiscal Agent Agreement, subject in all cases to the provisions of the Fiscal Agent Agreement permitting the application thereof for the purposes and on the terms and conditions set forth therein.

K. Except as disclosed in the Preliminary Official Statement, there are, to the best of the City’s knowledge, no entities with outstanding assessment liens against any of the properties within the Community Facilities District which are senior to or on a parity with the Special Taxes.

L. The issuance and sale of the Bonds is not subject to any transfer or other documentary stamp taxes of the State or any political subdivision thereof.

M. The City shall not knowingly take or omit to take any action that, under existing law, may adversely affect the exclusion from gross income for federal income tax purposes, or the exemption from State of California personal income tax, of the interest on the Bonds. The City has not been notified of any listing or proposed listing by the Internal Revenue Service to the effect that the City is a bond issuer whose arbitrage certifications may not be relied upon.

N. Any certificate signed on behalf of the Community Facilities District by any officer or employee of the City authorized to do so and delivered to the Underwriter in connection with the issuance and sale of the Bonds shall be deemed to be a representation and covenant by the Community Facilities District to the Underwriter as to the statements made therein.

O. The City will apply the proceeds of the Bonds in accordance with the Fiscal Agent Agreement and as described in the Official Statement.

P. At or prior to the Closing, the City will have duly authorized, executed and delivered the City Continuing Disclosure Certificate. Based on a review of previous undertakings, the Preliminary Official Statement and the Official Statement describe the instances in which the City has failed to comply with any previous undertakings with regard to the Rule to provide annual reports or notices of enumerated events in the last five years.

Q. Between the date of this Purchase Agreement and the date of Closing, the City will not offer or issue any bonds, notes or other obligations for borrowed money not previously disclosed to the Underwriter and the City shall not create, assume or guarantee any indebtedness payable from, or pledge or otherwise encumber, the Special Taxes or other assets, properties, funds or interests that will be pledged as security for the Bonds pursuant to the City Documents.

R. Until such time as moneys have been set aside in an amount sufficient to pay all then outstanding Bonds at maturity or to the date of redemption if redeemed prior to maturity, plus unpaid interest thereon and premium, if any, to maturity or to the date of redemption if redeemed prior to maturity, the City will faithfully perform and abide by all of the covenants, undertakings and provisions contained in the Fiscal Agent Agreement.

S. The Preliminary Official Statement was deemed final by a duly authorized officer of the City prior to its delivery to the Underwriter, except for the omission of such information as is permitted to be omitted in accordance with paragraph (b)(1) of the Rule. The City hereby covenants and agrees that, within seven (7) business days from the date hereof, or upon reasonable written notice from the Underwriter within sufficient time to accompany any confirmation requesting payment from any customers of the Underwriter, the City shall cause a final electronic and/or printed form of the Official Statement as set forth in Section 1 above to be delivered to the Underwriter in sufficient quantity to comply with paragraph (b)(4) of the Rule and Rules G-12, G-15, G-32 and G-36 of the Municipal Securities Rulemaking Board.

T. The City hereby approves the preparation and distribution of the Official Statement, consisting of the Preliminary Official Statement with such changes as are noted thereon and as may be made thereto, with the approval of Bond Counsel and the Underwriter from time to time prior to the Closing Date.

U. The issuance of the Bonds complies with the City's "Local Agency Goals and Policies for Community Facilities Districts," pursuant to Section 53312.7 of the Act.

V. The City hereby ratifies any prior use of and authorizes the future use by the Underwriter, in connection with the offering and sale of the Bonds, of the Preliminary Official Statement, the Official Statement, this Purchase Agreement and all information contained herein, and all other documents, certificates and written statements furnished by the City to the Underwriter in connection with the transactions contemplated by this Purchase Agreement.

The execution and delivery of this Purchase Agreement by the City shall constitute a representation by the City to the Underwriter that the representations and warranties contained in this Section 2 with respect to the City and the Community Facilities District are true as of the date hereof.

3. Conditions to the Obligations of the Underwriter. The obligation of the Underwriter to accept delivery of and pay for the Bonds on the Closing Date shall be subject, at the option of the Underwriter, to the accuracy in all material respects of the representations and warranties on the part of the City, on its own behalf and on behalf of the Community Facilities District, contained herein, to the accuracy in all material respects of the statements of the officers and other officials of the City

and the Community Facilities District made in any certificates or other documents furnished pursuant to the provisions hereof, to the performance by the City and the Community Facilities District of their obligations to be performed hereunder at or prior to the Closing Date and, to the following additional conditions:

A. At the Closing Date, the Community Facilities District Resolutions, the Formation Documents, and the City Documents shall be in full force and effect, and shall not have been amended, modified or supplemented, except as may have been agreed to in writing by the Underwriter, and there shall have been taken in connection therewith, with the issuance of the Bonds, and with the transactions contemplated thereby, and by this Purchase Agreement, all such actions as, in the opinion of Bond Counsel, shall be necessary and appropriate.

B. At the Closing Date, except as was described in the Preliminary Official Statement, neither the City nor the Community Facilities District shall be, in any respect material to the Bonds, the City Documents or the transactions referred to herein or contemplated hereby, in breach of or in default under, any law or administrative rule or regulation of the State, the United States of America, or of any department, division, agency or instrumentality of either thereof, or under any applicable court or administrative decree or order, or under any loan agreement, note, resolution, indenture, contract, agreement or other instrument to which the City or the Community Facilities District, respectively, is a party or is otherwise subject or bound, and the performance by the City or the Community Facilities District, respectively, of its obligations under the Bonds, the City Documents, the Community Facilities District Resolutions, this Purchase Agreement and any other instruments contemplated by any of such documents, and compliance with the provisions of each thereof, will not conflict with or constitute a breach of or default under any applicable law or administrative rule or regulation of the State, the United States of America or of any department, division, agency or instrumentality of either thereof or under any applicable court or administrative decree or order or under any loan agreement, note, resolution, indenture, contract, agreement or other instrument to which the City or the Community Facilities District, respectively, is a party or is otherwise subject or bound, in any manner which would materially and adversely affect the performance by the City or the Community Facilities District, respectively, of its obligations under the City Documents, the Bonds or the Community Facilities District Resolutions.

C. The information contained in the Official Statement is, as of the Closing Date and as of the date of any supplement or amendment thereto pursuant hereto, true and correct in all material respects and does not, as of the Closing Date or as of the date of any supplement or amendment thereto, contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

D. The Underwriter shall have the right to cancel its obligation to purchase the Bonds and to terminate this Purchase Agreement by written notice to the City if, between the date of this Purchase Agreement and the Closing Date, in the Underwriter's sole and reasonable judgment any of the following events shall occur (each a "**Termination Event**"):

1. Between the date hereof and the Closing Date, the market price or marketability, at the initial offering prices set forth on the cover page of the Official Statement, of the Bonds, or the ability of the Underwriter to enforce contracts for the sale of the Bonds, shall have been materially adversely affected, in the judgment of the Underwriter (evidenced by a written notice to the City terminating the obligation of the Underwriter to accept delivery of and pay for the Bonds), by reason of any of the following:

a. Legislation introduced in or enacted (or resolution passed) by the Congress of the United States of America or the legislature of the State or recommended to the Congress by the President of the United States of America or a member of the President's Cabinet, the Department of the Treasury, the Internal Revenue Service or any member of Congress or favorably reported for passage to either House of Congress by any committee of such House to which such legislation had been referred for consideration, or a decision rendered by a court established under Article III of the Constitution of the United States of America or by the Tax Court of the United States of America, or an order, ruling, regulation (final, temporary or proposed), press release or other form of notice issued or made by or on behalf of the Treasury Department of the United States of America, the Internal Revenue Service or other federal or State authority with appropriate jurisdiction, with the purpose or effect, directly or indirectly, of imposing federal or State income taxation upon such interest as would be received by any owners of the Bonds beyond the extent to which such interest is subject to taxation as of the date hereof;

b. Legislation introduced in or enacted (or resolution passed) by the Congress, or shall have been favorably reported out of committee or be pending in committee, or shall have been recommended to the Congress for passage by the President of the United States of America or a member of the President's Cabinet, or an order, decree, injunction or decision issued by any court of competent jurisdiction, or an order, ruling, regulation (final, temporary or proposed), press release, statement or other form of notice issued or made by or on behalf of the Securities and Exchange Commission, or any other governmental agency having jurisdiction of the subject matter, to the effect that obligations of the general character of the Bonds, the Resolution or the City Documents, are not exempt from registration under or other requirements of the Securities Act of 1933, as amended, or that the Fiscal Agent Agreement is not exempt from qualification under or other requirements of the Trust Indenture Act of 1939, as amended, or that the issuance, offering or sale of obligations of the general character of the Bonds, as contemplated hereby or by the Official Statement or otherwise, is or would be in violation of the federal securities laws as amended and then in effect;

c. A general suspension of trading in securities on the New York Stock Exchange or other major exchange shall be in force, or minimum or maximum prices for trading shall have been fixed and be in force, or maximum ranges for prices for securities shall have been required and be in force on any such exchange, whether by virtue of determination by that exchange or by order of the Securities and Exchange Commission or any other governmental authority having jurisdiction;

d. There shall have occurred (1) an outbreak or escalation of hostilities or the declaration by the United States of a national emergency or war or (2) any other calamity or crisis in the financial markets of the United States or elsewhere or the escalation of such calamity or crisis;

e. Except as disclosed in or contemplated by the Official Statement, any material adverse change in the affairs of the City or the Community Facilities District shall have occurred;

2. The introduction, proposal or enactment of any amendment to the federal or California Constitution or any action by any federal or State court, legislative body, regulatory body or other authority materially adversely affecting the tax status of the City or the Community Facilities District, their property, income, securities (or interest thereon), the validity or enforceability of Special Taxes;

3. Any event occurring or information becoming known which, in the judgment of the Underwriter, makes untrue or incorrect in any material respect any statement or information contained in the Preliminary Official Statement or in the Official Statement or has the effect that the Preliminary Official Statement or the Official Statement contains any untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading;

4. A general banking moratorium shall have been declared by federal, State of New York or State of California officials authorized to do so or a material disruption in securities settlement, payment or clearance services affecting the Bonds shall have occurred;

5. Any new restriction on transactions in securities materially affecting the market for securities (including the imposition of any limitation in interest rates) or the extension of credit by, or a charge to the net capital requirements of, underwriters shall have been established by the New York Stock Exchange, the Comptroller of the Currency, the Securities and Exchange Commission or any other federal or State agency or the Congress of the United States of America, or by Executive Order;

6. A decision by a court of the United States of America shall be rendered, or a stop order, release, regulation or no-action letter by or on behalf of the Securities and Exchange Commission or any other governmental agency having jurisdiction of the subject matter shall have been issued or made, to the effect that the issuance, offering or sale of the Bonds as contemplated by this Purchase Agreement or by the Official Statement, or any document relating to the issuance, offering or sale of the Bonds is or would be in violation of any provision of the federal securities laws at the Closing Date, including the Securities Act of 1933, the Securities Exchange Act of 1934 and the Trust Indenture Act of 1939;

7. Any proceeding shall have been commenced or be threatened in writing by the Securities and Exchange Commission against the City or the Community Facilities District.

8. The commencement of an Action described in Section 2(H).

Upon the occurrence of a Termination Event and the termination of this Purchase Agreement by the Underwriter, all obligations of the City, the Community Facilities District, and the Underwriter under this Agreement shall terminate, without further liability, except that the City and the Underwriter shall pay their respective expenses as set forth in Section 6 below.

E. At or prior to the Closing Date, the Underwriter shall have received a counterpart original or certified copy of the following documents, in each case satisfactory in form and substance to the Underwriter:

1. Official Statement. The Official Statement and each supplement or amendment, if any thereto, executed by an authorized officer of the City;

2. Fiscal Agent Agreement. The Fiscal Agent Agreement, duly executed and delivered by the City and the Fiscal Agent;

3. Resolutions. Certifications by the City Clerk with respect to each resolution and ordinance of the City Council, for the City or as the legislative body of the

Community Facilities District, relating to the City Documents, the transactions contemplated thereby, formation of the Community Facilities District and issuance of the Bonds;

4. City Continuing Disclosure Certificate. The City Continuing Disclosure Certificate executed and delivered by the City;

5. Bond Counsel Opinion. An unqualified approving opinion for the Bonds, dated the Closing Date and addressed to the City, of Bond Counsel, to the effect that the Bonds are the valid, legal and binding obligations of the City and that the interest thereon is excluded from gross income for federal income tax purposes and exempt from personal income taxes of the State, in substantially the form included as Appendix D to the Official Statement, together with a letter of Bond Counsel, dated the Closing Date and addressed to the Underwriter, to the effect that such opinion addressed to the City may be relied upon by the Underwriter to the same extent as if such opinion was addressed to it;

6. Supplemental Opinion. A supplemental opinion or opinions, dated the Closing Date and addressed to the Underwriter, of Bond Counsel, to the effect that:

(i) this Purchase Agreement has been duly authorized, executed and delivered by the City and, assuming due authorization, execution and delivery by the other parties thereto, constitutes the legal, valid and binding agreement of the City and is enforceable in accordance with its terms, except to the extent that enforceability may be limited by moratorium, bankruptcy, reorganization, insolvency or other similar laws affecting creditors' rights generally or by the exercise of judicial discretion in accordance with general principles of equity or otherwise in appropriate cases and by limitations on legal remedies against public agencies in the State;

(ii) the Bonds are not subject to the registration requirements of the Securities Act of 1933, as amended, and the Fiscal Agent Agreement is exempt from qualification under the Trust Indenture Act of 1939, as amended;

(iii) the information contained in the Official Statement on the cover and under the captions "THE BONDS" (other than by reference Appendix G – THE BOOK ENTRY SYSTEM), "SECURITY AND SOURCES OF PAYMENT FOR THE BONDS," "LEGAL OPINION," "TAX MATTERS" and in Appendices D and F to the Official Statement (excluding any financial, statistical and economic data, forecasts, numbers, charts, graphs, estimates, projections, and assumptions and any information regarding The Depository Trust Company and the book-entry system as to which Bond Counsel need express no opinion or view, and further, excluding any material that may be treated as included under such captions by cross-reference), are accurate insofar as such statements purport to summarize certain provisions of the Bonds, the Fiscal Agent Agreement, Bond Counsel's final approving opinion and the Community Facilities District Act; and

(iv) the Community Facilities District has been duly formed, and the Special Taxes have been duly and validly levied in accordance with the provisions of the Act and, except to the extent prohibited by moratorium, bankruptcy, reorganization, fraudulent conveyance or transfer, insolvency or other similar laws affecting creditors' rights generally, a lien to secure payment of the Special Taxes has been imposed on taxable property in the Community Facilities District;

7. City Attorney Opinion. An opinion, dated the Closing Date and addressed to the Underwriter, of the City Attorney to the City and counsel to the Community Facilities District, substantially in the form of Appendix B hereto;

8. Closing Certificate of the City. A certificate, dated the Closing Date, and signed by an authorized officer of the City substantially in the form of Appendix C hereto, together with such additional certifications as Bond Counsel may require;

9. Bank Incumbency Certificate. Certified copies of the general resolution of the Fiscal Agent authorizing the execution and delivery of certain documents by certain officers of the Fiscal Agent, which resolution authorizes the execution of the Fiscal Agent Agreement and the authentication of the Bonds;

10. Fiscal Agent's Certificate. A certificate of the Fiscal Agent, dated the Closing Date, in form and substance acceptable to the Underwriter and its counsel, substantially in the form of Appendix D hereto;

11. Fiscal Agent's Counsel Opinion. An opinion of counsel to the Fiscal Agent, dated the Closing Date, addressed to the Underwriter and the City, substantially in the form of Appendix E hereto;

12. Disclosure Counsel Opinion. An opinion, dated the Closing Date and addressed to the Underwriter and to the City, of Jones Hall, a Professional Corporation, as disclosure counsel ("**Disclosure Counsel**"), in form and substance acceptable to the Underwriter;

13. Opinion of Underwriter's Counsel. An opinion of Kutak Rock LLP, counsel to the Underwriter, dated the date of the Closing, addressed to the Underwriter, in form and substance acceptable to the Underwriter;

14. Special Tax Consultant Certificate. A certificate, dated the Closing Date from Willdan Financial Services substantially in the form attached as Appendix F hereto;

15. Transcript. A transcript of all proceedings relating to the authorization, issuance, sale and delivery of the Bonds, including certified copies of the Fiscal Agent Agreement and all resolutions of the City and the Community Facilities District relating thereto;

16. Nonarbitrage Certificate. A certificate of the City, dated the Closing Date, in a form acceptable to Bond Counsel and the Underwriter, that the Bonds are not arbitrage bonds within the meaning of Section 148 of the Internal Revenue Code of 1986, as amended;

17. Specimen Bonds. Copies of the Specimen Bonds;

18. Issue Price Certificate. An issue price certificate of the Underwriter in the form attached as Appendix K hereto;

19. Certificate of Underwriter. A certificate from the Underwriter to the City, in form satisfactory to the City and signed by an authorized officer of the Underwriter, accepting delivery of the Bonds to the Underwriter and receipt of all documents required by the Underwriter, and the satisfaction or waiver of all conditions and terms of this Purchase Agreement by the City, and confirming to the City that as of the Closing Date, all of the representations of the

Underwriter contained in this Purchase Agreement are true, complete and correct in all material respects;

20. Form 8038-G. An Information Return for Tax-Exempt Bond Issues (Internal Revenue Service Form 8038-G), in a form satisfactory to Bond Counsel for filing, executed by a duly authorized officer of the City, together with evidence that such Form 8038-G has been mailed;

21. CDIAC Statements. Copies of filings with the California Debt and Investment Advisory Commission relating to the issuance of the Bonds;

22. Letter of Representations. A copy of the Blanket Letter of Representations to DTC relating to the Bonds signed by the City;

23. Certificate Regarding Preliminary Official Statement. Prior to and in connection with printing and distribution of the Preliminary Official Statement, (i) an executed certificate of the City, and (ii) an executed certificate of John Mourier Construction, Inc. (“**JMC Homes**” or the “**Property Owner**”) in the form under Appendix G hereto.

24. Property Owner Continuing Disclosure Certificate. An executed copy of the Property Owner Continuing Disclosure Certificate from JMC Homes in the form included as an appendix to the Official Statement.

25. Property Owner Bring-Down Certificate. An executed bring-down certificate from JMC Homes, dated as of the Closing Date, in forms and substance as set forth in Appendix H hereto.

26. Property Owner Counsel Opinion. The opinion of counsel to JMC Homes in the form attached under Appendix I hereto, addressed to the City and the Underwriter.

27. Appraiser Closing Certificate. A certificate in form and substance as set forth in Appendix J hereto of Integra Realty Resources, the appraiser of the property within the Community Facilities District, dated as of the Closing Date.

28. Parity Bonds Certificate. A certificate in form and substance required pursuant to the Fiscal Agent Agreement regarding the issuance of the Bonds as Additional Bonds on a parity with the 2019 Bonds.

29. Additional Documents. Such additional legal opinions, certificates, instruments and other documents as the Underwriter may reasonably request to evidence the truth and accuracy, as of the date hereof and as of the Closing Date, of the material representations and warranties of the City, on its own behalf and on behalf of the Community Facilities District, contained herein, and of the statements and information contained in the Official Statement and the due performance or satisfaction by the City at or prior to the Closing of all agreements then to be performed and all conditions then to be satisfied by the City and the Community Facilities District in connection with the transactions contemplated hereby and by the Fiscal Agent Agreement and the Official Statement.

If the City shall be unable to satisfy the conditions to the obligations of the Underwriter to purchase, accept delivery of and pay for the Bonds contained in this Purchase Agreement, or if the obligations of the Underwriter to purchase, accept delivery of and pay for the Bonds shall be

terminated for any reason permitted by this Purchase Agreement, this Purchase Agreement shall terminate and neither the City nor the Underwriter shall be under any further obligation hereunder, except that the respective obligations of the Underwriter and the City set forth in Section 6 hereof shall continue in full force and effect.

4. Representations and Agreements of the Underwriter. The Underwriter represents to and agrees with the City that, as of the date hereof and as of the date of the Closing:

A. The Underwriter is duly authorized to execute and deliver this Purchase Agreement and to take any action under the Purchase Agreement required to be taken by it.

B. The Underwriter is in compliance with MSRB Rule G-37 with respect to the City and the Community Facilities District, and is not prohibited thereby from acting as underwriter with respect to securities of the City and the Community Facilities District. The Underwriter is in compliance with MSRB Rule G-17 with respect to the City and the Community Facilities District.

C. The Underwriter has, and has had, no financial advisory relationship with the City or the Community Facilities District with respect to the Bonds, and no investment firm controlling, controlled by or under common control with the Underwriter has or has had any such financial advisory relationship, within the meaning of California Government Code Section 53590, or otherwise.

D. The Underwriter has not paid or agreed to pay, nor will it pay or agree to pay, any entity, company, firm or person (including, but not limited to, the City's financial consultants, or any officer, agent or employee thereof), other than a bona fide officer, agent or employee working for the Underwriter, any compensation, fee, gift or other consideration contingent upon or resulting from the award of or entering into this Purchase Agreement.

E. The Underwriter has reasonably determined that the City's undertaking in the City Continuing Disclosure Certificate to provide continuing disclosure with respect to the Bonds is sufficient to effect compliance with the Rule.

5. Establishment of Issue Price.

A. The Underwriter agrees to assist the City in establishing the issue price of the Bonds and shall execute and deliver to the City at Closing an "issue price" or similar certificate, together with the supporting pricing wires or equivalent communications, substantially in the form attached hereto as Appendix K, with such modifications as may be appropriate or necessary, in the reasonable judgment of the Underwriter, the City and Bond Counsel, to accurately reflect, as applicable, the sales price or prices or the initial offering price or prices to the public of the Bonds.

B. Except as otherwise set forth in Appendix A attached hereto, the City will treat the first price at which 10% of each maturity of the Bonds (the "**10% test**") is sold to the public as the issue price of that maturity. At or promptly after the execution of this Purchase Agreement, the Underwriter shall report to the City the price or prices at which it has sold to the public each maturity of Bonds. If at that time the 10% test has not been satisfied as to any maturity of the Bonds, the Underwriter agrees to promptly report to the City the prices at which it sells the unsold Bonds of that maturity to the public. That reporting obligation shall continue, whether or not the Closing Date has occurred, until either (i) the Underwriter has sold all Bonds of that maturity or (ii) the 10% test has been satisfied as to the Bonds of that maturity, provided that, the Underwriter's reporting obligation after the Closing Date may be at reasonable periodic intervals or otherwise upon request of the City

or Bond Counsel. For purposes of this Section, if Bonds mature on the same date but have different interest rates, each separate CUSIP number within that maturity will be treated as a separate maturity of the Bonds.

C. The Underwriter confirms that it has offered the Bonds to the public on or before the date of this Purchase Agreement at the offering price or prices (the “**initial offering price**”), or at the corresponding yield or yields, set forth in Appendix A attached hereto, except as otherwise set forth therein. Appendix A also sets forth, as of the date of this Purchase Agreement, the maturities, if any, of the Bonds for which the Underwriter represents that (i) the 10% test has been satisfied (assuming orders are confirmed by the close of the business day immediately following the date of this Purchase Agreement) and (ii) the 10% test has not been satisfied and for which the City and the Underwriter agree that the restrictions set forth in the next sentence shall apply, which will allow the City to treat the initial offering price to the public of each such maturity as of the sale date as the issue price of that maturity (the “**hold-the-offering-price rule**”). So long as the hold-the-offering-price rule remains applicable to any maturity of the Bonds, the Underwriter will neither offer nor sell unsold Bonds of that maturity to any person at a price that is higher than the initial offering price to the public during the period starting on the sale date and ending on the earlier of the following:

- a. the close of the fifth (5th) business day after the sale date; or
- b. the date on which the Underwriter has sold at least 10% of that maturity of the Bonds to the public at a price that is no higher than the initial offering price to the public.

The Underwriter will advise the City promptly after the close of the fifth (5th) business day after the sale date whether it has sold 10% of that maturity of the Bonds to the public at a price that is no higher than the initial offering price to the public.

D. The Underwriter confirms that:

(i) any selling group agreement and any third-party distribution agreement relating to the initial sale of the Bonds to the public, together with the related pricing wires, contains or will contain language obligating each dealer who is a member of the selling group and each broker-dealer that is a party to such third-party distribution agreement, as applicable:

(A)(i) to report the prices at which it sells to the public the unsold Bonds of each maturity allocated to it, whether or not the Closing Date has occurred, until either all Bonds of that maturity allocated to it have been sold or it is notified by the Underwriter that the 10% test has been satisfied as to the Bonds of that maturity, provided that, the reporting obligation after the Closing Date may be at reasonable periodic intervals or otherwise upon request of the Underwriter and (ii) to comply with the hold-the-offering-price rule, if applicable, if and for so long as directed by the Underwriter,

(B) to promptly notify the Underwriter of any sales of Bonds that, to its knowledge, are made to a purchaser who is a related party to an underwriter participating in the initial sale of the Bonds to the public (each such term being used as defined below), and

(C) to acknowledge that, unless otherwise advised by the dealer or broker-dealer, the Underwriter shall assume that each order submitted by the dealer or broker-dealer is a sale to the public.

(ii) any selling group agreement relating to the initial sale of the Bonds to the public, together with the related pricing wires, contains or will contain language obligating each dealer that is a party to a third-party distribution agreement to be employed in connection with the initial sale of the Bonds to the public to require each broker-dealer that is a party to such third-party distribution agreement to (A) report the prices at which it sells to the public the unsold Bonds of each maturity allocated to it, whether or not the Closing Date has occurred, until either all Bonds of that maturity allocated to it have been sold or it is notified by the Underwriter or the dealer that the 10% test has been satisfied as to the Bonds of that maturity, provided that, the reporting obligation after the Closing Date may be at reasonable periodic intervals or otherwise upon request of the Underwriter or the dealer, and (B) comply with the hold-the-offering-price rule, if applicable, if and for so long as directed by the Underwriter or the dealer and as set forth in the related pricing wires.

E. The City acknowledges that, in making the representation set forth in this section, the Underwriter will rely on (i) in the event a selling group has been created in connection with the initial sale of the Bonds to the public, the agreement of each dealer who is a member of the selling group to comply with the requirements for establishing issue price of the Bonds, including, but not limited to, its agreement to comply with the hold-the-offering-price rule, if applicable to the Bonds, as set forth in a selling group agreement and the related pricing wires, and (ii) in the event that a third-party distribution agreement was employed in connection with the initial sale of the Bonds to the public, the agreement of each broker-dealer that is a party to such agreement to comply with the requirements for establishing issue price of the Bonds, including, but not limited to, its agreement to comply with the hold-the-offering-price rule, if applicable to the Bonds, as set forth in the third-party distribution agreement and the related pricing wires. The City further acknowledges that the Underwriter shall not be liable for the failure of any dealer who is a member of a selling group, or of any broker-dealer that is a party to a third-party distribution agreement, to comply with its corresponding agreement to comply with the requirements for establishing issue price of the Bonds, including, but not limited to, its agreement to comply with the hold-the-offering-price rule, if applicable to the Bonds.

F. The Underwriter acknowledges that sales of any Bonds to any person that is a related party to an underwriter participating in the initial sale of the Bonds to the public (each such term being used as defined below) shall not constitute sales to the public for purposes of this section. Further, for purposes of this section:

a. “public” means any person other than an underwriter or a related party;

b. “underwriter” means (A) any person that agrees pursuant to a written contract with the City (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Bonds to the public and (B) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (A) to participate in the initial sale of the Bonds to the public (including a member of a selling group or a party to a third-party distribution agreement participating in the initial sale of the Bonds to the public);

c. a purchaser of any of the Bonds is a “related party” to an underwriter if the underwriter and the purchaser are subject, directly or indirectly, to (A) more than 50% common ownership of the voting power or the total value of their stock, if both entities are corporations (including direct ownership by one corporation of another), (B) more than 50% common ownership of their capital interests or profits interests, if both entities are partnerships (including direct ownership by one partnership of another), or (C) more than

50% common ownership of the value of the outstanding stock of the corporation or the capital interests or profit interests of the partnership, as applicable, if one entity is a corporation and the other entity is a partnership (including direct ownership of the applicable stock or interests by one entity of the other); and

d. “sale date” means the date of execution of this Purchase Agreement by all parties.

6. Expenses.

A. Whether or not the Underwriter accepts delivery of and pays for the Bonds as set forth herein, it shall be under no obligation to pay, and the City shall pay out of the proceeds of the Bonds or any other legally available funds of the City, all expenses incidental to the performance of the City’s obligations hereunder, including but not limited to the cost of printing and delivering the Bonds to the Underwriter; the costs of printing and shipping the Preliminary Official Statement and the Official Statement; the fees and disbursements of the City, the Community Facilities District, the Fiscal Agent, Bond Counsel, Disclosure Counsel, accountants and any other experts or consultants retained by the City or the Community Facilities District in connection with the issuance and sale of the Bonds; and any other expenses not specifically enumerated in paragraph (B) of this Section incurred in connection with the issuance and sale of the Bonds.

B. Whether or not the Bonds are delivered to the Underwriter as set forth herein, the City shall be under no obligation to pay, and the Underwriter shall be responsible for and pay, CUSIP® and CDIAF fees and expenses to qualify the Bonds for sale under any “blue sky” laws; and all other expenses incurred by the Underwriter in connection with its public offering and distribution of the Bonds not specifically enumerated in paragraph (A) of this Section, including the fees and disbursements of its counsel.

7. Undertakings of the City. The City agrees: (a) to inform the Underwriter, from time to time, upon the reasonable request of the Underwriter, of the amount then on deposit in the Reserve Fund and all accounts thereunder; and (b) to make available to the Underwriter, upon reasonable request of the Underwriter, at the expense of the City, sufficient copies of its audited financial statements, if any, and any resolutions of its legislative body with respect to the Community Facilities District Resolutions, the Bonds, the Fiscal Agent Agreement, the Official Statement, any amendments or supplements thereto, and other documents relating to the Bonds and pertaining to the City or the Community Facilities District adopted or executed, as the case may be, after the Closing Date, to the extent that such documents are publicly available.

8. Notices. Any notice of other communication to be given to the City under this Purchase Agreement may be given by delivering the same in writing to the City of Roseville, 311 Vernon Street, Roseville, California 95678, Attention: Finance Director; any notice or other communication to be given to the Underwriter under this Purchase Agreement may be given by delivering the same in writing to Piper Sandler & Co., 2321 Rosecrans Ave., Suite 3200, El Segundo, California 90245 Attention: Public Finance. All such notices, requests or other communications may be made by telephone, personal or courier delivery, registered or certified mail, facsimile transmission or electronic communication, provided that delivery by facsimile transmission or electronic communication must be confirmed by the sender. The City and the Underwriter may, by notice given as aforesaid, specify a different address for any such notices, requests or other communications.

9. Parties In Interest. This Purchase Agreement is made solely for the benefit of the City and the Underwriter (including any successors or assignees of the Underwriter) and no other person shall acquire or have any right hereunder or by virtue hereof. The City and the Underwriter may not assign this Agreement. The term “successor” shall not include any holder of any Bonds merely by virtue of such holding.

10. Survival of Representations and Warranties. The representations and warranties of the City under this Purchase Agreement shall not be deemed to have been discharged, satisfied or otherwise rendered void by reason of the Closing and regardless of any investigations made by or on behalf of the Underwriter (or statements as to the results of such investigations) concerning such representations and statements of the City or the Community Facilities District and regardless of delivery of and payment for the Bonds.

11. Severability. If any provision of this Purchase Agreement is, or is held or deemed to be, invalid, inoperative or unenforceable as applied in any particular case in any jurisdiction or jurisdictions, because it conflicts with any provisions of any constitution, statute, rule of public policy or for any other reason, such circumstances shall not make the provision in question invalid, inoperative or unenforceable in any other case or circumstance, or make any other provision or provisions of this Agreement invalid, inoperative or unenforceable to any extent whatsoever.

12. Execution in Counterparts. This Purchase Agreement may be executed by the parties hereto in separate counterparts, each of which when so executed and delivered shall be an original, but all such counterparts shall together constitute but one and the same instrument.

13. Effective. This Purchase Agreement shall become effective and binding upon the respective parties hereto upon the execution of the acceptance hereof by the City and shall be valid and enforceable as of the time of such acceptance.

14. No Prior Agreements. This Purchase Agreement supersedes and replaces all prior negotiations, agreements and understanding between the parties hereto in relation to the sale of the Bonds by the City.

15. Governing Law. This Purchase Agreement shall be governed by the laws of the State.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

16. Effective Date. This Purchase Agreement shall become effective and binding upon the respective parties hereto upon the execution of the acceptance hereof by the City and shall be valid and enforceable as of the time of such acceptance.

Very truly yours,
PIPER SANDLER & CO.

By: _____
Its: Authorized Officer

The foregoing is hereby agreed to and
accepted as of the date first above written:

CITY OF ROSEVILLE

By: _____
Authorized Representative

Time of Execution: _____ p.m. California time

**[EXECUTION PAGE OF BOND PURCHASE AGREEMENT – CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC
FACILITIES) SPECIAL TAX BONDS, SERIES 2020]**

APPENDIX A

\$ _____
CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1
(PUBLIC FACILITIES)
SPECIAL TAX BONDS
SERIES 2020

MATURITY SCHEDULE

<u>Maturity (September 1)</u>	<u>Principal Amount</u>	<u>Interest Rate</u>	<u>Yield</u>	<u>Price</u>	<u>10% Test Satisfied*</u>	<u>10% Test Not Satisfied</u>	<u>Subject to Hold-The- Offering- Price Rule (marked if used)</u>
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
2031							
2032							
2033							
2034							
2035							
2036							
2037							
2038							
20__ ^(T)							
20__ ^(T)							

^(T) Term Bond.

^(C) Priced to optional call at [par] on September 1, 20__.

* At the time of execution of this Purchase Agreement and assuming orders are confirmed by the close of the business day immediately following the date of this Purchase Agreement.

APPENDIX B

OPINION OF CITY ATTORNEY

_____, 2020

Piper Sandler & Co.
2321 Rosecrans Ave., Suite 3200
El Segundo, California 90245
Attention: Public Finance

City of Roseville
Villages at Sierra Vista Community Facilities
District No. 1
(Public Facilities)
311 Vernon Street
Roseville, California 95678

Re: City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2020

Ladies and Gentlemen:

We have acted as City Attorney for the City of Roseville (the “City”) and counsel for the Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the “Community Facilities District”), in connection with the purchase and sale of the City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2020 (the “Bonds”). As such Counsel, we have reviewed the Bond Purchase Agreement, dated _____, 2020 (the “Purchase Agreement”), by and between Piper Sandler & Co. (the “Underwriter”) and the City, the Fiscal Agent Agreement, dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the “Fiscal Agent Agreement”) by and between the City and The Bank of New York Mellon Trust Company, N.A., as fiscal agent (the “Fiscal Agent”), the City Continuing Disclosure Certificate, dated _____, 2020, by and between the Fiscal Agent and the City (the “City Continuing Disclosure Certificate”), the Preliminary Official Statement, dated _____, 2020, relating to the Bonds (the “Preliminary Official Statement”), the Official Statement, dated _____, 2020, relating to the Bonds (the “Official Statement”), Resolution No. _____ adopted by the City Council of the City on _____, 2020 (“Bond Resolution”), and such other documents, certificates, records and papers as we have deemed necessary to render the below opinions.

The Bonds, Fiscal Agent Agreement, Purchase Agreement, and the City Continuing Disclosure Certificate, are collectively referred to herein as the “Bond Documents.” Capitalized terms used herein and not otherwise defined shall have the meanings assigned to them in the Purchase Agreement.

With your permission we have assumed, without undertaking to verify the same by independent investigation, the following: (a) the authenticity of original documents and the genuineness of all signatures (other than those of the City and the Community Facilities District); (b) the conformity to the originals of all documents submitted to us as copies; (c) the truth, accuracy, and completeness of the information, representations, and warranties contained in these documents, certificates, records and papers we have reviewed; and (d) compliance with all covenants and agreements contained in such documents.

Based on the foregoing, and in reliance thereon, as of the date hereof, we are of the following opinions:

1. The City is a municipal corporation duly organized and validly existing pursuant to the Constitution and laws of the State of California;

2. The Community Facilities District is duly organized and validly existing as a community facilities district under the Constitution and laws of the State;

3. The Bond Resolution was duly adopted at a meeting of the City Council, which meeting was duly called and held pursuant to law and with all public notice required by law and at which a quorum was present and acting throughout;

4. The preparation and distribution of the Preliminary Official Statement and the Official Statement have been duly approved by the City Council, acting for itself or as the Legislative Body of the Community Facilities District;

5. The execution and delivery by the City of the Bond Documents, and the Bonds and the performance of its obligations thereunder have been duly authorized by all requisite action of the City Council, acting for itself or as the Legislative Body of the Community Facilities District, and the Bonds and the Bond Documents have been duly executed and delivered by the Community Facilities District, and constitute legal, valid and binding obligations of the Community Facilities District enforceable against the Community Facilities District, in accordance with their respective terms, subject to bankruptcy, insolvency, reorganization, moratorium and other laws affecting the enforcement of creditors' rights in general and to the application of equitable principles if equitable remedies are sought;

6. To the best of our knowledge, no action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court, regulatory agency, public board or body is pending or to the best of such counsel's knowledge, threatened in any way affecting the existence of the City or the Community Facilities District or the titles of the officers of each to their respective offices, or seeking to restrain or to enjoin the execution and delivery of the Bond Documents, or the issuance, sale or delivery of the Bonds or the application of the proceeds thereof or the collection or application of the Special Taxes, or the exclusion from gross income for State personal income taxes of interest on the Bonds, or in any way contesting or affecting the validity or enforceability of the Bonds, the Bond Documents or any action of the City or the Community Facilities District contemplated by any of said documents or in any way contesting the completeness or accuracy of the Preliminary Official Statement or the Official Statement or the powers of the City or its authority with respect to the Purchase Agreement or any other applicable agreement, or any action on the part of the City or the Community Facilities District contemplated by any of said documents;

7. To the best of our knowledge, the City and the Community Facilities District are not in breach of or in default under any court or administrative decree or order, or under any loan agreement, note, resolution, indenture, contract, agreement or other instrument to which the City or the Community Facilities District is a party or is otherwise subject or bound, including the Bond Documents, a consequence of which could be to materially and adversely affect the ability of the City or the Community Facilities District to perform their obligations under the Bonds, the Bond Documents or which, with the passage of time or the giving of notice or both, would constitute an event of default thereunder; and;

8. To the best of our knowledge, the adoption of the Bond Resolution and the execution and delivery of the Bonds and the Bond Documents, did not and will not conflict with or constitute a breach of or default under any applicable court or administrative decree or order, or under any loan agreement, note, ordinance, resolution, indenture, contract, agreement or other instrument to which the City or the Community Facilities District, as the case may be, is a party or is otherwise subject or bound, a consequence of which could be to materially and adversely affect the ability of City or the Community Facilities District to perform their obligations under the Bonds or any Bond Documents.

The opinions set forth above are subject to the following additional qualifications:

General principles of equity, regardless of whether such enforceability is considered in a proceeding in equity or at law; and limitations imposed by bankruptcy, insolvency, fraudulent conveyance, receivership, conservatorship, reorganization, arrangement, liquidation, moratorium or other similar laws affecting the enforcement of creditors' rights in general heretofore or hereafter enacted, as such laws may be applied in the event of bankruptcy, insolvency, reorganization, arrangement, receivership, conservatorship, liquidation, readjustment of debt or other similar proceedings of, or moratorium or similar occurrence affecting municipal corporations in the State.

We express no opinion as to matters governing by laws other than the laws of the State and the federal laws of the United States of America, or the enforceability of any choice of law provision in the documents described herein.

This opinion is solely for your benefit in connection with the transactions covered by the first paragraph of this letter and may not be relied upon or used by, circulated, quoted or referred to, nor may copies hereof be delivered to, any other person or for any other purpose without our prior written approval; provided, however, copies of this opinion may be included in the closing transcripts for the transactions connected with the issuance of the Bonds. We disclaim any obligation to update this opinion letter for events occurring or coming to our attention after the date hereof.

Respectfully submitted,

APPENDIX C

CITY OF ROSEVILLE VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES) SPECIAL TAX BONDS SERIES 2020

CLOSING CERTIFICATE OF THE CITY

I, the undersigned, hereby certify that I am the _____ of the City of Roseville (the “City”), the City Council (the “City Council”) of which is the Legislative Body for Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the “Community Facilities District”), a community facilities district duly organized and existing under the laws of the State of California (the “State”) and I am authorized to execute this Certificate on behalf of the City in connection with the issuance of the above-captioned bonds (the “Bonds”). All capitalized terms herein not otherwise defined shall have the meanings given such terms in the Bond Purchase Agreement (the “Bond Purchase Agreement”), dated _____, 2020, by and between the City and Piper Sandler & Co.

I further certify on behalf of the City that:

(i) The representations, warranties and covenants of the City contained in the Bond Purchase Agreement, made on behalf of the City and the Community Facilities District, are true and correct in all material respects on and as of the date hereof as if made on the date hereof;

(ii) The Community Facilities District Resolutions, Formation Documents and the City Documents are in full force and effect and have not been amended, modified or supplemented;

(iii) Except as described in the Official Statement, there is no action, suit, proceeding, inquiry or investigation at law or in equity, or by any court or regulatory agency, public board or body pending, with respect to which the City or the Community Facilities District has been served with process, or to the best knowledge of the City or the Community Facilities District, threatened wherein an unfavorable decision, ruling or finding would: (a) affect the creation, organization, existence or powers of the City or the Community Facilities District, or the titles of their officers to their respective offices, (b) enjoin or restrain the issuance, sale and delivery of the Bonds, the levy or collection of the Special Taxes or any other moneys or property pledged or to be pledged under the Fiscal Agent Agreement, or the pledge thereof, (c) in any way question or affect any of the rights, powers, duties or obligations of the City or the Community Facilities District with respect to the Special Taxes or moneys and assets pledged or to be pledged to pay the principal of, premium, if any, or interest on the Bonds, (d) in any way question or affect any authority for the issuance of the Bonds, or the validity or enforceability of the Bonds or the proceedings relating to the issuance of the Bonds, or (e) in any way question or affect the Bond Purchase Agreement or the transactions contemplated thereby, the Official Statement or the City Documents;

(iv) The information in the Preliminary Official Statement (other than statements pertaining to the book-entry system and under the headings “THE DISTRICT – Entitlements and Development,” as to which no view is expressed) as of its date was and as of the date hereof is, and in the Official Statement (other than statements pertaining to the book-entry system and under the headings “THE DISTRICT – Entitlements and Development,” as to which no view is expressed) as

of its date was and as of the date hereof is, true and correct in all material respects and does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading;

(v) The City has complied with all agreements and covenants, and satisfied all conditions, on its part to be complied with or satisfied under the Bond Purchase Agreement and under the Community Facilities District Resolutions, the Formation Documents, the City Documents and the Official Statement at or prior to the date hereof;

(vi) No event has occurred since the date of the Official Statement which either makes untrue or incorrect in any material respect as of the date hereof any statement or information contained in the Preliminary Official Statement or the Official Statement (other than statements pertaining to the book-entry system and under the headings "THE DISTRICT – Entitlements and Development," as to which no view is expressed) or is not reflected in the Official Statement but should be reflected therein in order to make the statements and information therein not misleading in any material respect;

(vii) The use of and distribution by the Underwriter of the Preliminary Official Statement and the Official Statement in connection with the offer and sale of the Bonds is hereby ratified; and

(viii) The City and the Community Facilities District are each in compliance with all covenants set forth in the Fiscal Agent Agreement.

IN WITNESS WHEREOF, the undersigned has executed this certificate as of the date set forth below.

Dated: _____, 2020

CITY OF ROSEVILLE

By: _____

Its: _____

APPENDIX D

FISCAL AGENT'S CERTIFICATE

The undersigned is an authorized officer of The Bank of New York Mellon Trust Company, N.A. (the "Bank"), and as such, is familiar with the facts herein certified and is authorized and qualified to state and certify the following:

(i) The Bank is duly organized and existing as a national banking association under the laws of the United States of America, having the full power and authority to accept and perform its duties under the Fiscal Agent Agreement, dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the "Fiscal Agent Agreement") by and between the City and the Bank. Capitalized terms used herein and not otherwise defined have the meanings given to such terms in the Bond Purchase Agreement, dated _____, 2020, by and between the City and Piper Sandler & Co.;

(ii) Pursuant to the Fiscal Agent Agreement, the Bank will apply the proceeds from the Bonds to the purposes specified in the Fiscal Agent Agreement;

(iii) The Bank is duly authorized to accept the obligations created by the Fiscal Agent Agreement and to authenticate the Bonds pursuant to the terms of the Fiscal Agent Agreement;

(iv) The Fiscal Agent Agreement has been duly authorized, executed and delivered by the Bank and, assuming due authorization, execution and delivery thereof by the other parties thereto, constitutes a valid and binding agreement of the Bank enforceable against the Bank in accordance with its terms;

(v) The Bonds have been validly authenticated and delivered by the Bank pursuant to the Fiscal Agent Agreement;

(vi) No consent, approval, authorization or other action by any governmental or regulatory authority having jurisdiction over the Bank that has not been obtained is or will be required for the authentication of the Bonds or the consummation by the Bank of the other transactions contemplated to be performed by the Bank in connection with the authentication of the Bonds and the acceptance and performance of the obligations created by the Fiscal Agent Agreement;

(vii) There is no action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court, regulatory agency, public board or body that has been served on the Bank or, to the best of its knowledge, threatened in any way affecting the existence of the Bank, or seeking to restrain or to enjoin the execution and delivery of the Fiscal Agent Agreement or the authentication of the Bonds, by the Bank, or in any way contesting or affecting the validity or enforceability, as against the Bank, of the Fiscal Agent Agreement or any action of the Bank contemplated by any of said documents, or in which an adverse outcome would materially and adversely affect the ability of the Bank to perform its obligations under the Fiscal Agent Agreement;

(viii) The Bank is not in breach of or in default under any applicable law or administrative rule or regulation of the State of California (the “State”) or the United States of America, or of any department, division, agency or instrumentality of either thereof, or under any applicable court or administrative decree or order, or under any loan agreement, note, resolution, indenture, contract, agreement or other instrument to which the Bank is a party or is otherwise subject or bound, a consequence of which could be to materially and adversely affect the ability of the Bank to perform its obligations under the Fiscal Agent Agreement (*provided, however*, that the Bank does not certify as to compliance with State or federal securities laws); and

(ix) The authentication of the Bonds, and the execution and delivery of the Fiscal Agent Agreement by the Bank, and compliance with the provisions of each, will not conflict with or constitute a breach of or default under any applicable law or administrative rule or regulation of the State or the United States of America, or of any department, division, agency or instrumentality of either thereof, or under any applicable court or administrative decree or order, or under any loan agreement, note, ordinance, resolution, Fiscal Agent Agreement, contract, agreement or other instrument to which the Bank is a party or is otherwise subject or bound, a consequence of which could be to materially and adversely affect the ability of the Bank to perform its obligations under the Fiscal Agent Agreement.

Dated: _____, 2020

THE BANK OF NEW YORK MELLON TRUST
COMPANY, N.A.,
as Fiscal Agent

By: _____
Authorized Officer

APPENDIX E
FISCAL AGENT’S COUNSEL OPINION

_____, 2020

City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Roseville, California 95678

Piper Sandler & Co.
2321 Rosecrans Ave., Suite 3200
El Segundo, California 90245

**Re: City of Roseville Villages at Sierra Vista Community Facilities District
No. 1 (Public Facilities) Special Tax Bonds, Series 2020**

Ladies and Gentlemen:

We have acted as counsel for The Bank of New York Mellon Trust Company, N.A., a national banking association (the “Bank”) in connection with the execution by the Bank of the Fiscal Agent Agreement, dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the “Fiscal Agent Agreement”) by and between the City and the Bank. We are generally familiar with the Articles of Association and the Bylaws of the Bank and are also familiar with the corporate proceedings of the Bank with regard to its authorization, execution and delivery of the Fiscal Agent Agreement. Capitalized terms used herein shall have the respective meanings ascribed to them in the Fiscal Agent Agreement, except as otherwise defined herein.

We have examined such documents and have reviewed such questions of law as we have considered necessary and appropriate for the purposes of this opinion. In such review, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, and the conformity with originals of all documents submitted to us as copies. Where questions of fact material to our opinions expressed below were not established independently, we have relied upon statements of officers of the Bank as contained in their certificates.

Based upon the foregoing, we are of the opinion that:

1. The Bank is a national banking association duly organized, validly existing and in good standing under the laws of the United States of America.
2. The Bank has all requisite corporate power, authority and legal right to execute and deliver the Fiscal Agent Agreement and to perform its duties and obligations under the Fiscal Agent Agreement, and has taken all necessary corporate action to authorize the execution and delivery thereof and the performance of its obligations thereunder, including the authentication and delivery of the Bonds in its capacity as Fiscal Agent under the Fiscal Agent Agreement.

3. The Bank has duly authorized, executed and delivered the Fiscal Agent Agreement. Assuming the due authorization, execution and delivery thereof by the other parties thereto, the Fiscal Agent Agreement is a legal, valid and binding agreement of the Bank, enforceable in accordance with its terms against the Bank.

4. To our knowledge, no authorization, approval, consent, or order of any governmental agency or regulatory authority having jurisdiction over the Bank that has not been obtained by the Bank is required for the authorization, execution and delivery by the Bank of the Fiscal Agent Agreement or the authentication and delivery of the Bonds by the Bank under the Fiscal Agent Agreement.

The opinions set forth above are subject to the following qualifications and exceptions:

(a) the opinions are subject to the effect of any applicable bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium or other similar laws of general application affecting creditors' rights; and

(b) the opinions are subject to the effect of general principles of equity, including (without limitation) concepts of materiality, reasonableness, good faith and fair dealing, and other similar doctrines affecting the enforceability of agreements generally (regardless of whether considered in a proceeding in equity or at law).

Our opinions expressed above are limited to the laws of the State of California and the federal laws of the United States of America.

The foregoing opinions are being furnished to you solely for your benefit and may not be relied upon by, nor may copies be delivered to, any other person without our prior written consent.

Very truly yours,

APPENDIX F

CITY OF ROSEVILLE VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES) SPECIAL TAX BONDS SERIES 2020

CERTIFICATE OF SPECIAL TAX CONSULTANT

The undersigned hereby states and certifies:

1. That he/she is an authorized officer of Willdan Financial Services, Inc. (the “Special Tax Consultant”) and as such is familiar with the facts herein certified and is authorized and qualified to certify the same.

2. That the Special Tax Consultant is familiar with the Rate and Method of Apportionment of Special Tax (the “Rate and Method”) as set forth in Appendix A to the Official Statement dated _____, 2020, for the City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the “Community Facilities District”) Special Tax Bonds, Series 2020 (the “Bonds”). Capitalized terms not otherwise defined herein shall be defined as provided in the Rate and Method or the Fiscal Agent Agreement, dated as of July 1, 2019, as supplemented and amended by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____ 1, 2020 (together, the “Fiscal Agent Agreement”) by and between the City and The Bank of New York Mellon Trust Company, N.A., as fiscal agent (the “Fiscal Agent”).

3. That the Special Taxes (net of a 1% administration charge of the County of Placer (the “County Charge”)), if levied in accordance with the Rate and Method and collected will annually yield sufficient revenue to make timely payments of the annual debt service on the 2019 Bonds and the Bonds, and projected annual Administrative Expenses related to the levy and collection of the Special Taxes and the expenses of the Fiscal Agent for the 2019 Bonds and the Bonds (no representation is made as to the actual amounts that will be collected in future years).

4. That the Annual Special Tax (net of the County Charge), if collected in the maximum amounts permitted pursuant to the Rate and Method on the Closing Date, would generate at least 110% of the Annual Debt Service payable with respect to the 2019 Bonds and the Bonds payable from such Special Taxes for Fiscal Year 2020-21 and every year thereafter through the final maturity of the 2019 Bonds and the Bonds, assuming the debt service schedule shown in the Official Statement is true and correct.

5. That all information supplied by the Special Tax Consultant for use in the Official Statement is believed to be true and correct, as of the date of the Official Statement and as of the date hereof.

6. That, as of the dates of the Preliminary Official Statement and the Official Statement and as of the date hereof, the information contained in those portions of the Official Statement entitled “SECURITY AND SOURCES OF PAYMENT FOR THE BONDS – Special Taxes, - Special Tax Methodology and – Levy of Annual Special Tax; Maximum Special Tax,” “VALUE OF PROPERTY WITHIN THE DISTRICT,” “APPENDIX A,” including the tables sourced to the

Special Tax Consultant, and the other data provided by the Special Tax Consultant and included in the Official Statement, do not, to our knowledge, contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made therein, in light of the circumstances under which they were made, not misleading.

7. The Community Facilities District, the City, the Underwriter, and all the professionals involved in the financing are entitled to rely on this Certificate.

Dated: _____, 2020

WILLDAN FINANCIAL SERVICES

By: _____

Title: _____

APPENDIX G

CITY OF ROSEVILLE VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES) SPECIAL TAX BONDS SERIES 2020

CERTIFICATE OF PROPERTY OWNER

_____, 2020

The undersigned party certifies and represents that he or she is duly authorized on behalf of JOHN MOURIER CONSTRUCTION, INC., a California corporation (“JMC Homes” or the “Property Owner”), to execute and deliver this certificate (this “Certificate”) in connection with the issuance, sale and delivery by City of Roseville of the Bonds captioned above (the “Bonds”).

Capitalized terms used but not defined in this Certificate have the same meaning as is set forth in the Bond Purchase Agreement with respect to the Bonds between Piper Sandler & Co., as underwriter (the “Underwriter”), and the City.

As used in this Certificate, the phrase “Actual Knowledge of the Undersigned” means the knowledge that the undersigned currently has as of the date of this Certificate or has obtained through (i) interviews with such current officers and responsible employees of the Property Owner as the undersigned has reasonably determined are likely, in the ordinary course of their respective duties, to have knowledge of the matters set forth in this Certificate, and/or (ii) review of documents reasonably available to the undersigned and which the undersigned reasonably deemed necessary for the undersigned to obtain knowledge of the matters set forth in this Certificate. The undersigned has not conducted any extraordinary inspection or inquiry other than such inspections or inquiries as are prudent and customary in connection with the ordinary course of the Property Owner’s current business and operations.

As used in this Certificate, the term “Relevant Entity” of the Property Owner means any Person presently directly or indirectly through one or more intermediaries controlling, controlled by or under common control with the Property Owner, and about whom information could be material to potential investors in their investment decision regarding the Bonds (including without limitation information relevant to the Property Owner’s proposed development of the Property (defined herein), or to the Property Owner’s ability to pay the Special Taxes due with respect to the Property prior to delinquency). As used in this Certificate, the term “Person” means an individual, a corporation, a partnership, a limited liability company, an association, a joint stock company, a trust, any unincorporated organization or a government or political subdivision thereof. For purposes hereof, the term “control” (including the terms “controlling,” “controlled by” or “under common control with”) means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

As used in this Certificate, the term “Property” means the real property currently owned by the Property Owner within the City of Roseville Villages at Sierra Vista Community Facilities

District No. 1 (Public Facilities) (the “Community Facilities District”), as further described in the Preliminary Official Statement.

The undersigned certifies that he or she is familiar with the facts set forth in this Certificate, and further hereby certifies to the Actual Knowledge of the Undersigned as follows, as an authorized officer or representative of the Property Owner:

(1) The Property Owner has been duly organized and validly exists in good standing under the laws of the State of California and has or will have prior to the Closing, as required, all requisite right, power and authority:

(i) to execute and deliver this Certificate;

(ii) to own, develop and sell the Property, as described in the Preliminary Official Statement;

(iii) to execute and deliver the Property Owner Continuing Disclosure Agreement at Closing;

(iv) to perform its obligations under the Property Owner Continuing Disclosure Agreement; and

(v) to carry on its business as described in the Preliminary Official Statement.

(2) The Property Owner agrees to execute at Closing the Property Owner Continuing Disclosure Agreement substantially in the form attached as an appendix to the Preliminary Official Statement, with such additional changes as may be agreed upon by the Underwriter, Bond Counsel and the Property Owner.

(3) Except as disclosed in the Preliminary Official Statement, to the Actual Knowledge of the Undersigned, Property Owner is not aware of any material failures by it or any entity under managerial control of Property Owner to comply in all material respects with previous continuing disclosure undertakings in a written certificate or agreement executed by it or its Relevant Entities to provide periodic continuing disclosure reports or notices of material events respecting securities offerings in California within the past five (5) years.

(4) To the Actual Knowledge of the Undersigned, execution and delivery of the Property Owner Continuing Disclosure Agreement, and the performance by the Property Owner of its obligations under the Property Owner Continuing Disclosure Agreement, will not conflict with or constitute a breach of or default under any loans, lines of credit, agreements, or other contractual or financial obligations of the Property Owner or any applicable law, regulation, judgment or decree.

(5) To the Actual Knowledge of the Undersigned, neither the Property Owner nor any of its Relevant Entities is currently in material default on any loans, lines of credit, credit agreements, or other material contractual or financial obligations, or in breach of any applicable law, regulation, judgment or decree, and no event has occurred and is continuing that would constitute such a default or breach, the result of which could reasonably be expected to materially and adversely affect the ability of the Property Owner:

(i) to own, develop and sell the Property, as described in the Preliminary Official Statement;

(ii) to pay Special Taxes on the Property (to the extent the responsibility of the Property Owner) prior to delinquency;

(iii) to carry on its business as described in the Preliminary Official Statement; and

(iv) to perform its obligations under the Property Owner Continuing Disclosure Agreement.

(6) Except as disclosed in the Preliminary Official Statement, to the Actual Knowledge of the Undersigned, the Property Owner has not assumed any obligations under any loans, lines of credit, credit agreements, or other material contractual or financial obligations, or any applicable judgment or decree, which could reasonably be expected to materially and adversely affect the ability of the Property Owner:

(i) to own, develop and sell the Property, as described in the Preliminary Official Statement,

(ii) to pay Special Taxes on the Property (to the extent the responsibility of the Property Owner) prior to delinquency, or

(iii) to carry on its business as described in the Preliminary Official Statement.

(7) Except as described in the Preliminary Official Statement, the Property Owner has no loans outstanding and unpaid and no lines of credit that are secured by the Property.

(8) Except as disclosed in the Preliminary Official Statement, to the Actual Knowledge of the Undersigned, neither the Property Owner nor any of its Relevant Entities is currently in default in, or, in the last five (5) years, has ever defaulted to any material extent in, the payment of special taxes or assessments in connection with the Community Facilities District or any other community facilities districts or assessment districts in California that was not cured prior to the institution of any enforcement action with a court of law.

(9) Except as disclosed in the Preliminary Official Statement, to the Actual Knowledge of the Undersigned, there is no litigation, inquiry, investigation or administrative proceeding of any nature pending against the Property Owner (with service of process to the Property Owner having been accomplished), or to the Actual Knowledge of the Undersigned, overtly threatened in writing against the Property Owner, or to the Actual Knowledge of the Undersigned, pending (with service of process to such Relevant Entity having been accomplished) or overtly threatened in writing against any Relevant Entity of the Property Owner, in each case which, if successful, could reasonably be expected to:

(i) materially and adversely affect the ability of the Property Owner to own, develop and sell the Property, as described in the Preliminary Official Statement;

(ii) materially and adversely affect the ability of the Property Owner to pay Special Taxes on the Property (to the extent the responsibility of the Property Owner) prior to delinquency;

(iii) materially and adversely affect the ability of the Property Owner to carry on its business as described in the Preliminary Official Statement;

(iv) materially adversely affect the ability of the Property Owner to perform its obligations under the Property Owner Continuing Disclosure Agreement;

(v) challenge, question the validity or enforceability of, or restrain or enjoin the performance of, the Special Taxes, the Bonds, the Resolution, the Fiscal Agent Agreement, the Property Owner Continuing Disclosure Agreement or the Bond Purchase Agreement; or

(vi) restrain or enjoin collection of Special Taxes or other sums to be pledged to pay the principal of and interest on the Bonds.

(10) Except as disclosed in the Preliminary Official Statement or in this Certificate:

(i) the Property Owner and, to the Actual Knowledge of the Undersigned, its Relevant Entities, are solvent;

(ii) to the Actual Knowledge of the Undersigned, there are no proceedings pending (with service of process to the Property Owner having been accomplished) or overtly threatened in writing in which the Property Owner or any of its Relevant Entities may be adjudicated as bankrupt, become the debtor in a bankruptcy proceeding, be discharged from any or all of its respective debts or obligations, be granted an extension of time to pay its respective debts or obligations, or be granted a reorganization or readjustment of its respective debts or obligations; and

(iii) Neither the Property Owner nor, to the Actual Knowledge of the Undersigned, any of its Relevant Entities, has filed for bankruptcy or been declared bankrupt in the last ten (10) years.

(11) As of the date hereof, the information in the sections of the Preliminary Official Statement entitled "THE DISTRICT," "THE IMPROVEMENTS," "OWNERSHIP OF PROPERTY WITHIN THE DISTRICT," "CONTINUING DISCLOSURE" and "SPECIAL RISK FACTORS" concerning the Property Owner and its Relevant Entities, the Property, the Property Owner's development and financing plans, and the Property Owner's contractual arrangements (but excluding any information cited as coming from a source other than the Property Owner) is true and correct in all material respects, and contains no untrue statement of a material fact and does not omit any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(12) Except as disclosed in the Preliminary Official Statement, the Property Owner has not submitted an application for, nor received actual notice of,

(i) the formation or authorization of any other assessment district or community facilities district that would include any portion of the Property, or

(ii) the authorization or issuance of any debt secured by an assessment or another special tax to be levied on any portion of the Property, other than the Special Tax.

(13) Except as set forth in the Preliminary Official Statement, to the Actual Knowledge of the Undersigned, there are no claims, disputes, lawsuits, actions or contingent liabilities of or against the Property Owner or its Relevant Entities, or among, by or between the Property Owner and any contractors working on the development of the Property, which could reasonably be expected to materially and adversely affect:

(i) the ability of the Property Owner to own, develop and sell the Property, as described in the Preliminary Official Statement;

(ii) the ability of the Property Owner to pay Special Taxes on the Property (to the extent the responsibility of the Property Owner) prior to delinquency;

(iii) the ability of the Property Owner to carry on its business as described in the Preliminary Official Statement; or

(iv) the ability of the Property Owner to perform its obligations under the Property Owner Continuing Disclosure Agreement.

(14) To the Actual Knowledge of the Undersigned, all information submitted by, or on behalf of, the Property Owner to (i) the Appraiser, as such information is set forth in the Appraisal, was, at the time of submission, and, except as modified by later information submitted by such Property Owner, is, as of the date of this Certificate, true and correct in all material respects, and (ii) the City, the Community Facilities District, Bond Counsel, Disclosure Counsel, or the Underwriter in connection with the issuance of the Bonds was, at the time of submission and, except as modified by later information submitted by such Property Owner, is as of the date of this Certificate, true and correct in all material respects.

(15) The Property Owner covenants that, while the Bonds or any refunding obligations related thereto are outstanding, the Property Owner will not bring any action, suit, proceeding, inquiry or investigation at law or in equity, before any court, regulatory agency, public board or body, that in any way:

(i) seeks to challenge or overturn the formation of the Community Facilities District;

(ii) seeks to challenge the adoption of the ordinance levying Special Taxes within the Community Facilities District;

(iii) seeks to invalidate the Community Facilities District or any of the Bonds or any refunding obligations; or

(iv) seeks to invalidate the special tax liens imposed under Section 3115.5 of the Streets and Highways Code based on recordation of the notices of special tax lien relating thereto.

The foregoing covenant shall not prevent the Property Owner in any way from bringing any other action, suit, proceeding, inquiry or investigation at law or in equity relating to the following:

(a) a claim that the Special Tax has not been levied in accordance with the Rate and Method;

(b) the application or use of the Special Taxes levied and collected; or

(c) the enforcement of the obligations of the City or the Community Facilities District under the Fiscal Agent Agreement or any agreements between the Property Owner and the City or the Community Facilities District or under which the Property Owner is a beneficiary.

(16) The Property Owner has received a copy of the Rate and Method containing the prepayment formula. The Property Owner acknowledges that any prepayment of the Special Taxes may only be made in accordance with the Rate and Method.

(17) The Property Owner shall comply with the provision of the Mello-Roos Community Facilities Act of 1982, as amended, relating to the Notice of Special Tax described in California Government Code Section 53341.5 in connection with the sale of the Property.

(18) Based upon its current development plans, including, without limitation, its current budget and subject to economic conditions and risks generally inherent in the development of real property, the Property Owner anticipates that it will have sufficient funds to (i) carry on its business as described in the Preliminary Official Statement, (ii) own, develop and sell the Property as described in the Preliminary Official Statement, and (iii) pay Special Taxes on the Property (to the extent the responsibility of the Property Owner) prior to delinquency.

However, no assurance can be given that sources of financing available to the Property Owner will be sufficient to complete the property development and home construction as currently anticipated and as described in the Preliminary Official Statement. While the Property Owner has made such internal financing available in the past, there can be no assurance whatsoever of its willingness or ability to do so in the future. Neither the Property Owner nor any of its Relevant Entities has any legal obligation of any kind to make any such funds available or to obtain loans. Other than pointing out the willingness of the Property Owner to provide internal financing in the past, the Property Owner has not represented in any way that it will do so in the future. If and to the extent that internal financing and home sales revenues are inadequate to pay the costs to complete the Property Owner's planned development in the Community Facilities District and other financing by the Property Owner is not put into place, there could be a shortfall in the funds required to complete the proposed development by the Property Owner and portions of the Property may not be developed.

(19) The Property Owner consents to the issuance of the Bonds. The Property Owner acknowledges and agrees that the proceeds of such Bonds will be used for the acquisition and construction of the improvements described in the Preliminary Official Statement. The Property Owner acknowledges that the costs to acquire and construct such improvements are estimates, and that any increase in costs in excess of the estimated costs relating to improvements will reduce the improvements which may be financed by the City, and neither the City, nor the Community Facilities District has any obligation to provide moneys to pay for any such costs.

(20) During the period between the date of this Certificate and the Closing Date, if the Property Owner has actual knowledge of any event relating to or affecting the Property Owner, its Relevant Entities, or the ownership, development or sale of the Property which could cause the information under the captions of the Preliminary Official Statement indicated in Section 11 of this Certificate (and subject to the limitations and exclusions contained in Section 11 of this Certificate) to contain an untrue statement of a material fact or to omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, the Property Owner shall notify the City and the Underwriter and if, in the opinion of counsel to the City or the Underwriter, such event requires the preparation and publication of a supplement or amendment to the Preliminary Official Statement, the Property Owner shall reasonably cooperate with the City in the preparation of an amendment or supplement to the Preliminary Official Statement in form and substance satisfactory to counsel to the City and to the Underwriter.

(21) As a condition to the issuance of the Bonds, the Property Owner agrees to deliver a bring-down certificate, dated the Closing Date, in substantially the form attached as Appendix H to the Bond Purchase Agreement, to affirm and restate the Property Owner's certifications, representations and covenants made in this Certificate. If any event related to or affecting the Property Owner, its Relevant Entities or the ownership, development or sale of the Property occurs, as a result of which it is necessary to modify the bring-down certificate, the Property Owner agrees to deliver a new bring-down certificate revised to reflect such event.

(22) The Property Owner acknowledges and agrees that:

(i) in connection with the purchase and sale of the Bonds under the Bond Purchase Agreement, and with the discussions, undertakings and procedures leading up to the consummation of the purchase and sale of the Bonds under the Bond Purchase Agreement, the Underwriter is and has been acting solely as principal and is not acting as the agent or fiduciary of the Property Owner;

(iii) the Underwriter has not assumed a fiduciary responsibility in favor of the Property Owner with respect to (a) the offering of the Bonds contemplated hereby or the process leading thereto (whether or not the Underwriter, or any affiliate of the Underwriter, has advised or is currently advising the Property Owner on other matters), or (b) any other obligation to the Property Owner with respect to the offering contemplated by the Bond Purchase Agreement; and

(iii) the Property Owner has consulted its own legal, financial and other advisors to the extent it has deemed appropriate in connection with the offering contemplated by the Bond Purchase Agreement.

On behalf of the Property Owner, I have reviewed the contents of this Certificate and the Property Owner has consulted with counsel regarding the meaning of its contents. The Property Owner acknowledges and understands that a variety of state and federal laws, including but not limited to the Securities Act of 1933, as amended, and Rule 10b-5 promulgated under the Securities Exchange Act of 1934, as amended, may apply to the Property Owner, and that under some circumstances certification as to the matters set forth in this Certificate, without additional disclosures or other action, may not fully discharge all duties and obligations of the Property Owner under such laws.

JOHN MOURIER CONSTRUCTION, INC.,
a California corporation

By: _____

APPENDIX H

**CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1
(PUBLIC FACILITIES)
SPECIAL TAX BONDS
SERIES 2020**

BRING-DOWN CERTIFICATE OF PROPERTY OWNER

_____, 2020

The undersigned party certifies and represents that he or she is duly authorized on behalf of JOHN MOURIER CONSTRUCTION, INC., a California corporation (“JMC Homes” or the “Property Owner”), to execute and deliver this certificate (this “Certificate”) in connection with the issuance, sale and delivery by City of Roseville of the Bonds captioned above (the “Bonds”).

This Bring-Down Certificate is delivered pursuant to the Bond Purchase Agreement with respect to the Bonds dated _____, 2020, between Piper Sandler & Co., as underwriter, and the City (the “Purchase Agreement”).

In connection with the distribution of the Preliminary Official Statement relating to the Bonds, the Property Owner executed a Certificate of Property Owner dated _____, 2020 (the “Certificate”).

Capitalized terms used but not defined in this Bring-Down Certificate have the same meanings as set forth in the Purchase Agreement and the Certificate.

The undersigned, on behalf of the Property Owner, further certifies as follows:

(1) The undersigned is familiar with the facts certified in the Certificate and this Bring-Down Certificate, and is authorized and qualified to certify the same as an authorized officer or representative of the Property Owner.

(2) The undersigned has received the final Official Statement relating to the Bonds (the “Final Official Statement”).

(3) Each statement made in the Certificate is affirmed and restated as if made on the date hereof; provided that each statement made in the Certificate referring to the Preliminary Official Statement is affirmed as it relates to the Final Official Statement.

(4) To the Actual Knowledge of the Undersigned (as defined in the Certificate), no event has occurred since the date of the Preliminary Official Statement that has, in any material way, adversely affected the statements and information described in Paragraph 11 of the Certificate (and subject to the limitations and exclusions contained in Paragraph 11 of the Certificate) relating to the Property Owner and its Relevant Entities, the Property, the Property Owner's development and financing plans, and the Property Owner's contractual arrangements (but excluding any information cited as coming from a source other than the Property Owner), which should be disclosed in the Final Official Statement for the purposes for which it is to be used in order to make such statements and information contained in the Final Official Statement not misleading in any material respect.

(5) For a period of 90 days after the Closing Date, if the Property Owner has actual knowledge of any event relating to or affecting the Property Owner, its Relevant Entities, or the ownership development or sale of the Property which could cause the information under the captions of the Final Official Statement indicated in Paragraph 11 of the Certificate (and subject to the limitations and exclusions contained in Paragraph 11 of the Certificate) to contain an untrue statement of a material fact or to omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, the Property Owner shall notify the City and the Underwriter and if, in the opinion of counsel to the City or the Underwriter, such event requires the preparation and publication of a supplement or amendment to the Final Official Statement, the Property Owner shall reasonably cooperate with the City in the preparation of an amendment or supplement to the Final Official Statement in form and substance satisfactory to counsel to the City and to the Underwriter.

(6) The Property Owner has duly executed and delivered the Property Owner Continuing Disclosure Agreement, and the Property Owner Continuing Disclosure Agreement constitutes the legal, valid and binding obligation of the Property Owner, enforceable against the Property Owner in accordance with its terms, except as such enforcement is limited by bankruptcy, insolvency, reorganization, arrangement, moratorium, fraudulent conveyance, and other similar laws relating to or affecting the rights of creditors and certain equitable, legal, or statutory principles affecting the enforcement of contractual rights generally, regardless of whether such enforcement is considered in a proceeding in equity or at law.

JOHN MOURIER CONSTRUCTION, INC.,
a California corporation

By: _____

APPENDIX I

**CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1
(PUBLIC FACILITIES)
SPECIAL TAX BONDS
SERIES 2020**

FORM OF PROPERTY OWNER'S COUNSEL OPINION

_____, 2020

City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
311 Vernon Street
Roseville, California 95678

Piper Sandler & Co.
2321 Rosecrans Ave., Suite 3200
El Segundo, California 90245

**Re: City of Roseville Villages at Sierra Vista Community Facilities District No. 1
(Public Facilities) Special Tax Bonds, Series 2020**

Ladies and Gentlemen:

We have acted as counsel to John Mourier Construction, Inc. (the "Property Owner") in connection with the issuance and sale by City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the "District") of \$_____ City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2020 (the "Bonds"). This opinion is rendered pursuant to the Bond Purchase Agreement dated _____, 2020 (the "Bond Purchase Agreement"), entered into in connection therewith. Capitalized terms used herein without definition shall have the meanings set forth in the Bond Purchase Agreement.

In rendering the opinions set forth herein, we have reviewed and examined such documents as we have determined to be appropriate, including the following documents:

- A. The Bond Purchase Agreement;
- B. The Preliminary Official Statement dated _____, 2020 and the Official Statement dated _____, 2020 (collectively, the "Official Statement") for the offer and sale of the Bonds;
- C. The Property Owner Continuing Disclosure Certificate, dated _____, 2020 (the "Property Owner Continuing Disclosure Certificate") by the Property Owner and Willdan Financial Services, as dissemination agent; and

D. The Property Owner Closing Certificate provided by Property Owner to the City and Underwriter pursuant to Section 3 of the Bond Purchase Agreement (the “Property Owner Closing Certificate”).

For purposes of this opinion, the term “Litigation Search” shall mean a litigation search of Developer, performed in the Superior Court of the State of California, County of Placer; the California Court of Appeal, Third Appellate District; the United States District Court, Eastern District of California; the United States Bankruptcy Court, Eastern District of California; and the United States Ninth Circuit Court of Appeal, conducted by Corporation Service Company (Order Date _____, 2020; Order No. _____) (the “Litigation Search”), but without warranty as to the completeness and accuracy thereof due to the potential for errors or inaccuracies in the data and files made available from the applicable courts.

With respect to factual matters underlying our opinions herein, we have made no independent investigation or inquiry and have relied solely upon the Property Owner Closing Certificate and the Litigation Search. We advise you that the phrase “to our knowledge,” as used herein, means that no facts have come to our attention, based upon an inquiry of attorneys in this firm who devote substantive legal attention to Property Owner, or as a result of our examination of the Property Owner Closing Certificate and the Litigation Search, that indicate to us anything contrary to the statement to which the phrase relates. Except as expressly set forth above, the phrase does not mean that we have conducted any investigation or inquiry or performed any other examination, or review. We have no reason to believe that any factual matters or assumptions relied upon by us are not true, correct and complete.

Our opinions herein are limited to the internal laws of the State of California and the federal laws of the United States of America. We express no opinion whatsoever with respect to the laws of any other jurisdiction and assume no responsibility for the applicability of such laws. In rendering our opinions herein, we have assumed the following, with your approval:

(i) The genuineness and authenticity of all signatures on original documents submitted to us (other than any signatures on behalf of Property Owner); the authenticity and completeness of all documents submitted to us as originals; the conformity to originals of all documents submitted to us as copies; where any signature, other than any signature on behalf of Property Owner purports to have been made in a corporate, governmental, fiduciary or other capacity, the person who affixed such signature had the full power and authority to do so;

(ii) The due authorization, execution and delivery of the applicable agreements by the parties thereto, other than the Property Owner, and the legality, validity, binding effect and enforceability against such parties of their respective obligations under such agreements;

(iii) The truth, accuracy and completeness of all factual representations and warranties of all parties under the documents described in paragraphs A through D, above;

(iv) The constitutionality or validity of a relevant statute, rule, regulation or agency action is not in issue unless a reported decision in the State of California has specifically addressed but not resolved, or has established, its unconstitutionality or invalidity; and

(v) All official public records relied upon by us are accurate and complete.

Based upon the foregoing and in reliance thereon, and based on our examination of such questions of law as we have deemed appropriate under the circumstances, and subject to any further assumptions, comments, exceptions, qualifications and limitations set forth below, as of the date hereof, it is our opinion that:

1. The Property Owner is a limited liability company duly incorporated and validly existing in the State of California and in good standing under the laws of the State of California. The Property Owner is qualified to do business in the State of California.

2. The Property Owner Continuing Disclosure Certificate has been duly authorized, executed and delivered by Property Owner, and constitutes legal, valid and binding obligations of the Property Owner, enforceable against the Property Owner in accordance with its terms.

3. To our knowledge, the execution and delivery by Property Owner of the Property Owner Continuing Disclosure Certificate and the performance of its obligations thereunder do not and will not result in a violation or any provision of, or in default under any agreement or other instrument to which Developer is a party.

4. To our knowledge, Property Owner is not in violation of any provision of or in default under, its organizational documents or any agreement or other instrument, violation or default under which would materially and adversely affect the business, properties, assets, liabilities or conditions (financial or other) of the Property Owner with respect to Property Owner's ability to develop real property owned by Property Owner within the District.

5. To our knowledge, except as set forth in the Official Statement, there are no actions, suits or proceedings pending or threatened against Property Owner which, if determined adversely, would have a material adverse effect (a) on the ability of Property Owner to perform its obligations under the Property Owner Continuing Disclosure Certificate or (b) on the development, construction, use, occupancy or operation of the Development or a material portion thereof.

6. Without having undertaken to independently determine the accuracy, completeness or fairness of the discussion contained in the Official Statement under the captions "THE DISTRICT," "THE IMPROVEMENTS," "OWNERSHIP OF PROPERTY WITHIN THE DISTRICT," "CONTINUING DISCLOSURE," and "SPECIAL RISK FACTORS" (except that no opinion or belief is expressed as to any information relating to The Depository Trust Company, or any information relating to CUSIP numbers, or with respect to any financial, statistical or engineering information, data or forecasts, numbers, charts, estimates, projections, assumptions or expressions of opinion, assessed valuations or appraised values, or to any information which is attributable to a source other than Property Owner, contained in the Official Statement), no facts came to our attention during the course of our representation of Property Owner that would lead us to believe that the information under said captions of the Official Statement relating to the Property Owner and the Property Owner's organizations, activities, properties and financial condition, and its proposed development of the property, contains any untrue statement of a material fact or omits any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

In addition, all of our opinions expressed hereinabove are specifically subject to and limited by the following:

(a) We express no opinion as to matters governed by any laws other than the substantive laws of California which are in effect as of the date hereof, and we assume no obligation to modify or supplement this opinion with respect to changes in such laws after the date hereof.

(b) As counsel to the Property Owner in this matter, we have not rendered financial advice to the Property Owner and do not represent, by this opinion or otherwise, that we have reviewed or made any assessment about, nor do we offer any opinion about, the financial condition of the Property Owner, past, present or future; nor have we reviewed the financial feasibility of this transaction or those matters which the proceeds of the Bonds will fund or any of its components and, accordingly, we offer no opinion whatsoever regarding such financial feasibility.

(c) The effect of laws or court decisions relating to bankruptcy, insolvency, fraudulent conveyance, equitable subordination, reorganization, arrangement, moratorium or other laws or court decisions relating to or affecting creditors' rights generally.

(d) Limitations imposed by California or federal law or equitable principles upon the availability of the remedy of specific performance of any of the remedies, covenants or other provisions of any document or agreement and upon the availability of injunctive relief or other equitable remedies.

In addition, we express no opinion as to the title of the property within the District or any entitlements, permits, approvals or other assets relating to the Property Owner's development of its property as proposed in the Official Statement.

We express no opinion as to any matter other than as expressly set forth above, and, in conjunction therewith, specifically express no opinion concerning the application of or compliance with any federal securities law, including, but not limited to, the Securities Act of 1933, as amended, and the Trust Indenture Act of 1939, as amended, any state securities or "Blue Sky" law, or any federal, state or local tax law, as respecting the Bonds.

This letter is intended solely for your use in accordance with the Bond Purchase Agreement and may not be reproduced or filed publicly or relied upon for any other purpose by you or for any purpose whatsoever by any other party without the express written consent of the undersigned except that this Opinion may be copied and distributed as part of a closing book of the bond transaction documents, provided that such distribution shall not expand in any way the permitted uses of this letter.

We assume no responsibility for the effect of any fact or circumstance occurring subsequent to the date of this letter, including without limitation, legislative or other changes in the law. Further, we assume no responsibility to advise you of any facts or circumstances of which we become aware after the date hereof, regardless of whether or not they may affect our opinions herein. This opinion is given as of the date hereof and we assume no obligation to update our opinions herein after the date hereof.

Very truly yours,

APPENDIX J

**CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1
(PUBLIC FACILITIES)
SPECIAL TAX BONDS
SERIES 2020**

CERTIFICATE OF APPRAISER

Integra Realty Resources (the “Appraiser”), Sacramento, California prepared an appraisal of the properties within the City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the “Community Facilities District”) dated _____, 2020 (the “Appraisal”). The Appraisal is described and summarized in the Preliminary Official Statement dated _____, 2020 (the “Preliminary Official Statement”) and the Official Statement dated _____, 2020 (the “Official Statement”), including as Appendix B thereto, relating to the bonds captioned above.

The Appraiser hereby certifies that, to the best of his knowledge and belief, all information with respect to the Appraisal in the Preliminary Official Statement and in the Official Statement was true and correct as of the date of the Appraisal and that the Appraiser is aware that acts and events may have occurred since the date of the Appraisal which could result in both positive and negative effects on market value; however, an updated Appraisal has not been completed as of this date.

The Appraiser hereby consents to the use of the Appraisal in connection with the distribution and use of the Preliminary Official Statement and Official Statement.

Dated: _____, 2020

INTEGRA REALTY RESOURCES

By:_____

APPENDIX K

CITY OF ROSEVILLE VILLAGES AT SIERRA VISTA COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES) SPECIAL TAX BONDS SERIES 2020

FORM OF ISSUE PRICE CERTIFICATE

The undersigned, on behalf of Piper Sandler & Co. (“Piper”) hereby certifies as set forth below with respect to the sale and issuance of the above-captioned obligations (the “Bonds”).

1. ***Sale of the General Rule Maturities.*** As of the date of this certificate, for each Maturity of the General Rule Maturities, the first price at which at least 10% of such Maturity was sold to the Public is the respective price listed in Schedule A.

2. ***Initial Offering Price of the Hold-the-Offering-Price Maturities.***

(a) Piper offered the Hold-the-Offering-Price Maturities to the Public for purchase at the respective initial offering prices listed in Schedule A (the “Initial Offering Prices”) on or before the Sale Date. A copy of the pricing wire or equivalent communication for the Bonds is attached to this certificate as Schedule B.

(b) As set forth in the Bond Purchase Agreement, Piper has agreed in writing that, (i) for each Maturity of the Hold-the-Offering-Price Maturities, it would neither offer nor sell any of the Bonds of such Maturity to any person at a price that is higher than the Initial Offering Price for such Maturity during the Holding Period for such Maturity (the “hold-the-offering-price rule”), and (ii) any selling group agreement shall contain the agreement of each dealer who is a member of the selling group, and any retail distribution agreement shall contain the agreement of each broker-dealer who is a party to the retail distribution agreement, to comply with the hold-the-offering-price rule. Pursuant to such agreement, no Underwriter (as defined below) has offered or sold any Maturity of the Hold-the-Offering-Price Maturities at a price that is higher than the respective Initial Offering Price for that Maturity of the Bonds during the Holding Period.

3. ***Defined Terms.***

(a) *General Rule Maturities* means those Maturities of the Bonds listed in Schedule A hereto as the “General Rule Maturities.”

(b) *Hold-the-Offering-Price Maturities* means those Maturities of the Bonds listed in Schedule A hereto as the “Hold-the-Offering-Price Maturities.”

(c) *Holding Period* means, with respect to a Hold-the-Offering-Price Maturity, the period starting on the Sale Date and ending on the earlier of (i) the close of the fifth business day after the Sale Date, or (ii) the date on which Piper has sold at least 10% of such Hold-the-Offering-Price

Maturity to the Public at prices that are no higher than the Initial Offering Price for such Hold-the-Offering-Price Maturity.

(d) *Issuer* means City of Roseville.

(e) *Maturity* means Bonds with the same credit and payment terms. Bonds with different maturity dates, or Bonds with the same maturity date but different stated interest rates, are treated as separate maturities.

(f) *Public* means any person (including an individual, trust, estate, partnership, association, company, or corporation) other than an Underwriter or a related party to an Underwriter. The term “related party” for purposes of this certificate generally means any two or more persons who have greater than 50 percent common ownership, directly or indirectly.

(g) *Sale Date* means the first day on which there is a binding contract in writing for the sale of a Maturity of the Bonds. The Sale Date of the Bonds is _____, 2020.

(h) *Underwriter* means (i) any person that agrees pursuant to a written contract with the Issuer (or with the lead underwriter to form an underwriting syndicate) to participate in the initial sale of the Bonds to the Public, and (ii) any person that agrees pursuant to a written contract directly or indirectly with a person described in clause (i) of this paragraph to participate in the initial sale of the Bonds to the Public (including a member of a selling group or a party to a retail distribution agreement participating in the initial sale of the Bonds to the Public).

The representations set forth in this certificate are limited to factual matters only. Nothing in this certificate represents Piper’s interpretation of any laws, including specifically Sections 103 and 148 of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations thereunder. The undersigned understands that the foregoing information will be relied upon by the Issuer with respect to certain of the representations set forth in the Certificates as to Arbitrage and with respect to compliance with the federal income tax rules affecting the Bonds, and by Jones Hall, A Professional Law Corporation in connection with rendering its opinion that the interest on the Bonds is excluded from gross income for federal income tax purposes, the preparation of the Internal Revenue Service Form 8038-G, and other federal income tax advice that it may give to the Issuer from time to time relating to the Bonds.

Dated: _____, 2020

PIPER SANDLER & CO.

By: _____

SCHEDULE A

**SALE PRICES OF THE GENERAL RULE MATURITIES AND
INITIAL OFFERING PRICES OF THE HOLD-THE-OFFERING-PRICE MATURITIES**

(Attached)

SCHEDULE B
PRICING WIRE OR EQUIVALENT COMMUNICATION

(Attached)

**SUPPLEMENTAL AGREEMENT NO. 1 TO
FISCAL AGENT AGREEMENT**

by and between

CITY OF ROSEVILLE

and

**THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,
as Fiscal Agent**

Dated as of _____ 1, 2020

Relating to:

**\$ _____
City of Roseville
Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities)
Special Tax Bonds
Series 2020**

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SUPPLEMENTAL AGREEMENT NO. 1 TO FISCAL AGENT AGREEMENT

THIS SUPPLEMENTAL AGREEMENT NO. 1 TO FISCAL AGENT AGREEMENT (this "Supplemental Agreement No. 1" or "Agreement"), dated as of _____ 1, 2020, is by and between the CITY OF ROSEVILLE, a charter city and public body, corporate and politic, organized and existing under and by virtue of the Constitution and laws of the State of California (the "City") for and on behalf of the City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the "District"), and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., as fiscal agent (the "Fiscal Agent") under a Fiscal Agent Agreement, dated as of July 1, 2019 (the "Original Fiscal Agent Agreement") by and between the Fiscal Agent and the City.

RECITALS:

WHEREAS, the City Council of the City has formed the District under the provisions of the Mello-Roos Community Facilities Act of 1982, as amended (constituting Section 53311 *et seq.* of the California Government Code) (the "Act"); and

WHEREAS, the City Council, as the legislative body of the District, is authorized under the Act to levy special taxes to pay for the costs of facilities within the District and to authorize the issuance of bonds secured by said special taxes under the Act; and

WHEREAS, the Council, as legislative body of the District, previously authorized the issuance of special tax bonds of the City for the District in the maximum aggregate principal amount of not to exceed \$310,000,000 (the "Bond Authorization"); and

WHEREAS, pursuant to the provisions of the Act and the Original Fiscal Agent Agreement, the City previously issued, for and on behalf of the District, \$12,540,000 initial principal amount of City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2019 (the "2019 Bonds") for the purpose of financing various public improvements authorized to be funded by the District, which 2019 Bonds constituted the first series of bonds issued pursuant to the Bond Authorization; and

WHEREAS, Section 5.17 of the Original Fiscal Agent Agreement authorizes the issuance by Supplemental Agreement of Additional Bonds (as such terms are defined in the Original Fiscal Agent Agreement) secured under the Original Fiscal Agent Agreement on parity with the 2019 Bonds; and

WHEREAS, after due investigation and deliberation the City has determined that it is in the interests of the City and the District at this time for the City, for and on behalf of the District, to provide for the issuance of City of Roseville Community Facilities District No. 1 Special Tax Bonds, Series 2020 in the initial aggregate principal amount of \$_____ (the "2020 Bonds"), to provide moneys needed to construct and acquire the facilities necessary for development of property within the City; and

WHEREAS, this Supplemental Agreement No. 1 is a "Supplemental Agreement" as defined in Section 1.03 of the Original Fiscal Agent Agreement and the 2020 Bonds are "Additional Bonds" as defined in Section 1.03 of the Original Fiscal Agent Agreement and secured under the Original Fiscal Agent Agreement, as amended and supplemented by this Supplemental Agreement No. 1, on parity with the 2019 Bonds;

WHEREAS, the City and the Fiscal Agent desire to enter into this Supplemental Agreement No. 1 pursuant to Sections 5.17 of the Original Fiscal Agent Agreement and to provide for the issuance of the 2020 Bonds;

WHEREAS, to provide for the issuance of the 2020 Bonds, it is necessary to supplement and amend the Original Fiscal Agent Agreement, as more particularly provided herein, as authorized by Sections 5.17 and 8.05 of the Original Fiscal Agent Agreement; and

WHEREAS, the City has determined that all acts and proceedings required by law necessary to make the 2020 Bonds, when executed by the City for the District, authenticated and delivered by the Fiscal Agent and duly issued, the valid, binding and legal special obligations of the City for the District, and to constitute the Original Fiscal Agent Agreement, as amended and supplemented by this Supplemental Agreement No. 1, a valid and binding agreement for the uses and purposes herein and therein set forth, in accordance with its terms, have been done or taken and the execution and delivery of this Supplemental Agreement No. 1 have been in all respects duly authorized.

AGREEMENT:

NOW, THEREFORE, in consideration of the premises and the mutual agreements herein contained, and for other consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereto do hereby agree as follows:

SECTION 1. Supplement to Original Fiscal Agent Agreement. In accordance with the provisions of Section 5.17 and 8.05 of the Original Fiscal Agent Agreement, the Original Fiscal Agent Agreement is hereby amended by adding a new article thereto, to be designated as Article X. Such Article X shall read in its entirety as follows:

ARTICLE X

2020 BONDS

Section 10.01. Definitions. The Original Fiscal Agent Agreement is amended to add the following definitions to Section 1.03.

“Article X” means this Article X which has been incorporated in and made a part of this Agreement pursuant to Supplemental Agreement No. 1, together with all amendments of and supplements to this Article X entered into pursuant to the provisions of Section 8.01.

“Continuing Disclosure Certificate” means (i) with respect to the 2019 Bonds, the Continuing Disclosure Agreement, dated as of July 1, 2019, by and between the City and Willdan Financial Services, in its capacity as Dissemination Agent, as originally executed and as it may be amended from time to time in accordance with the terms thereof and (ii) with respect to the 2020 Bonds, the Continuing Disclosure Agreement, dated as of _____, 1, 2020, by and among the City and Willdan Financial Services, in its capacity as Dissemination Agent, as originally executed and as it may be amended from time to time in accordance with the terms thereof.

“Interest Payment Dates” means (i) with respect to the 2019 Bonds, March 1 and September 1 of each year, commencing September 1, 2019, and (ii) with respect to the 2020 Bonds, March 1 and September 1 of each year, commencing September 1, 2020.

“Supplemental Agreement No. 1” means Supplemental Agreement No. 1 to Fiscal Agent Agreement, dated as of _____ 1, 2020, between the City, for and on behalf of the District, and the Fiscal Agent.

“2020 Bonds” means the City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2020, authorized to be issued under Section 10.02.

“2020 Costs of Issuance” means items of expense payable or reimbursable directly or indirectly by the City and related to the authorization, sale and issuance of the 2020 Bonds, which items of expense shall include, but not be limited to, printing costs, costs of reproducing and binding documents, closing costs, filing and recording fees, initial fees, expenses and charges of the Fiscal Agent including its first annual administration fee, expenses incurred by the City in connection with the issuance of the 2020 Bonds, financial advisor fees, (underwriter’s) discount or underwriting fee for the 2020 Bonds, legal fees and charges, including bond counsel, disclosure counsel, charges for execution, transportation and safekeeping of the 2020 Bonds and other costs, charges and fees in connection with the foregoing.

“2020 Costs of Issuance Fund” means the fund by that name established and held by the Fiscal Agent pursuant to Section 10.07.

“2020 Improvement Account” means the account by that name established in Section 3(A) of this Supplemental Agreement No. 1 hereof.

“2020 Reserve Account” means the account by that name established in Section ____ of this Supplemental Agreement No. 1 hereof.

“Term 2020 Bonds” means the 2020 Bonds maturing September 1, 20__ and September 1, 20__.

Section 10.02. Authorization of 2020 Bonds. 2020 Bonds in the aggregate principal amount of \$_____, are hereby authorized to be issued as Additional Bonds under and subject to the terms of this Agreement, the Act, and other applicable laws of the State of California. The 2020 Bonds shall be designated the “City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds, Series 2020.”

Jurisdiction is hereby reserved to issue subsequent Additional Bonds; provided that the maximum aggregate principal amount of bonds which may be issued for the District, including Bonds outstanding under this Agreement, shall not exceed the Bond Authorization.

Section 10.03. Terms of 2020 Bonds.

(A) Form; Denominations. The 2020 Bonds shall be issued as fully registered Bonds without coupons in the denomination of \$5,000 or any integral multiple of \$5,000 in excess thereof.

(B) Date of the 2020 Bonds. The 2020 Bonds shall be dated the Closing Date for the 2020 Bonds.

(C) CUSIP Identification Numbers. "CUSIP" identification numbers shall be imprinted on the 2020 Bonds, but such numbers shall not constitute a part of the contract evidenced by the 2020 Bonds and any error or omission with respect thereto shall not constitute cause for refusal of any purchaser to accept delivery of and pay for the 2020 Bonds. In addition, failure on the part of the City or the Fiscal Agent to use such CUSIP numbers in any notice to Owners shall not constitute an event of default or any violation of the City's contract with such Owners and shall not impair the effectiveness of any such notice.

(D) Maturities, Interest Rates. The 2020 Bonds shall be issued as serial bonds and term bonds, and shall mature and become payable as follows:

<u>Maturity Date</u> <u>(Sept. 1)</u>	<u>Principal</u> <u>Amount</u>	<u>Interest</u> <u>Rate</u>	<u>Maturity Date</u> <u>(Sept.1)</u>	<u>Principal</u> <u>Amount</u>	<u>Interest</u> <u>Rate</u>
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(E) Interest and Method of Payment. Interest on the 2020 Bonds shall be payable as provided in Section 2.02(E) of this Agreement, with the Closing Date as used therein being the Closing Date as defined in Section 1.02, and payments shall be made on the 2020 Bonds as provided in Section 2.02(F), with the first Interest Payment Date being September 1, 2020.

Section 10.04. Redemption of 2020 Bonds.

(A) Redemption Dates.

(i) Optional Redemption. The 2020 Bonds are subject to optional redemption from any source of available funds (other than Prepayments of the Special Tax by property owners), in whole or in part among maturities as specified by the City and by lot within a maturity, on any date on and after September 1, 20__ at the following respective redemption prices (expressed as percentages of the principal amount of the 2020 Bonds to be redeemed), plus accrued interest thereon to the date of redemption:

<u>Redemption Dates</u>	<u>Redemption Price</u>
September 1, 20__ through August 31, 20__	103%
September 1, 20__ through August 31, 20__	102
September 1, 20__ through August 31, 20__	101
September 1, 20__ and any date thereafter	100

(ii) Mandatory Redemption From Prepayments. The 2020 Bonds are subject to mandatory redemption from Prepayments of the Special Tax by property owners, in

whole or in part among maturities as specified by the City and by lot within a maturity, on any Interest Payment Date at the following respective redemption prices (expressed as percentages of the principal amount of the 2020 Bonds to be redeemed), plus accrued interest thereon to the date of redemption:

<u>Redemption Dates</u>	<u>Redemption Price</u>
Interest Payment Dates through March 1, 20__	103%
September 1, 20__ and March 1, 20__	102
September 1, 20__ and March 1, 20__	101
September 1, 20__ and Interest Payment Dates thereafter	100

(iii) Mandatory Sinking Payment Redemption. The Term 2020 Bonds maturing September 1, 20__ are subject to mandatory sinking payment redemption in part on September 1, 20__ and on each September 1 thereafter to maturity, by lot, at a redemption price equal to one hundred percent (100%) of the principal amount thereof to be redeemed, without premium, in the aggregate respective principal amounts as set forth in the following table:

Mandatory Redemption Date (Sept. 1)	Sinking Fund Payment
20__	\$
20__	
20__	
20__	
20__ (maturity)	

The Term 2020 Bonds maturing September 1, 20__ are subject to mandatory sinking payment redemption in part on September 1, 20__ and on each September 1 thereafter to maturity, by lot, at a redemption price equal to one hundred percent (100%) of the principal amount thereof to be redeemed, without premium, in the aggregate respective principal amounts as set forth in the following table:

Mandatory Redemption Date (Sept. 1)	Sinking Fund Payment
20__	\$
20__	
20__	
20__	
20__ (maturity)	

The amounts in the foregoing tables shall be reduced pro rata, at the direction of the City in an Officer's Certificate, as a result of any prior partial optional or mandatory redemption of the Term 2019 Bonds pursuant to clause (A)(i) or clause (A)(ii) above. In the event of a redemption pursuant to clause (A)(i) or clause (A)(ii) above, the City shall provide the Fiscal Agent with a revised sinking fund schedule giving effect to the redemption so completed.

In lieu of redemption under this Section 10.04, moneys in the Bond Fund may be used and withdrawn by the Fiscal Agent for purchase of Outstanding 2020 Bonds, upon the filing with the Fiscal Agent of an Officer's Certificate requesting such purchase, at public or private sale as and when, and at such prices (including brokerage and other charges) as such Officer's

Certificate may provide, but in no event may 2020 Bonds be purchased at a price in excess of the principal amount thereof, plus interest accrued to the date of purchase.

(B) Notice to Fiscal Agent. The City shall give the Fiscal Agent an Officer's Certificate containing notice of its intention to redeem 2020 Bonds pursuant to clause (A)(i) or clause (A)(ii) not less than 45 days prior to the applicable redemption date.

(C) Redemption Procedure by Fiscal Agent; Rescission; Effect of Redemption. The redemption provisions set forth in Section 2.03(C) and Section 2.03(D) shall apply to the 2020 Bonds as if set forth herein.

Section 10.05. Form of 2020 Bonds; Authentication and Delivery.

(A) Form of 2020 Bonds. The 2020 Bonds, the form of Fiscal Agent's certificate of authentication, and the form of assignment to appear thereon, shall be substantially in the respective forms set forth in Exhibit C attached hereto and by this reference incorporated herein, with necessary or appropriate variations, omissions and insertions, as permitted or required by this Agreement and the Act.

(B) Execution of 2020 Bonds. The 2020 Bonds shall be executed on behalf of the City by the Mayor and the City Clerk of the City who are in office on the date of adoption of this Agreement or at any time thereafter, and the seal of the City may be impressed, imprinted or reproduced by facsimile signature thereon. If any officer whose signature appears on any 2020 Bond ceases to be such officer before delivery of the 2020 Bonds to the Owner, such signature shall nevertheless be as effective as if the officer had remained in office until the delivery of the 2020 Bonds to the Owner. Any 2020 Bond may be signed and attested on behalf of the City by such persons as at the actual date of the execution of such 2020 Bond shall be the proper officers of the City although at the nominal date of such 2020 Bond any such person shall not have been such officer of the City.

Only such of the 2020 Bonds as shall bear thereon a certificate of authentication in the form set forth in Exhibit C, manually or electronically executed and dated by the Fiscal Agent, shall be valid or obligatory for any purpose or entitled to the benefits of this Agreement, and such certificate of the Fiscal Agent shall be conclusive evidence that such 2020 Bonds have been duly authenticated and delivered hereunder and are entitled to the benefits of this Agreement.

(C) Authentication and Delivery of 2020 Bonds; Transfer and Exchange; Additional Provisions of the 2020 Bonds. At any time after the execution of Supplemental Agreement No. 1 and delivery by the City of an Officer's Certificate that the requirements of Section 5.17 for the issuance of the 2020 Bonds as Additional Bonds have been met, the City may issue the 2020 Bonds for the District in the aggregate principal amount set forth in Section 10.02 and deliver the 2020 Bonds to the Original Purchaser. The Authorized Officers of the City are hereby authorized and directed to deliver any and all documents and instruments necessary to cause the issuance of the 2020 Bonds in accordance with the provisions of the Act and this Agreement, as supplemented by Supplemental Agreement No. 1, to authorize the payment of 2020 Costs of Issuance and costs of the Project by the Fiscal Agent from the proceeds of the 2020 Bonds and to do and cause to be done any and all acts and things necessary or convenient for delivery of the 2020 Bonds to the Original Purchaser.

The provisions of Sections 2.06 through 2.13 of the Original Fiscal Agent Agreement shall apply to the 2020 Bonds in a like manner as applied to the 2019 Bonds.

Section 10.06. Application of Proceeds of Sale of 2020 Bonds.

(A) Proceeds of 2020 Bonds. The proceeds of the purchase of the 2020 Bonds by the Original Purchaser in the amount of \$_____, calculated as the principal amount of the 2020 Bonds, less an underwriter's discount of \$_____, plus/less a [net] original issue premium/discount of \$_____, shall be paid to the Fiscal Agent, who shall forthwith set aside, pay over and deposit such proceeds on the Closing Date as follows:

- (i) Deposit in the 2020 Improvement Account of the Improvement Fund \$_____;
- (ii) Deposit in the 2020 Reserve Account of the Reserve Fund \$_____;
- (iii) Deposit in the 2020 Capitalized Interest Account of the Bond Fund \$_____; and
- (iv) Deposit in the 2020 Costs of Issuance Fund \$_____.

(B) 2020 Reserve Account. In accordance with Section 4.03(A), the Fiscal Agent shall establish a separate subaccount within the Reserve Fund known as the "2020 Reserve Account," into which the amounts set forth in Section 10.06(A)(ii) shall be deposited. The 2019 Reserve Account and the 2020 Reserve Account shall be held by the Fiscal Agent within the Reserve Fund, and administered as set forth in the Agreement.

(C) Additional Funds and Accounts. The Fiscal Agent may, in its discretion, establish a temporary fund or account in its books and records to facilitate transfers required under this Section 10.06.

Section 10.07. 2020 Costs of Issuance Fund. There is hereby established a separate fund to be known as the "2020 Costs of Issuance Fund", which shall be held by the Fiscal Agent in trust. Amounts in the Costs of Issuance Fund shall be disbursed from time to time to pay 2020 Costs of Issuance, as set forth in an Officer's Certificate containing respective amounts to be paid to the designated payees, signed by the Chief Financial Officer or a designee thereof and delivered to the Fiscal Agent. The Fiscal Agent shall pay all 2020 Costs of Issuance upon receipt of an invoice from any such payee which requests payment in an amount which is less than or equal to the amount set forth with respect to such payee in such Officer's Certificate, or upon receipt of an Officer's Certificate requesting payment of a 2020 Costs of Issuance not listed on the initial Officer's Certificate delivered to the Fiscal Agent on the Closing Date. The Fiscal Agent shall maintain the 2020 Costs of Issuance Fund for a period of 45 days from the Closing Date and then shall transfer any moneys remaining therein, including any investment earnings thereon, to the 2020 Improvement Account. Thereafter, every invoice received by the Fiscal Agent shall be paid from amounts on deposit in the 2020 Improvement Account and the Fiscal Agent shall close the 2020 Costs of Issuance Fund. Moneys in the 2020 Costs of Issuance Fund shall be invested and deposited in accordance with Section 6.01. Interest earnings and profits resulting from said investment shall be retained by the Fiscal Agent in the 2020 Costs of Issuance Fund to be used for the purposes of such fund.

Section 10.08. Procedure for Disbursement of 2020 Improvement Account.

(A) Disbursements. Disbursements from the 2020 Improvement Account shall be made by the Fiscal Agent according to the procedure set forth in Section 3.04, and an Officer's Certificate substantially in the form of Exhibit B to the Agreement (except that in such Officer's Certificate, reference shall be made to the 2020 Improvement Account and to the 2020 Bonds).

(B) Investment. Moneys in the Improvement Fund and the accounts established thereunder shall be invested and deposited in accordance with Section 6.01. Interest earnings and profits from the investment of amounts in the Improvement Fund shall be retained by the Fiscal Agent in the Improvement Fund to be used for the purposes of the Improvement Fund.

(C) Closing of Fund. Upon the filing of an Officer's Certificate stating that the portion of the Project to be financed from the Improvement Fund and the accounts established thereunder has been completed and that all costs of such portion of the Project have been paid or are not required to be paid from the Improvement Fund, the Fiscal Agent shall transfer the amount, if any, remaining in the Improvement Fund to the Bond Fund for application to the payment of principal of and interest on the Bonds in accordance with Section 4.02 and the Improvement Fund shall be closed.

Section 10.09. Security for 2020 Bonds. The 2020 Bonds shall be Additional Bonds which shall be secured in the manner and to the extent set forth in Articles IV and V, and in this Article X.

Section 10.10. Effect of this Article X. Except as in this Article X expressly provided or except to the extent inconsistent with any provision of this Article X, the 2020 Bonds shall be deemed to be "Bonds" under and within the meaning of Section 1.03, and every term and condition contained in the foregoing provisions of this Agreement shall apply to the 2020 Bonds with full force and effect, with such omissions, variations and modifications thereof as may be appropriate to make the same conform to this Article X.

SECTION 2. Attachment of Exhibit C. The Original Fiscal Agent Agreement is hereby further amended by incorporating therein an Exhibit C setting forth the form of the 2020 Bonds, which shall read in its entirety as set forth in Exhibit A attached hereto and hereby made a part hereof.

SECTION 3. Additional Amendments to Original Fiscal Agent Agreement. The Original Fiscal Agent Agreement is hereby further amended as follows:

(A) Section 3.04(A) of the Agreement is hereby amended by adding thereto, as a new third sentence thereof, the following: "There is also hereby created within the Improvement Fund a separate account designated as the "2020 Improvement Account" of the Improvement Fund, which account is hereby established for purposes of accounting for the use and disposition of 2020 Bond proceeds directed to the Improvement Fund pursuant to Section 10.06 and 10.08.

(B) Section 4.02(A) of the Agreement is hereby amended by adding thereto, as a new paragraph at the end thereof, the following: "There is also hereby created within the Bond Fund a "2020 Capitalized Interest Account" which account is hereby established for purposes of accounting for the disposition of 2020 Bonds, a portion of the proceeds of which will be deposited to such 2020 Capitalized Interest Account pursuant to Section 10.06. The amount deposited to the 2020 Capitalized Interest Account and any investment earnings thereon shall

be used solely to make payments on the 2020 Bonds, and the amount deposited to the 2020 Capitalized Interest Account and any investment earnings thereon shall be applied solely to make payments on the 2020 Bonds on September 1, 2020. Any excess amounts therein on September 2, 2020 shall be transferred to the Bond Fund, and the 2020 Capitalized Interest Account shall thereupon be closed.

(C) References in the Original Fiscal Agent Agreement to the 2019 Bonds which, if the context requires reference to the 2019 Bonds and any Additional Bonds in order to maintain the parity relationship of the 2019 Bonds and any Additional Bonds and the security therefor, shall be deemed to refer to "Bonds" as defined in the Original Fiscal Agent Agreement rather than "2019 Bonds."

SECTION 4. Partial Invalidity. If any section, paragraph, sentence, clause or phrase of this Supplemental Agreement No. 1 shall for any reason be held illegal, invalid or unenforceable, such holding shall not affect the validity of the remaining portions of this Supplemental Agreement No. 1. The City hereby declares that it would have entered into this Supplemental Agreement No. 1 and each and every other Section, paragraph, sentence, clause or phrase hereof and authorized the issue of the 2020 Bonds pursuant thereto irrespective of the fact that any one or more Sections, paragraphs, sentences, clauses, or phrases of this Supplemental Agreement No. 1 may be held illegal, invalid or unenforceable.

SECTION 5. Execution in Counterparts. This Supplemental Agreement No. 1 may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

SECTION 6. Governing Law. This Supplemental Agreement No. 1 shall be construed and governed in accordance with the laws of the State of California applicable to contracts made and performed in such State.

IN WITNESS WHEREOF, the City and the Fiscal Agent have caused this Supplemental Agreement No. 1 to Fiscal Agent Agreement to be executed as of _____ 1, 2020.

CITY OF ROSEVILLE, a municipal corporation,
for and on behalf of the City of Roseville
Villages at Sierra Vista Community Facilities
District No. 1 (Public Facilities)

**THE BANK OF NEW YORK MELLON
TRUST COMPANY, N.A.**, as *Fiscal Agent*

By: _____
Vice President

By: _____
DOMINICK CASEY
City Manager

ATTEST:

By: _____
SONIA OROZCO
City Clerk

APPROVED AS TO FORM:

By: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:

By: _____
DENNIS KAUFFMAN
Chief Financial Officer

EXHIBIT A TO SUPPLEMENTAL AGREEMENT NO. 1 TO FISCAL AGENT AGREEMENT

**EXHIBIT C TO ORIGINAL FISCAL AGENT AGREEMENT
FORM OF 2020 BONDS**

UNITED STATES OF AMERICA
STATE OF CALIFORNIA

No. _____

\$ _____

CITY OF ROSEVILLE
VILLAGES AT SIERRA VISTA
COMMUNITY FACILITIES DISTRICT NO. 1 (PUBLIC FACILITIES)
SPECIAL TAX BOND
SERIES 2020

INTEREST RATE: MATURITY DATE: BOND DATE: CUSIP:
September 1, _____, 2020

REGISTERED OWNER: CEDE & CO.

PRINCIPAL AMOUNT: _____ DOLLARS

The City of Roseville (the "City") for and on behalf of the City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) (the "District"), for value received, hereby promises to pay solely from the Special Tax (as hereinafter defined) to be collected in the District or amounts in certain funds and accounts held under the Agreement (as hereinafter defined), to the Registered Owner named above, or registered assigns (the "Owner"), on the Maturity Date set forth above, unless redeemed prior thereto as hereinafter provided, the Principal Amount set forth above, and to pay interest on such principal amount from the Bond Date shown above, or from the most recent Interest Payment Date (as hereinafter defined) to which interest has been paid or duly provided for, semiannually on March 1 and September 1, commencing September 1, 2020 (the "Interest Payment Dates"), at the Interest Rate set forth above, until the principal amount hereof is paid or made available for payment. The principal of this 2020 Bond is payable to the Owner hereof in lawful money of the United States of America upon presentation and surrender of this 2020 Bond at a designated corporate trust office of The Bank of New York Mellon Trust Company, N.A. in San Francisco, California (the "Fiscal Agent"). Interest on this 2020 Bond shall be paid by check of the Fiscal Agent mailed by first class mail on each Interest Payment Date to the Owner hereof as of the close of business on the 15th day of the month preceding the month in which the Interest Payment Date occurs (the "Record Date") at such Owner's address as it appears on the registration books maintained by the Fiscal Agent, or by wire transfer made on such Interest Payment Date upon written instructions delivered to the Fiscal Agent by the applicable Record Date of any Owner of \$1,000,000 or more in aggregate principal amount of 2020 Bonds.

This 2020 Bond is one of a duly authorized issue of bonds approved by resolution of the City Council of the City on _____, 2020 (the "Resolution"), pursuant to the Mello-Roos

Community Facilities Act of 1982, as amended, Sections 53311, *et seq.*, of the California Government Code (the "Mello-Roos Act") for the purpose of providing moneys for the construction and acquisition of improvements within the District, and is one of the bonds designated "City of Roseville Villages at Sierra Vista Community Facilities District No. 1 (Public Facilities) Special Tax Bonds Series 2020" (the "2020 Bonds"). The issuance of the 2020 Bonds and the terms and conditions thereof are provided for by a Fiscal Agent Agreement, dated as of July 1, 2019, as amended and supplemented by a Supplemental Agreement No. 1 to Fiscal Agent Agreement dated as of _____, 1, 2020 (together, the "Agreement"), by and between the City and the Fiscal Agent and this reference incorporates the Agreement herein, and by acceptance hereof the Owner of this 2020 Bond assents to said terms and conditions. The Agreement is authorized under, this 2020 Bond is issued under and both are to be construed in accordance with, the laws of the State of California.

Pursuant to the Mello-Roos Act, the Agreement and the Resolution, the principal of and interest on this 2020 Bond are payable, on parity with previously issued bonds of the District, solely from the Special Tax Revenues and the amounts in certain funds held under the Agreement. "Special Tax Revenues" means the proceeds of the facilities special tax ("Special Taxes") levied under the Mello-Roos Act in the District that are received by the City, including all scheduled payments and delinquent payments thereof, interest thereon and proceeds of the redemption or sale of property sold as a result of foreclosure of the lien of the special taxes, net of a 1% administration charge of the County (as such charge may be changed in the future), but not including interest in excess of the interest due on the Bonds or any penalties collected in connection with any such foreclosure.

Interest on this 2020 Bond shall be payable from the Interest Payment Date next preceding the date of authentication hereof, unless (i) it is authenticated on an Interest Payment Date, in which event it shall bear interest from such Interest Payment Date, or (ii) such date of authentication is after a Record Date but on or prior to an Interest Payment Date, in which event interest will be payable from such Interest Payment Date, or (iii) such date of authentication is prior to the first Record Date, in which event interest will be payable from the 2020 Bond Date shown above; provided however, that if at the time of authentication of this 2020 Bond, interest is in default hereon, this 2020 Bond shall bear interest from the Interest Payment Date to which interest has previously been paid or made available for payment hereon.

Any tax for the payment hereof shall be limited to the Special Tax, except to the extent that provision for payment has been made by the City as may be permitted by law. The 2020 Bonds do not constitute obligations of the City for which the City is obligated to levy or pledge, or has levied or pledged, general or special taxation other than described herein above.

The 2020 Bonds are subject to optional redemption from any source of available funds (other than Prepayments of the Special Tax by property owners), in whole or in part among maturities as specified by the City and by lot within a maturity, on any date on and after September 1, 20__ at the following respective redemption prices (expressed as percentages of the principal amount of the 2020 Bonds to be redeemed), plus accrued interest thereon to the date of redemption:

<u>Redemption Dates</u>	<u>Redemption Price</u>
September 1, 20__ through August 31, 20__	103%
September 1, 20__ through August 31, 20__	102
September 1, 2027 through August 31, 20__	101

September 1, 20__ and any date thereafter

100

The 2020 Bonds are subject to mandatory redemption from Prepayments of the Special Tax by property owners, in whole or in part among maturities as specified by the City and by lot within a maturity, on any Interest Payment Date at the following respective redemption prices (expressed as percentages of the principal amount of the 2020 Bonds to be redeemed), plus accrued interest thereon to the date of redemption:

<u>Redemption Dates</u>	<u>Redemption Price</u>
Interest Payment Dates through March 1, 20__	103%
September 1, 20__ and March 1, 20__	102
September 1, 20__ and March 1, 20__	101
September 1, 20__ and Interest Payment Dates thereafter	100

The Term 2020 Bonds maturing September 1, 20__ are subject to mandatory sinking payment redemption in part on September 1, 20__ and on each September 1 thereafter to maturity, by lot, at a redemption price equal to one hundred percent (100%) of the principal amount thereof to be redeemed, without premium, in the aggregate respective principal amounts as set forth in the following table:

Mandatory Redemption Date (Sept. 1)	Sinking Fund Payment
20__	\$
20__	
20__	
20__	
20__ (maturity)	

The Term 2020 Bonds maturing September 1, 20__ are subject to mandatory sinking payment redemption in part on September 1, 20__ and on each September 1 thereafter to maturity, by lot, at a redemption price equal to one hundred percent (100%) of the principal amount thereof to be redeemed, without premium, in the aggregate respective principal amounts as set forth in the following table:

Mandatory Redemption Date (Sept. 1)	Sinking Fund Payment
20__	\$
20__	
20__	
20__	
20__ (maturity)	

The amounts in the foregoing tables shall be reduced pro rata, at the direction of the City in an Officer's Certificate, as a result of any prior partial optional or mandatory redemption of the Term 2020 Bonds.

Notice of redemption with respect to the 2020 Bonds to be redeemed shall be given to the Owners thereof, in the manner, to the extent and subject to the provisions of the Agreement.

This 2020 Bond shall be registered in the name of the Owner hereof, as to both principal and interest. Each registration and transfer of registration of this 2020 Bond shall be entered by the Fiscal Agent in books kept by it for this purpose and authenticated by its manual signature upon the certificate of authentication endorsed hereon.

No transfer or exchange hereof shall be valid for any purpose unless made by the registered owner, by execution of the form of assignment endorsed hereon, and authenticated as herein provided, and the principal hereof, interest hereon and any redemption premium shall be payable only to the registered owner or to such Owner's order. The Fiscal Agent shall require the Owner requesting transfer or exchange to pay any tax or other governmental charge required to be paid with respect to such transfer or exchange. No transfer or exchange hereof shall be required to be made (i) within 15 days prior to the date established by the Fiscal Agent for selection of 2020 Bonds for redemption or (ii) with respect to a 2020 Bond after such 2020 Bond has been selected for redemption.

The Agreement and the rights and obligations of the City thereunder may be modified or amended as set forth therein. The principal of the 2020 Bonds is not subject to acceleration upon a default under the Agreement or any other document. This 2020 Bond shall not become valid or obligatory for any purpose until the certificate of authentication hereon endorsed shall have been dated and manually signed by the Fiscal Agent. It is hereby certified, recited and declared that all acts, conditions and things required by law to exist, happen and be performed precedent to and in the issuance of this 2020 Bond have existed, happened and been performed in due time, form and manner as required by law, and that the amount of this 2020 Bond, together with all other indebtedness of the City, does not exceed any debt limit prescribed by the laws or Constitution of the State of California.

Unless this 2020 Bond is presented by an authorized representative of The Depository Trust Company to the Fiscal Agent for registration of transfer, exchange or payment, and any 2020 Bond issued is registered in the name of Cede & Co. or such other name as requested by an authorized representative of The Depository Trust Company and any payment is made to Cede & Co., ANY TRANSFER, PLEDGE OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL since the registered owner hereof, Cede & Co., has an interest herein.

IN WITNESS WHEREOF, the City of Roseville has caused this 2020 Bond to be dated _____, 2020, to be signed by the manual or facsimile signature of its Mayor and attested by the manual or facsimile signature of its City Clerk.

CITY OF ROSEVILLE, for and on behalf of the
CITY OF ROSEVILLE VILLAGES AT SIERRA
VISTA COMMUNITY FACILITIES DISTRICT
NO. 1 (PUBLIC FACILITIES)

By: _____
Mayor

By: _____
City Clerk

FISCAL AGENT'S CERTIFICATE OF AUTHENTICATION

This is one of the 2020 Bonds described in the Resolution and the Agreement.

Dated: _____, 2020

**THE BANK OF NEW YORK MELLON
TRUST COMPANY, N.A., as *Fiscal Agent***

By: _____
Authorized Signatory

ASSIGNMENT

FOR VALUE RECEIVED, the undersigned do(es) hereby sell, assign and transfer unto

(Name, address and Tax identification Number of Assignee)

the within-mentioned registered Bond and hereby irrevocably constitute(s) and appoint(s)

_____, attorney, _____
to transfer the same on the registration books of the Fiscal Agent with full power of substitution
in the premises.

Dated: _____

Signature Guaranteed:

NOTE: Signature(s) must be guaranteed by a
member firm of the New York Stock Exchange or a
commercial bank or trust company.

NOTE: The signature(s) on this Assignment must
correspond with the name(s) as written on the face of
the within Bond in every particular without alteration
or enlargement or any change whatsoever.



COUNCIL COMMUNICATION

CC #: 0851
File #: 0800-02

Title: Integrated Resource Plan - Professional Services Agreement Amendment
Contact: Sean Bigley 916-774-5513 sbigley@roseville.ca.us

Meeting Date: 7/1/2020
Item #: 8.2.

RECOMMENDATION TO COUNCIL

Staff recommends that the City Council adopt a resolution to approve the First Amendment to Professional Services Agreement with Stantec Consulting Services, Inc. and authorize the City Manager to execute it.

BACKGROUND

The City of Roseville is a full service city that owns and operates its own water, electric, wastewater, solid waste and recycled water utilities. The Environmental Utilities Department (EU) is responsible for the ongoing delivery of services and prospective planning for the water, wastewater, solid waste and recycled water utilities and is responsible for the management of the City's stormwater program.

In late 2018, EU issued a Request for Proposals (RFP) and had one responsive company, Stantec, Inc. that was eventually awarded a Professional Services Agreement by the Roseville City Council on December 5, 2018, to begin to develop EU's Integrated Resources Plan and related activities, as scoped.

In early 2019, EU, with Stantec's help, began the development of a comprehensive Integrated Resources Plan (IRP) that 1) documents current settings, service levels and resource portfolios in the water, wastewater and recycled water utilities and stormwater program; 2) considers a range of possible changed futures stemming from regulatory/legislative/judicial changes, environmental changes, climate change, and changing customer or business needs leading up to the year 2050; 3) develop a range of alternative program or project responses to meet changed conditions, for reduced, similar and enhanced service levels; 4) assemble a master plan of activities and projects over the 2050 planning period; and 5) summarize an integrated implementation plan to 2050 including the technical, operational, financial, legislative, educational, and customer strategies and tactics necessary for success.

Once completed, it is expected the IRP will be an embodiment of EU's collective institutional knowledge and a foundational document for how EU conducts business through 2050. As such,

cross-functional collaboration from senior to junior EU staff ranks is expected and encouraged in plan development.

This planning effort will span over approximately two years and has included a series of educational sessions on foundational utility operational factors, utility tools of the trade and a greater understanding of outside institutions, systems, frameworks and processes to allow for EU staff to participate in developing an IRP with a full context.

So far, EU staff have participated in and taught, with the assistance of Stantec, six learning sessions to provide the initial background and context to allow for the next sessions which will focus on planning and development of the IRP.

Additionally, Stantec, working with the EU Director and senior management staff, have deployed and received initial results of EU's organizational assessment, which is a key element for the upcoming planning effort and development of the IRP.

As these activities are completed, based on initial insights gathered, EU's Director and senior management staff would like to undertake some additional follow-up activities based on the outcomes of the organizational assessment and the learning sessions, as follows:

- Add up to four additional workshops, with up to 30 City staff, to further develop the water reliability assessment which is foundational to the IRP;
- Add budget to complete the Water Reliability Assessment Technical Memorandum;
- Add budget to further develop water supply portfolio options evaluation through up to three additional workshops, with up to 30 City staff, as well as complete the Water Reliability Enhancement Options Technical Memorandum;
- Add up to two additional workshops on the development of an implementation strategy for the IRP, with up to 30 City staff, once finished;
- Add up to four additional workshops, with up to 30 City staff, to develop and complete the IRP document;
- Add budget to complete the Executive Summary Technical Memorandum and related presentation materials which will include key conclusions that will guide City water management planning decisions through 2050.
- Related project management fees associated with the work outlined above and as detailed in the attached amended scope of services.

The EU Director and senior EU management believe these additional activities are necessary and key to the development of an IRP that will meet the department's long-range water resources planning needs relative to current and future opportunities and threats, organizational optimization, leadership development and succession planning.

FISCAL IMPACT

The First Amendment to Professional Services Agreement with Stantec Consulting Services, Inc., for development of an Integrated Resource Plan for the Environmental Utilities Department (EU) with a modified Scope of Services and an increase to the not-to-exceed amount from \$339,752 to \$753,752, is budgeted in FY2020-21 and funded from the Water Construction Fund.

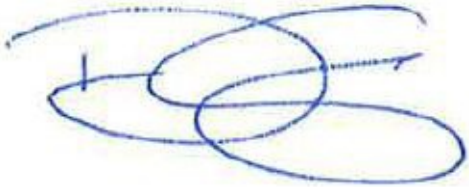
ENVIRONMENTAL REVIEW

The California Environmental Quality Act (CEQA) does not apply to activities that will not result in a direct or reasonably foreseeable indirect physical change in the environment, or is otherwise not considered a project as defined by CEQA Statute §21065 and CEQA State Guidelines §15060(c)(3) and §15378. An amendment to a professional services agreement meets the above criteria and is not subject to CEQA. No additional environmental review is required.

Respectfully Submitted,

Sean Bigley, Assistant Director Environmental Utilities

Richard Plecker, Director Environmental Utilities



Dominick Casey, City Manager

ATTACHMENTS:

Description

Resolution 20-263

First Amendment to Professional Services Agreement

RESOLUTION NO. 20-263

APPROVING A FIRST AMENDMENT TO PROFESSIONAL SERVICES AGREEMENT, BY AND BETWEEN THE CITY OF ROSEVILLE AND STANTEC CONSULTING SERVICES, INC., AND AUTHORIZING THE CITY MANAGER TO EXECUTE IT ON BEHALF OF THE CITY OF ROSEVILLE

WHEREAS, a first amendment to professional services agreement for an Integrated Resource Plan, by and between the City of Roseville and Stantec Consulting Services, Inc., has been reviewed by the City Council; and

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Roseville that said first amendment is hereby approved and that the City Manager is authorized to execute it on behalf of the City of Roseville.

PASSED AND ADOPTED by the Council of the City of Roseville this ____ day of _____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:

NOES COUNCILMEMBERS:

ABSENT COUNCILMEMBERS:

MAYOR

ATTEST:

City Clerk

**FIRST AMENDMENT TO
PROFESSIONAL SERVICES AGREEMENT**

Project: Integrated Resource Plan

THIS FIRST AMENDMENT TO AGREEMENT is made and entered into this ____ day of _____, 20__, by and between the City of Roseville, a municipal corporation (“CITY”), and Stantec Consulting Services, Inc., a New York corporation (“CONSULTANT”); and

W I T N E S S E T H:

WHEREAS, CITY and CONSULTANT previously entered into a Professional Services Agreement dated December 5, 2018 (“Agreement”) regarding the development of an Integrated Resource Plan and related services (“Project”); and

WHEREAS, CITY desires to amend the Agreement to include the additional services as described in CONSULTANT’s letter dated April 20, 2020, which is attached hereto as Exhibit “A” and incorporated herein by reference; and

WHEREAS, CONSULTANT is willing and able to provide such additional services.

NOW, THEREFORE, the parties agree as follows:

1. CONSULTANT shall provide additional services as described in Exhibit “A” of this First Amendment to Agreement.
2. Paragraph 2 of the Agreement is amended by adding an additional paragraph to read as follows:

“CITY shall pay four hundred fourteen thousand dollars (\$414,000), in consideration of the additional services as set forth in Exhibit “A” to the First Amendment to Agreement. This brings the total not to exceed contract amount to seven hundred fifty-three thousand, seven hundred fifty-two dollars (\$753,752).”

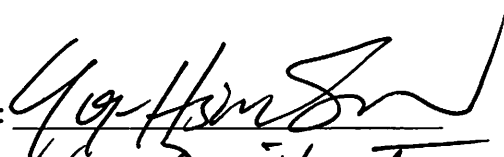
3. All other provisions of the Agreement shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, the City of Roseville, a municipal corporation, has authorized the execution of this First Amendment to Agreement in duplicate by its City Manager and attested to by its City Clerk under the authority of Resolution No. _____, adopted by the Council of the City of Roseville on the ____ day of _____, 20__, and CONSULTANT has caused this First Amendment to Agreement to be executed.

CITY OF ROSEVILLE, a
municipal corporation

STANTEC CONSULTING SERVICES,
INC., a New York corporation

BY: _____
DOMINICK CASEY
City Manager

BY: 
its: Vice President

ATTEST:

and

BY: _____

BY: _____
SONIA OROZCO
City Clerk

its: _____

[SIGNATURES CONTINUED ON FOLLOWING PAGE]

APPROVED AS TO FORM:

BY: _____
ROBERT R. SCHMITT
City Attorney

APPROVED AS TO SUBSTANCE:

BY:  _____
RICHARD D. PLECKER
Environmental Utilities Director

EXHIBIT “A”

SCOPE OF SERVICES – Amendment #1

Description of Services

Stantec Consulting Services Inc. (hereinafter called “CONSULTANT”) agrees to perform the following services: Development of an Integrated Resource Plan (IRP) and Related Services.

Background

The City of Roseville’s (CITY) Environmental Utilities Department (EU) is requesting the development of an IRP and related services. The process for developing the IRP is broken into 6 steps that are organized into 5 Tasks:

- Step 1: Organization Situation Assessment and Process Design (Task 4)
- Step 2: Water Reliability Assessment (Task 2)
- Step 3: Options Identification (Task 3)
- Step 4: Options Evaluation (Task 3)
- Step 5: Implementation Strategy (Task 1)
- Step 6: IRP Preparation (Task 1)
- As needed implementation support (Task 5)

These 5 planning and technical tasks in this Scope of Services are numbered consistent with that in the Request for Proposals (dated 8 Aug 2018). In addition to those 5 tasks, a project management task is included as Task 6.

Amendment #1 revises the original Scope of Services (Agreement executed 5 Dec 2018, Resolution No. 18-483) to reflect additional work to be performed by CONSULTANT, based on discussions with and direction from the CITY Project Manager (PM). Included services are described below.

Task 1 – IRP Executive Summary and Related Overarching Elements

The purpose of the IRP Executive Summary and related elements is to set the purpose and objectives of the IRP as it relates to EU’s planning goals to 2050. The deliverable will summarize the plan’s framework, objectives, and organization in a manner that executive-level staff and elected officials can get a quick and clear summary of the IRP. The project deliverables noted in Tasks 2, 3 and 4, will effectively become attachments to the IRP. CONSULTANT will:

IRP Development Step	Activity	Original Agreement (Dec 2018)	Amendment #1 (Apr 2020)
Step 5: Implementation Strategy	Develop implementation strategy for prioritized reliability enhancement options. The trade-off analysis of identified options evaluated in Step 4 (Task 3) will be developed, reviewed, and prioritized. Informational graphics and representations will be developed to best display the outcomes of the multi-factor evaluation. The implementation strategy will include sequencing of the prioritized options and key milestone and decision points for phasing.	X	
	Conduct up to two (2) workshops for implementation strategy development. Each workshop will be at least 3 hours in duration, EU staff will be involved in the development and presentation of workshop modules. Up to 30 CITY Management and EU staff are expected to participate.		X
Step 6: IRP Preparation	Prepare Draft IRP Executive Summary (ES). The Draft IRP ES will rely on outcomes from Tasks 2 – 5, incorporating findings from prepared Technical Memorandums (TM), to be included as attachments. It will be developed as a stand-alone document to memorialize IRP purposes, process, findings, and recommendations.	X	
	Prepare Final IRP ES. The Final ES will reflect CITY review feedback on the Draft IRP. Associated presentation and briefing materials will be prepared, if requested by the CITY PM.	X	
	Conduct up to two (2) workshops for IRP preparation. Each workshop will be at least 3 hours in duration. EU staff will be involved in the development and presentation of workshop modules. Up to 30 CITY Management and EU staff are expected to participate. Presenter and participant questions, input, and feedback will be coordinated and considered in coordination with the CITY PM.		X

Task 2.0 - Water Reliability Assessment

The purpose of the water supply reliability assessment is to evaluate the CITY's current and future water supply reliability needs, assess the risks and impact of current and future droughts (hydrological and regulatory), including the effects of climate change, and summarize the baselines risks and economic costs for the CITY associated with the a "no action" scenario. Assessment of the CITY's vulnerabilities in terms of its water supply reliability will also be conducted. Information and data needed to develop the vulnerability assessment will use of existing and readily available sources along with original analyses. The planning horizons for the assessment will be focused on 2020, 2035 and 2050. CONSULTANT will:

IRP Development Step	Activity	Original Agreement (Dec 2018)	Amendment #1 (Apr 2020)
Step 2: Water Reliability Assessment	Define Planning Scenarios. A range of possible futures will be identified that incorporate potential regulatory/legislative/judicial changes, environmental changes, climate change, and changing customer or business needs to the year 2050. These planning scenarios will be designed to cover a range of potential slow and fast growth rates for the CITY, and moderate to extreme drought conditions.	X	
	Conduct Water Supply Portfolio Analysis. The analysis will (1) develop an estimate of total water demands under existing and projected future demands, (2) estimate total source capacity and storage capacity, and (3) compare total source capacity with estimated water demands for existing and future demand conditions under various hydrologic conditions. Information on water rights and contract entitlements, groundwater production capacity, and recycled water will be summarized for this analysis, and the priority and place of use restrictions for surface water rights and reliability of contract entitlements will be assessed.	X	
	Inventory Major Water Infrastructure. Key water infrastructure assets will be inventoried along with a GIS-based map of major CITY and regional water infrastructure to identify the current ability to move water around the region. The resulting information will be used to characterize the adequacy of regional conveyance capacities and interconnections.	X	
	Determine CITY's Ideal Level of Service. Desired levels of service (or water supply reliability threshold) will be developed under drought conditions and level of risk tolerance with regard to water reliability. These thresholds will be used to measure the degree of vulnerability from the various threats.	X	
	Identify Potential Threats and Vulnerabilities. Water supply reliability vulnerabilities will be assessed under various conditions and organized into logical categories that facilitate identification and evaluation of potential mitigation and response actions.	X	
	Summarize Risks and Economic Costs of "Do Nothing" Option. A concise description of the water reliability (shortage) risks, economic costs, and lost economic opportunities for a "do nothing" option under each of planning scenarios will be developed. Graphical displays will be included.	X	
	Conduct up to two (2) workshops for the water reliability assessment.	X	

IRP Development Step	Activity	Original Agreement (Dec 2018)	Amendment #1 (Apr 2020)
	Modify initial two (2) workshops. Each workshop will be at least 3 hours in duration. EU staff will be involved in the development and presentation of workshop modules. Up to 30 CITY Management and EU staff are expected to participate. Presenter and participant questions, input, and feedback will be coordinated and considered in coordination with the CITY PM.		X
	Conduct up to four (4) additional workshops for the water reliability assessment. Each workshop will be at least 3 hours in duration. EU staff will be involved in the development and presentation of workshop modules. Up to 30 CITY Management and EU staff are expected to participate. Presenter and participant questions, input, and feedback will be coordinated and considered in coordination with the CITY PM.		X
	Prepare Draft Water Reliability Assessment TM. The Draft TM will summarize output from Step 2 and the technical workshops and be delivered electronically.	X	X
	Prepare Revised Draft TM. The Revised Draft TM will reflect CITY review feedback on the Draft TM and be delivered electronically.	X	X

Task 3 - Reliability Enhancement Options Evaluation

The reliability enhancement options evaluation will serve as input to the IRP development process, which will take an expansive look at potential actions and activities to improve water reliability. CONSULTANT will:

IRP Development Step	Activity	Original Agreement (Dec 2018)	Amendment #1 (Apr 2020)
Step 3: Options Identification	Develop comprehensive list of options for enhancing the CITY's water reliability that includes both already identified strategic options as well as new strategic options and combinations/permutations. Input from workshop participants will be used.	X	X
	Conduct preliminary screening of comprehensive list of options to identify major flaws or undesirable attributes of the compiled options, which will be eliminated from further consideration. Screening will use input from workshop participants.	X	X

IRP Development Step	Activity	Original Agreement (Dec 2018)	Amendment #1 (Apr 2020)
	Prepare Draft Reliability Enhancement Options Identification TM. The Draft TM will summarize output from Step 3 and the technical workshops and be delivered electronically.	X	X
	Prepare Revised Draft TM. The Revised Draft TM will reflect CITY review feedback on the Draft TM and be delivered electronically.	X	X
Step 4: Options Evaluation	Establish evaluation criteria and associated metrics for evaluation of options. A scoring process and prioritization methodology will be also developed. Input from workshop participants will be used.	X	X
	Evaluate options. Existing analyses, technical memorandum or studies, and costs and benefits information will be used to the maximum extent possible and practical, with original analyses incorporated, as needed. Results of these evaluations will be vetted with EU staff in technical workshops.	X	X
	Prioritize evaluated options. The prioritization process will be setup to facilitate prudent decision making through comparison of the varying degrees of complexity, uncertainty, cost, and acceptability of the options. Prioritization results will be vetted with EU staff in technical workshops.	X	X
	Prepare Draft Reliability Enhancement Options Evaluation TM. The Draft TM will summarize output from Step 4 and the technical workshops and be delivered electronically.	X	X
	Prepare Revised Draft TM. The Revised Draft TM will reflect CITY review feedback on the Draft TM and be delivered electronically.	X	X
Steps 3 and 4	Conduct up to two (2) workshops for the reliability enhancement options evaluation.	X	
	Modify initial two (2) workshops. Each workshop will be at least 3 hours in duration. EU staff will be involved in the development and presentation of workshop modules. Up to 30 CITY Management and EU staff are expected to participate. Presenter and participant questions, input, and feedback will be coordinated and considered in coordination with the CITY PM.		X

IRP Development Step	Activity	Original Agreement (Dec 2018)	Amendment #1 (Apr 2020)
	Conduct up to three (3) additional workshops for the reliability enhancement options evaluation. Each workshop will be at least 3 hours in duration. EU staff will be involved in the development and presentation of workshop modules. Up to 30 CITY Management and EU staff are expected to participate. Presenter and participant questions, input, and feedback will be coordinated and considered in coordination with the CITY PM.		X

Task 4 – Organization Situation Assessment and Process Design

The internal Situation Assessment (SA) conducted by CONSULTANT will be used to inform future project design phases, engagement, and collaboration; resulting in an appraisal of agency and stakeholder needs, wants, and values. CONSULTANT will:

IRP Development Step	Activity	Original Agreement (Dec 2018)	Amendment #1 (Apr 2020)
Step 1: Organization Situation Assessment and Process Design	Confirm key internal stakeholder voices that must be engaged in IRP development.	X	
	Establish planning goals for IRP development using existing plans and documents,	X	
	Conduct a multi-faceted internal situation assessment to measure organizational readiness for a new planning approach using tools such as surveys, interviews, and focus groups.	X	
	Provide opportunity for EU staff to learn about and give input on the results.	X	
	Prepare Draft TM. The Draft TM will summarize output from Step 1 and be delivered electronically.	X	
	Prepare Revised Draft TM. The Revised Draft TM will reflect CITY review feedback on the Draft TM and be delivered electronically.	X	

Task 5.0 – IRP Updates and Implementation Assistance

Original Agreement: At the request of the CITY and up to the budget authorized, CONSULTANT will (1) update part, or all, of the IRP, as needed to ensure that the document serves as a living strategy document for use by EU staff through 2050, and (2) provide IRP-related implementation support.

Amendment #1: No additional services.

Task 6.0 – Project Management

Original Agreement: CONSULTANT will manage the services under this Agreement such that the work is completed within the cost proposal stated (attached), in accordance with the project schedule, and in good quality. In this task, CONSULTANT will conduct project coordination and management for the duration of the Agreement including monthly project invoices and progress status summaries, team coordination, management of project budget and scope, etc.

Amendment #1: Anticipated duration of the Agreement is through December 31, 2021.

Summary of Deliverables

Task	Deliverables	Original Agreement (Dec 2018)	Amendment #1 (Apr 2020)
1	Draft IRP Executive Summary	X	X
	Final IRP Executive Summary	X	X
	Presentation and briefing materials	X	X
2	Draft and Revised Water Reliability Assessment TM (electronic format)	X	X
3	Draft and Revised Draft Reliability Enhancement Options Identification TM (electronic format).	X	X
	Draft and Revised Draft Reliability Enhancement Options Evaluation TM (electronic format)	X	X
4	Draft and Revised Draft Internal Situation Assessment and Process Design Summary (electronic format)	X	
5	IRP Updates (as needed)	X	
	IRP Implementation Support (as needed)	X	
6	Monthly project invoices and project status summaries (electronic format)	X	X

Budget

Task	Description	Original Agreement (Dec 2018)	Amendment #1 (Apr 2020)	Total Budget
1	IRP Executive Summary and Related Overarching Elements	\$81,465	\$24,000	\$105,465
2	Water Reliability Assessment	\$85,415	\$146,000	\$231,415
3	Reliability Enhancement Options Evaluation	\$107,053	\$234,000	\$341,053
4	Organization Situation Assessment	\$30,689	\$0	\$30,689
5	IRP Updates and Implementation Assistance	\$26,366	\$0	\$26,366
6	Project Management	\$8,764	\$10,000	\$18,764
	TOTAL	\$339,752	\$414,000	\$753,752

Project Contact Information

Vanessa Nishikawa, PE

Project Manager

Phone: (916) 418-8259

Email: vanessa.nishikawa@stantec.com

**OFFICER'S CERTIFICATE
of
STANTEC CONSULTING SERVICES INC.
A NEW YORK CORPORATION**

I, the undersigned, do hereby certify that:

1. I am the duly elected and acting **Assistant Secretary** of **Stantec Consulting Services Inc.**, a **New York** corporation (the "**Corporation**").
2. On **June 15, 2018**, the following resolution was adopted by the Corporation's Board of Directors:

BE IT RESOLVED THAT:

1. the Corporation hereby adopts the Signing Authority Policy, as modified or amended from time to time, of Stantec Inc.
2. execution of any documents for and on behalf of the Corporation shall be governed by the Signing Authority Policy, as modified or amended from time to time, of Stantec Inc.;
3. the Secretary or any of the Corporate Counsels of the Corporation be authorized, empowered and directed from time to time as required to facilitate the execution of contracts or submission of proposals, to sign, and to seal with the Corporate Seal, Certificates of the foregoing action evidencing the authority delegated in the Signing Authority Policy, as amended from time to time, of Stantec Inc.

Yung-Hsin Sun is a **Vice President** of the Corporation, and in that capacity is duly authorized to sign proposals and enter into agreements for professional services in accordance with the Corporation's Signing Authority Policy in connection with the following project:

**Integrated Resource Plan
for City of Roseville
Environmental Utilities Department**

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Corporation, this 22nd day of October 2018.

Corporate Seal:



Jeffrey P. Stone
Vice President and Associate General Counsel
Assistant Secretary

RESOLUTIONS OF THE DIRECTORS OF
STANTEC CONSULTING SERVICES INC.
PASSED AND ADOPTED BY THE DIRECTORS
THIS 15th DAY OF JUNE, 2018

The undersigned, being all the directors of Stantec Consulting Services Inc. (the "**Corporation**"), hereby consent to the adoption of the following resolutions in lieu of holding a regular Board of Directors' meeting.

WHEREAS, from time to time the Corporation is required to provide evidence that certain individual employees have been authorized and empowered by the Board to sign contracts or proposals on behalf of the Corporation; and

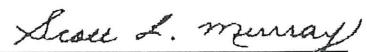
WHEREAS, the Corporation and its affiliated companies have developed, published and operate utilizing the Signing Authority Policy, as modified and amended from time to time, of Stantec Inc., which includes authority to sign contracts and proposals on behalf of the Corporation.

BE IT RESOLVED THAT:

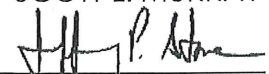
1. the Corporation hereby adopts the Signing Authority Policy, as modified or amended from time to time, of Stantec Inc.
2. execution of any documents for and on behalf of the Corporation shall be governed by the Signing Authority Policy, as modified or amended from time to time, of Stantec Inc.;
3. the Secretary or any of the Corporate Counsels of the Corporation be authorized, empowered and directed from time to time as required to facilitate the execution of contracts or submission of proposals, to sign, and to seal with the Corporate Seal, Certificates of the foregoing action evidencing the authority delegated in the Signing Authority Policy, as amended from time to time, of Stantec Inc.

This action may be signed in one or more counterparts, each of which shall be deemed an original and all of which shall constitute one instrument. Each director may execute this resolution in electronic format, either by facsimile or portable document format (PDF) and delivery of such executed document shall be proof of execution by the director thereto. This action shall be filed with the minutes of the proceedings of the Board of Directors and shall be effective as of the date set forth above.

THE UNDERSIGNED, being all of the directors of the Corporation entitled to attend and vote at a meeting of the directors of the Corporation, do hereby consent to and approve of the foregoing resolutions in writing as evidenced by their signatures hereto on the day and year first above written.



SCOTT L. MURRAY



JEFFREY P. STONE



COUNCIL COMMUNICATION

CC #: 0853

File #: 0400-04-09-1 & 0400-08 & 0400-06-02 & 0400-07

Title: Plaza at Blue Oaks - Mitigated Negative Declaration, Design Review Permit, Tentative Subdivision Map, and Tree Permit

Contact: Kinarik Shallow 916-746-1309 kshallow@roseville.ca.us

Meeting Date: 7/1/2020

Item #: 9.1.

RECOMMENDATION TO COUNCIL

Based on the May 14, 2020 Planning Commission hearing, staff recommends the City Council deny the appeal of the Planning Commission's approval of entitlements related to the Plaza at Blue Oaks project and take the following actions:

- A. Adopt the Plaza at Blue Oaks Initial Study/Mitigated Negative Declaration and the Mitigation Monitoring and Reporting Program; and
- B. Adopt a resolution denying the appeal from the May 14, 2020 approvals by the Planning Commission; adopting the four (4) findings of fact and approving the Design Review Permit subject to one hundred one (101) conditions of approval; adopting the three (3) findings of fact and approving the Tentative Subdivision Map subject to thirty-nine (39) conditions of approval; and adopting the two (2) findings of fact and approving the Tree Permit subject to twenty (20) conditions of approval.

BACKGROUND

This Council Communication provides a summary of the project, the Planning Commission hearing and the appeal. A detailed project background and evaluation is provided in the Planning Commission staff report, included as Attachment 1.

The 13.35-acre project site is located in the City's West Roseville Specific Plan (WRSP) area, at the northeast corner of Blue Oaks Boulevard and Fiddymont Road. The subject property is located on Parcel F-31 of the WRSP and has a zoning and General Plan land use designation of Community Commercial (CC). Per the WRSP, Parcel F-31 is anticipated for the development of a conventional community/neighborhood retail center.

The project entitlements include a Design Review Permit to construct an 82,100-square-foot shopping center consisting of a 35,000-square-foot anchor grocery store, a 12-pump gas station with a 3,500-square-foot-convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet. The project also includes a Tentative Subdivision Map to subdivide the 13.35-acre parcel into eight (8) lots and a Tree Permit to remove 28 native oak trees on the westerly portion of the site. Building elevations were not included for the convenience store building (Pad 3) and gas station canopy; therefore, a separate

Design Review Permit will be required in the future to ensure consistency with the overall project design and applicable design guidelines and standards.

An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for the project pursuant to the provisions of the California Environmental Quality Act (CEQA) (see Exhibit A). The IS/MND was released for a 20-day public review, from April 17, 2020 to May 7, 2020. The City received a letter, dated May 6, 2020, from the Law Office of Robert M. Bone representing an unincorporated association of Roseville community residents (the "Association") that challenged the adequacy of the environmental document. To summarize, the letter claims that the IS/MND is not in compliance with CEQA and does not consider feasible mitigation measures to reduce environmental impacts. Staff provided a response to the letter in a memorandum to the Planning Commission, dated May 13, 2020. The memorandum, along with the Association's letter, is included as Attachment 2. As detailed in staff's memorandum, the Association failed to offer any evidence that the initial study analysis is flawed or that available mitigation measures were not considered. As clearly stated in CEQA Guidelines Section 15384, "argument, speculation, [and] unsubstantiated opinion or narrative" is not substantial evidence. In addition, Ironhorse Law Group submitted a letter on behalf of the project applicant that supported the adequacy of the IS/MND and reiterated that the Association does not provide substantial evidence to support its claims (see Attachment 3).

The project was heard by the Planning Commission on May 14, 2020. Prior to the hearing, the City received a total of nine letters from the public in opposition of the project and two letters in support of the project. This correspondence is included as Attachment 4. The letters in opposition of the project cited similar concerns regarding the environmental impacts of the project.

Staff is confident the May 13th memorandum adequately addresses the issues raised. Mr. Bone submitted additional correspondence on behalf of the Association that focused on concerns with the overall project design. These concerns are identical to those raised in the appeal letter and are identified and addressed below.

At the Planning Commission hearing, Mr. Bone spoke in opposition of the project and repeated concerns stated in his prior correspondence, including effects of the project on the environment, the removal of oak trees, and increase in traffic. After receiving testimony, the Planning Commission deliberated on the item and ultimately voted to approve the Design Review Permit, Tentative Subdivision Map, and Tree Permit, with a vote of 6 aye, 0 nay, 1 absent.

On May 26, 2020, the City received an appeal of the Planning Commission's decision from the Law Office of Robert M. Bone representing the Association (see Attachment 5). The appeal provides the following grounds to reject the Planning Commission's decision: inconsistency with the General Plan, Bicycle Master Plan, and Pedestrian Master Plan; conflict with the City's site design guidelines; loss of oak trees; and inadequate environmental review.

This Council Communication responds to the issues raised in the appeal.

General Plan, Bicycle Master Plan, and Pedestrian Master Plan

The appeal states that the project does not support the City's bicycle and pedestrian use goals established in the General Plan.

The Circulation Element of the General Plan includes goals, policies, and implementation measures that guide the Bicycle Master Plan and the development of bikeways. The site is adjacent to two arterial roadways—Blue Oaks Boulevard and Fiddymont Road—both of which are designed with existing on-street bike lanes consistent with the Bicycle Master Plan. In addition, these roadways both include Class 1A sidewalks which are wider sidewalks capable of allowing slower bicycle and pedestrian travel as identified by the Bicycle Master Plan. Development of the project will not result in the elimination of these bike lanes and sidewalk facilities.

One of the goals of the Bicycle Master Plan is to create an environment that includes facilities that support and encourage commuter and recreational bicycle riding. The project achieves this goal by providing safe and secure short-term and long-term bike parking through the use of bike racks, bike lockers, and internal bike storage within the grocery store building. The bike locker is

conveniently located adjacent to the park-and-ride spaces located to the north of the Shops 1 building, which helps promote ridesharing (see Exhibit B – Site Plan).

One of the implementation measures identified in the Circulation Element is the City's Transportation System Management (TSM) Ordinance. The TSM Ordinance requires any project site with 50 or more employees to submit a TSM plan consisting of measures to reduce the number and length of home-to-work commute trips through actions such as ridesharing, flexible work hours, and support of public transportation. The Design Review Permit for the project includes condition #34, which requires the applicant/developer prepare a TSM plan to be reviewed and approved by the Transportation Commission (see Attachment 6 – Conditions of Approval).

The Pedestrian Master Plan is intended to guide and influence the design and development of public pedestrian walkways in the City. The project includes the completion of sidewalks and landscaping around the project perimeter. The sidewalks consist of pedestrian paths designed consistent with the WRSP that will provide access from surrounding uses. One of the goals of the Pedestrian Master Plan is to create streetscape environments that result in a pleasant environment for walking. The project achieves this goal through the building and landscape design. The buildings utilize pedestrian-scale materials and architectural details such as fabric awnings and green screen trellises. The landscaping consists of planter strips along the project frontage that separate pedestrians from vehicular traffic. Hedges and border shrubs are also proposed around the entire project perimeter to screen parking areas, service areas, future gas station canopies, and drive-through lanes from view.

The project includes several internal pedestrian pathways that will provide connections to the perimeter sidewalks and between buildings and parking areas. In addition to the sidewalks along the vehicle entries, pedestrian connections will be provided at locations where foot traffic is most likely to occur to provide easy access to the site. These connections are provided near the corner of Blue Oaks Boulevard and Fiddymont Road, near the corner of Fiddymont Road and Harvey Way, and along Oak Meadow Drive. The project will utilize stamped and decorative pavement in key areas and pathways to define the pedestrian environment.

Based on these reasons, staff finds the project is consistent with the goals and policies of the General Plan, Bicycle Master Plan, and Pedestrian Master Plan.

Community Design Guidelines

The appeal claims that the project does not comply with the City's Community Design Guidelines pertaining to site planning and building siting. Each of the three guidelines listed in the appeal is listed below and is followed by an explanation of how the project is consistent with the guideline.

CC-1: Buildings should be arranged to define, connect, and activate pedestrian edges and public spaces.

The project's pad buildings are located forward along Blue Oaks Boulevard and Fiddymont Road, behind the landscape frontages, while the parking lots are located internal to the site. The anchor grocery store is identified as Major 1 with in-line tenants on either side (identified as Shops 1 and Shops 2), and is located on the northern portion of the site. Although the front entrances to the pad buildings are oriented towards the interior of the site, away from the street, the street-facing elevations are enhanced with architectural detailing that activates the pedestrian edges. In addition, the buildings are arranged adjacent to pedestrian pathways connecting to the perimeter sidewalks. This provides pedestrians easy access to the buildings. The pad buildings also feature outdoor patios that are arranged to provide views of the project landscaping, which helps provide a connection between the indoor and outdoor spaces.

CC-2: Buildings should be arranged to provide convenient access to transit stops.

The project site is located adjacent to a planned transit stop and bus shelter along Fiddymont Road, to the west of the Pad 5 building. As mentioned above, the project arranges the pad buildings forward along the adjacent roadways and provides pedestrian pathways connecting from the perimeter sidewalks in to the site. This provides convenient access to the transit stop. In

addition, the WRSP designates this site as a Park-and-Ride lot. Park-and-Ride lots provide parking for commuters to leave their vehicles to meet carpools, vanpools, or access transit. The project provides 20 park-and-ride spaces to the north of the Shops 1 building, which is conveniently located in close proximity to the planned transit stop along Fiddymment Road.

CC-3: The relationship and orientation of buildings to arterial and other prominent roadways should be considered to enhance street frontage.

The building design is well articulated through the use of building projections and recesses, trellises, awnings, and window styles. The building materials primarily consist of cement plaster with brick veneer applied strategically to highlight areas of interest. The buildings include metal cornices and bands, modern glass and anodized aluminum storefronts, and metal trellises. Fabric awnings are used to complement these materials and soften the façades. The building colors consist of earth tones including olive green, gray, tan, and rust colored panels and banding.

Architectural treatment is applied to all building elevations. The project's street-facing elevations are enhanced with faux storefronts and other architectural detailing such as clerestory windows, green screen trellises, fabric awnings, and angled roof elements to provide a visually engaging streetscape.

Tree Removal

The appeal states that the trees should be landscaped into the project, rather than destroyed. Staff worked with the applicant to preserve as many of the trees to the extent feasible; however, a majority of the trees will require removal because they conflict with the proposed improvements. The loss of these trees was anticipated in the WRSP EIR, which identified the oak trees on the project site as being lost due to development. Of the 33 trees, 28 trees with a total aggregate diameter of 721 inches are proposed for removal to facilitate development of the site, while five (5) trees are proposed to be retained. Eight (8) of the trees proposed for removal were identified as having failed and being in a down and dead condition.

The trees that will be retained are located at the northwestern and southwestern corners of the site. These trees are incorporated into the landscape design of the project and will help to frame the intersections. The outdoor patios of Pad Buildings 4—6 will provide views of these oak trees. As discussed in the Tree Permit evaluation section of the Planning Commission staff report, the applicant will comply with the City's Tree Preservation Ordinance by mitigating for the loss of trees through a combination of on-site plantings and payment of in-lieu fees.

Environmental Review

Similar to the appellant's May 6, 2020 letter, the appeal states that the project fails to adequately inform the public about environmental impacts, alleging that the IS/MND prepared is not in compliance with CEQA and does not consider feasible mitigation measures to reduce environmental impacts, specifically as it relates to noise, air quality, and transportation. However, the appeal letter does not offer any evidence to support these claims. As mentioned in the May 13, 2020 memorandum to the Planning Commission, CEQA Guidelines Section 15384 states that "argument, speculation, [and] unsubstantiated opinion or narrative" is not substantial evidence. The Initial Study is supplemented with technical studies prepared by qualified consultants including an Environmental Noise Assessment, Health Risk Analysis, and a short-term traffic study, and the initial study analysis relies on two certified Specific Plan Environmental Impact Reports (EIRs)—the West Roseville Specific Plan EIR and the Amoroso Ranch Specific Plan EIR. Staff is confident that the Initial Study adequately discloses, evaluates, and mitigates the Project's environmental impacts and a Mitigated Negative Declaration is the appropriate environmental determination for this project; the Initial Study provides substantial evidence to support this finding.

FISCAL IMPACT

The project is not anticipated to result in any negative impacts to the City's General Fund. The project will generate construction jobs and employment opportunities associated with the future uses on the site. Once operational, the development will positively contribute to property, sales, and gas tax revenues.

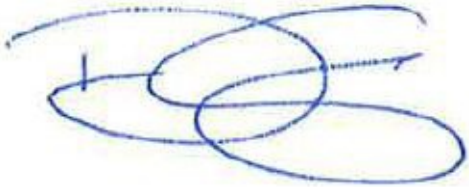
ENVIRONMENTAL REVIEW

An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared pursuant to the provisions of the California Environmental Quality Act (CEQA). The IS/MND was released for a 20-day public review, from April 17, 2020 to May 7, 2020. As mentioned previously, written comments on the adequacy of the document were received and are included in the memorandum to the Planning Commission, along with staff's responses to these comments (Attachment 2). At the May 14, 2020 Planning Commission meeting, the Planning Commission considered and adopted the Plaza at Blue Oaks Mitigated Negative Declaration and associated Mitigation Monitoring and Reporting Program. The IS/MND and associated Mitigation Monitoring and Reporting Program are included as Exhibit A.

Respectfully Submitted,

Kinarik Shallow, Associate Planner

Mike Isom, Development Services Director



Dominick Casey, City Manager

ATTACHMENTS:

Description

Attachment 1 Planning Commission Staff Report

Attachment 2 Memorandum to the Planning Commission, dated May 13, 2020

Attachment 3 Applicant Response to May 6, 2020 Letter

Attachment 4 Public Comments

Attachment 5 Appeal

Attachment 6 Conditions of Approval

Attachment 7 PCAPCD Rules and Regulations

Attachment 8 Applicant Response to Appeal Letter

Resolution No. 20-264

Exhibit A Initial Study/Mitigated Negative Declaration & Mitigation Monitoring and Reporting Program

Exhibit B Site Plan

Exhibit C Tentative Subdivision Map

Exhibit D Preliminary Grading & Drainage Plan

Exhibit E Preliminary Utility Plan

Exhibit F Elevations

Exhibit G Materials & Color Board

Exhibit H Photometric & Site Lighting Plan

Exhibit I Landscape Plan

Exhibit J Arborist Report

Exhibit K Preliminary Tree Impact Plan



**PLANNING DIVISION STAFF REPORT
PLANNING COMMISSION MEETING**

May 14, 2020

Prepared by: Kinarik Shallow, Associate Planner

ITEM 6.3: Design Review Permit, Tentative Subdivision Map, and Tree Permit – 1950 Blue Oaks Boulevard – WRSP PCL F-31 – The Plaza at Blue Oaks – File # PL17-0368

REQUEST

The applicant requests approval of a Design Review Permit to allow the construction of an 82,100-square-foot shopping center consisting of a 35,000-square-foot anchor grocery store, a 12-pump gas station with a 3,500-square-foot-convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet. The project includes a Tentative Subdivision Map to subdivide the 13.35-acre parcel into eight (8) lots and a Tree Permit to remove several native oak trees on the westerly portion of the site.

Applicant/Property Owner – Joe Zawidski, Signature Management Company

SUMMARY RECOMMENDATION

The Planning Division recommends that the Planning Commission take the following actions:

- A. Adopt the Plaza at Blue Oaks Initial Study/Mitigated Negative Declaration and the Mitigation Monitoring and Reporting Program;
- B. Adopt the four (4) findings of fact and approve the Design Review Permit subject to one hundred one (101) conditions of approval;
- C. Adopt the three (3) findings of fact and approve the Tentative Subdivision Map subject to thirty-nine (39) conditions of approval; and
- D. Adopt the two (2) findings of fact and approve the Tree Permit subject to twenty (20) conditions of approval.

SUMMARY OF OUTSTANDING ISSUES

There are no outstanding issues associated with this request. The applicant has reviewed and is in agreement with all recommended conditions of approval.

BACKGROUND

The 13.35-acre project site is located in the City's West Roseville Specific Plan (WRSP) area, at the northeast corner of Blue Oaks Boulevard and Fiddymont Road (see Figure 1). The WRSP was approved by the City on February 4, 2004 and established the land use designations and zoning standards for the specific plan area. The subject property is located on Parcel F-31 of the WRSP and has a zoning and General Plan land use designation of Community Commercial (CC). Per the WRSP, Parcel F-31 is anticipated for the development of a conventional community/neighborhood retail center.

The proposed project is a request for a Design Review Permit to construct a retail center consisting of a ±35,000 square-foot anchor grocery store, a 12-pump gas station with a ±3,500 square-foot convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet, as well as associated parking, lighting, and landscaping. The total building square footage will be approximately 82,100 square feet. The project also includes a Tentative Subdivision Map to subdivide the parcel into eight (8) lots and a Tree Permit to allow the removal of several native oak trees on the westerly portion of the site in order to facilitate development. The proposed Lot 2 on the

northeastern corner of the site encompasses the future second phase of the project and will require a separate Design Review Permit.

Figure 1: Project Location



SITE INFORMATION

Location: 1950 Blue Oaks Boulevard; APN 017-117-093-000

Total Size: 13.35 acres

Topography and Setting: The project site is currently undeveloped and is comprised mostly of annual grasslands and several native oak trees. The site varies in grade; it generally slopes downward on the southwestern and northwestern corners of the site, where the oak trees are located, and then becomes level with the roadways. There are significant grade changes from Fiddymont Road and Harvey Wy. to the project with these roadways being significantly higher than the project site. The site is also adjacent to Harvey Way to the north with an undeveloped High Density Residential (HDR) parcel beyond, Oak Meadow Drive to the east with Fiddymont Ranch Apartments beyond, Blue Oaks Boulevard to the south with single-family residential uses beyond, and Fiddymont Road to the west with a medical office building beyond. Street and utility improvements for the streets adjacent to the site were completed with the Fiddymont Phase 1 infrastructure improvements.

EVALUATION: DESIGN REVIEW PERMIT

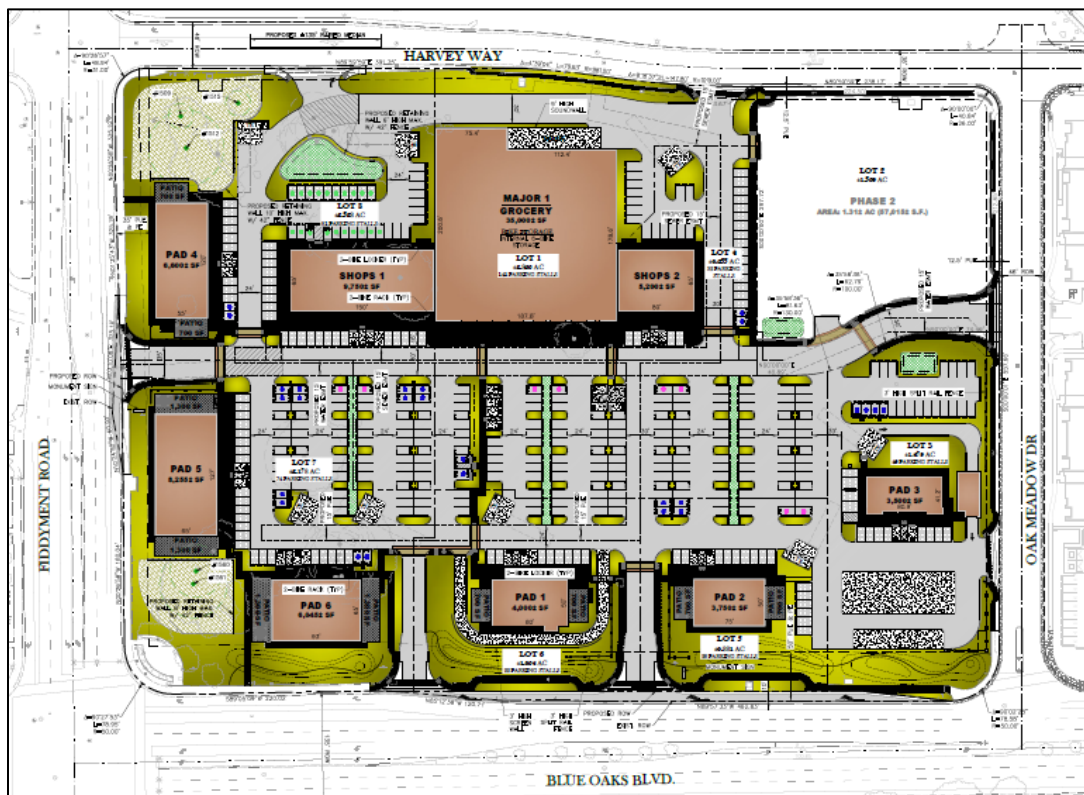
Section 19.78.060(B) of the City of Roseville Zoning Ordinance requires four findings of fact be made in order to approve a Design Review Permit. The four findings for approval of the Design Review Permit are listed below and are followed by an evaluation.

- 1. The project as approved preserves and accentuates the natural features of the property, such as open space, topography, trees, wetlands and water courses, provides adequate drainage for the project, and allows beneficial use to be made of the site for development.**
- 2. The project site design as approved provides open space, access, vehicle parking, vehicle, pedestrian and bicycle circulation, pedestrian walks and links to alternative modes of transportation, loading areas, landscaping and irrigation and lighting which results in a safe, efficient, and harmonious development and which is consistent with the applicable goals, policies and objectives set forth in the General Plan, the Community Design Guidelines and the West Roseville Specific Plan.**
- 3. The building design, including the materials, colors, height, bulk, size and relief, and the arrangement of the structures on the site, as approved is harmonious with other development and buildings in the vicinity and which is consistent with the applicable goals, policies and objectives set forth in the General Plan, the Community Design Guidelines and the West Roseville Specific Plan.**
- 4. The design of the public services, as approved, including, but not limited to, trash enclosures and service equipment are located so as not to detract from the appearance of the site, and are screened appropriately and effectively using construction materials, colors and landscaping that are harmonious with the site and the building designs.**

The evaluation of the Design Review Permit has been based on the applicable development and design standards within the City's Zoning Ordinance, the City's Community Design Guidelines (CDG), and the WRSP. Staff reviewed the proposal for consistency with all applicable standards and found the project to be consistent with the pertinent requirements and guidelines. The following sections of evaluation focus on areas of interest.

Site Planning & Building Siting: The project creates a commercial setting along the adjacent roadways by situating the pad buildings forward along the street (outside of the frontage easements) and locating the parking lots internal to the site (see Figure 2).

Figure 2: Site Plan



The anchor grocery store is identified as Major 1 with in-line tenants on either side (identified as Shops 1 and Shops 2), and is located on the northern portion of the site. A loading dock is proposed on the rear of the building that will be screened with a 9-foot tall wall to comply with the recommendations of the noise study (see Attachment 6 of Exhibit A, the Initial Study/Mitigated Negative Declaration). In addition, a 6-foot tall masonry wall with decorative stone pilasters will be located behind the proposed landscaping along Harvey Way to buffer the future HDR use to the north from the project's loading dock and on-site truck circulation areas.

Pad 1 is designed to accommodate a drive-through user. Although Pad 1 is located along Blue Oaks Boulevard, the drive-through aisle will be screened by a 3-foot tall wall and by the 50-foot wide landscape corridor, consistent with the CDG. Pad 3 is anticipated to be a convenience store with a gas station and drive-through car wash; however, building elevations for Pad 3 and the gas canopy were not included with the project materials. As such, a condition of approval has been added requiring a separate Design Review Permit for Pad 3 to ensure consistency with the overall project design and compliance with applicable design guidelines and standards (Condition #4 of the Design Review Permit).

Vehicle Access & Circulation: The proposed project includes two entries on Blue Oaks Boulevard, one entry on Fiddymment Road, two entries on Harvey Road, and two entries on Oak Meadow Drive. All driveways will be restricted to right turn ingress and egress only, with the exception of the eastern driveway along Harvey Road and the two driveways on Oak Meadow Drive, which will allow for both right and left turning movements. The proposed access and circulation design was evaluated in a technical memorandum prepared by Kimley-Horn, which is included as Attachment 7 of Exhibit A. This study was used to determine driveway spacing, entryway throat depths, turn pocket lengths, and other elements of access and circulation design for the proposed project. The project was also reviewed by the City Engineering and City Fire Department staff and was found to comply with refuse service standards and with emergency circulation requirements.

Pedestrian Access & Circulation: The project includes several internal pedestrian pathways and includes the completion of sidewalks and landscaping around the project perimeter. The sidewalks will provide access from the surrounding uses. Consistent with the WRSP, all frontage pedestrian paths will be a minimum of eight (8) feet in width along Blue Oaks Boulevard and Fiddymment Road, and a minimum of four (4) feet in width along Harvey Way and Oak Meadow Drive. In addition to the sidewalks along the vehicle entries, pedestrian connections will be provided at locations where foot traffic is most likely to occur to provide easy access to the site. These connections are provided near the corner of Blue Oaks Boulevard and Fiddymment Road, near the corner of Fiddymment Road and Harvey Way, and along Oak Meadow Drive. The project is consistent with the WRSP and CDG related to pedestrian access and circulation.

Parking: Based on the City's Zoning Ordinance parking standards for shopping centers, the project is required to provide a total of 411 parking spaces (one space per 200 square feet). As tenant spaces are leased, each tenant will utilize the applicable parking requirement for the use as outlined in the Zoning Ordinance. The project provides a total of 420 parking spaces, which exceeds the total parking requirement. Additionally, the WRSP designates the project site as a Park and Ride lot, with a total of 20 spaces required. The project provides these spaces to the north of the Shops 1 building, which is in close proximity to the transit stop along Fiddymment Road.

Architecture: The WRSP provides standards and guidelines for streetscapes and project design intent, but defers to the CDG for the evaluation of architecture and building design. Key guidelines related to architectural design within the CDG include direction to define development character through the use of a consistent design concept (CC-39), to use variation in wall planes and building form (CC-41), to provide articulation at main building entries (CC-44), to use a variation of colors and materials (CC-46), and to apply architectural treatment to all sides of a building facing public areas (CC-47).

The applicant has proposed a "contemporary prairie" design concept, with an emphasis on clean, horizontal lines and a complementary mix of materials. The building façades have overlapping rectangular forms and flat roofs of varying heights, which provide sufficient screening of mechanical rooftop equipment. Consistent

with the CDG, the building design is well articulated through the use of building projections and recesses, trellises, awnings, and window styles. The building materials primarily consist of cement plaster with brick veneer applied strategically to highlight areas of interest. The buildings include metal cornices and bands, modern glass and anodized aluminum storefronts, and metal trellises. Fabric awnings are used to complement these materials and soften the façades. The building colors consist of earth tones including olive green, gray, tan, and rust colored panels and banding. Figure 3 illustrates the front building elevation of the in-line building that consists of Major 1 (the anchor grocery store) and Shops 1 and 2. The main building entry areas are defined by forward presentation, variation in the roofline, and aluminum storefront windows. The variation in colors and materials combined with the variation in wall planes create texture and depth in the façade.

Figure 3: Major 1, Shops 1 and 2 Front Elevation



The project's street-facing elevations are designed with faux storefronts and other architectural detailing such as clerestory windows, green screen trellises, fabric awnings, and angled roof elements to provide a visually engaging streetscape. Figure 4 below illustrates the south and west elevations of Pad 6, which face Blue Oaks Boulevard and Fiddymment Road, respectively. Overall, the pad buildings are designed to tie in cohesively with the anchor building, achieving a consistent design character for the center. The project architecture is also harmonious with development in the vicinity of the site, using similar and complementing earth tone colors and materials as the medical office building to the west and the Fiddymment Ranch Apartments to the east.

Figure 4: Pad 6 South and West Elevations



Landscaping and Lighting: Landscaping for the project site includes frontage improvements along the perimeter of the property, at project entry points, and within the parking lot. As required by the WRSP Design Guidelines, the landscape corridors for Blue Oaks Boulevard and Fiddymment Road have widths of 50 feet and 35 feet, respectively. Primary street trees consist of Grecian laurel and red maple along Blue Oaks Boulevard, Interior live oak and sour gum along Fiddymment Road, deodar cedar along Harvey Way, and red maple along Oak Meadow Drive. Hedge and border shrubs are proposed around the entire project perimeter to screen parking areas, service areas, future gas station canopies, and drive-through lanes from view. The City's minimum requirement of 50% shading in parking lots is accomplished with a mix of Chinese pistache and evergreen elm trees. As proposed and conditioned, staff finds the landscape plan meets the intent of the CDG and the WRSP design guidelines, and is consistent with the City's Water Efficient Landscape Ordinance.

As mentioned, the project is located at the northeast intersection of Blue Oaks Boulevard and Fiddymont Road, which is considered a key intersection in the WRSP. The existing neighborhood entry feature located at this corner will be retained, which consists of a combination of plant materials, hardscape elements (such as pilasters and raised planters), and signage that is intended to visually define the Plan Area and reinforce the streetscape theme within the Fiddymont Ranch neighborhood. Although the project will involve the removal of native oak trees, some of the existing oak trees located at the northwestern and southwestern corners of the site will be retained and incorporated into the project design, which will help frame the intersections. The outdoor patios of Pads 4—6 will provide views of these oak trees. Further discussion on the removal of oak trees is provided in the Tree Permit evaluation section of this report.

In addition to the planting plan, the landscape plans also include furnishings and fixtures. Furnishings include three-foot tall pre-cast concrete split-rail fencing, building mounted light fixtures that complement the style of the building, steel shade arbors in outdoor patio areas, and the use of stamped and decorative pavement in key areas and pathways to define the pedestrian environment. A photometric plan was included for the project, which demonstrates consistency with the City's minimum lighting level requirements (0.5 foot-candles in pedestrian areas and 1.0 foot-candles in vehicle areas).

Design Review Permit Conclusion

Based on the analysis contained in this staff report and with the project conditions, staff finds that the proposed project is consistent with the policies and intent of the General Plan, the WRSP, and the City's Community Design Guidelines. The project will not be detrimental to public health or safety, nor will it be detrimental to the public welfare.

EVALUATION: TENTATIVE SUBDIVISION MAP

Section 18.06.180 of the City of Roseville Subdivision Ordinance requires that three findings be made to approve or conditionally approve a Tentative Subdivision Map. The three findings are listed below in ***italicized, bold*** text and are followed by an evaluation of the map in relation to each finding.

- 1. The size, design, character, grading, location, orientation and configuration of lots, roads and all improvements for the tentative subdivision map are consistent with the density, uses, circulation and open space systems, applicable policies and standards of the general plan or any applicable specific plan for the area, whichever is more restrictive, and the design standards of Title 18 (Subdivision Ordinance) of the Roseville Municipal Code.***

Parcel size, design, configuration, location, orientation, and character: The proposed subdivision will result in the creation of eight parcels ranging in size from approximately 0.66 to 2.87 acres. The locations of the parcels are based on the locations of the proposed buildings and their associated parking areas. The Map Act and Subdivision Ordinance do not contain any maximum or minimum lot sizes. Based on the Design Review Permit evaluation section, the lots are large enough to adequately allow for the proposed development on the parcels.

Grading and Drainage: Grading and drainage required for development of the parcels have been reviewed with the Design Review Permit and have been determined to comply with City standards as shown in the grading and drainage plan, and as conditioned.

Access & Circulation: The project is conditioned to ensure the driveways are constructed to comply with the City's design standards, and to allow reciprocal access and parking easements on both parcels. On-site circulation has been reviewed with the Design Review Permit and found to be adequate. Access and circulation is consistent with the City's Subdivision Ordinance and the City's Improvement Standards.

- 2. The subdivision will result in lots which can be used or built upon. The subdivision will not create lots which are impractical for improvement or use due to the steepness of terrain or***

location of watercourses in the area; the size or shape of the lots or inadequate building area; inadequate frontage or access; or, some other physical condition of the area.

The proposed parcels are of sufficient size and shape to accommodate the proposed development and are consistent with the applicable zoning and design requirements, as discussed in the Design Review Permit evaluation section of the staff report. There are no watercourses or other natural features on the site that would impede development.

3. The design and density of the subdivision will not violate the existing requirements prescribed by the Regional Water Quality Control Board for the discharge of waste into the sewage system, pursuant to Division 7 of the Water Code.

Anticipated water quality impacts and discharge of waste are not affected by the proposed Tentative Subdivision Map. The design of the sewer lines in the project area and treatment capacity at the City's sewage treatment plant have adequate conveyance and capacity to accommodate development on the proposed parcels created by the Tentative Subdivision Map.

EVALUATION – TREE PERMIT

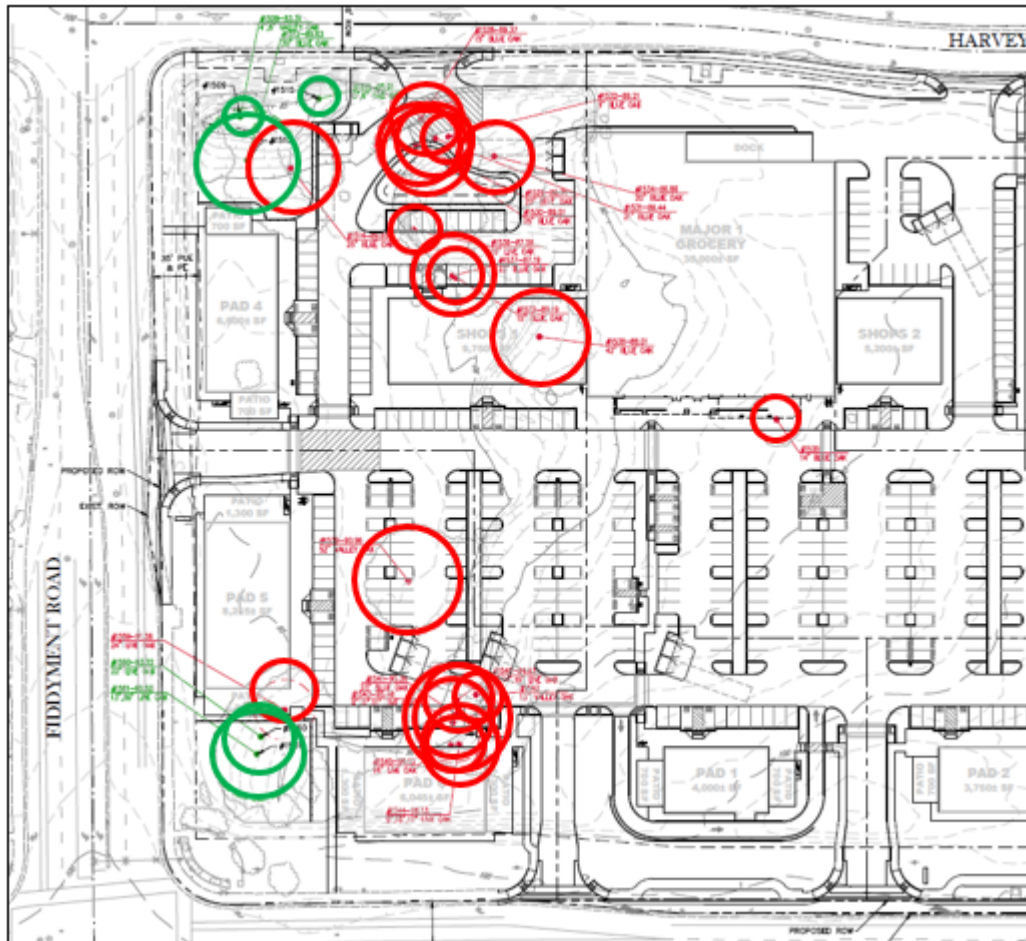
Pursuant to Zoning Ordinance Section 19.66.030, a Tree Permit is required for any removal of native oak trees or for more than 20% encroachment into the dripline of a native oak tree. The proposed project will result in the removal of several native oak trees. The required findings to approve a Tree Permit are listed below.

- 1. Approval of the Tree Permit will not be detrimental to the public health, safety or welfare, and approval of the Tree Permit is consistent with the provisions of Chapter 19.66.***
- 2. Measures have been incorporated into the project or permit to mitigate impacts to remaining trees or to provide replacement for trees removed.***

An arborist report including a tree inventory summary was provided by California Tree and Landscape Consulting, Inc., dated February 20, 2020 (see Exhibit J). A total of 33 protected oak trees were identified on the property. Staff worked with the applicant to preserve as many of the trees to the extent feasible; however, a majority of the trees will require removal because they conflict with the proposed improvements. The loss of these trees were anticipated in the WRSP Environmental Impact Report, which identified the oak trees on the project site as being lost due to development. Of the 33 trees, 28 trees with a total aggregate diameter of 721 inches are proposed for removal to facilitate development of the site, while five (5) trees are proposed to be retained. Eight (8) of the trees proposed for removal were identified as having failed and being in a down and dead condition. Figure 5 and Exhibit K includes the tree locations; those identified in green are proposed for retention and those identified in red are proposed for removal.

The applicant has proposed to comply with the compensation requirements of the City's Tree Preservation Ordinance. Mitigation will be completed with a combination of on-site planting and payment into the City's in-lieu fee program. The total number of mitigation inches for this project is 721. The Tree Preservation Ordinance allows up to 50% of the replacement requirement be met with planting of non-native species, which amounts to 360.5 inches for this project. The project also includes the planting of 13, 24-inch box native oak trees, which provide a total mitigation credit of 26 inches. The remaining 333 inches will be mitigated through payment of in-lieu fees. These funds are used for the replanting and preservation of trees throughout the City. Mitigation fees are calculated at \$118 per inch of tree removed when measured at the tree's diameter at breast height (DBH). The tree mitigation fees for the project equate to \$39,294 and are required to be paid prior to the removal of the trees.

Figure 5: Protected Oak Tree Locations



The Tree Permit contains all of the standard conditions of approval, which includes a requirement to follow all of the recommendations of the Arborist Report. The arborist's recommendations include monitoring any excavation for the retaining wall footings for the trees to remain on the site. The removal of these trees will not be detrimental to the public health, safety, or welfare, and measures have been incorporated to mitigate impacts.

PUBLIC OUTREACH

The proposed project was distributed to all internal and external agencies and departments who have requested such notice, and all comments or recommended conditions of approval have been incorporated into the project, as appropriate. Notice of the application was also distributed to the Roseville Coalition of Neighborhood Associations (RCONA), and the project was brought to the joint Westpark/Fiddyment Farms Neighborhood Association meeting of February 11, 2020. Feedback at the neighborhood meeting, which was attended by more than 50 people, was positive. Questions were generally focused on the types of tenants expected in the center and construction timelines. A public notice of the Planning Commission hearing was published on May 1, 2020 and a notice of hearing was also distributed to RCONA, to all interested persons, and to all property owners within 300 feet of the site. To date, no comments have been received.

ENVIRONMENTAL DETERMINATION

As required by the California Environmental Quality Act (CEQA), the City of Roseville, acting as Lead Agency, prepared an Initial Study/Mitigated Negative Declaration (IS/MND) to evaluate the environmental effects of the project. The document was released for a 20-day public comment period, which began on April 17, 2020 and ended on May 7, 2020. The document analyzed the potential for environmental impacts due to project implementation and determined that potentially significant impacts related to Biological Resources, Noise, and Cultural Resources could be reduced to less than significant levels with mitigation. The Mitigated Negative Declaration and associated Mitigation Monitoring and Reporting Program are included as Exhibit A. On May 7th, Staff received a letter from the Law Office of Robert M. Bone, representing an unincorporated association of Roseville community residents, expressing concern that the environmental impacts of the proposed project had not been adequately reviewed. Staff will provide a separate memorandum including the correspondence and staff's response to the letter prior to the hearing.

RECOMMENDATION

The Planning Division recommends the Planning Commission take the following actions:

- A. Adopt the **Plaza at Blue Oaks Mitigated Negative Declaration and the Mitigation Monitoring and Reporting Program**;
- B. Adopt the four (4) findings of fact as stated in the staff report and approve the **DESIGN REVIEW PERMIT – 1950 BLUE OAKS BOULEVARD – WRSP PCL F-31 – THE PLAZA AT BLUE OAKS – PL17-0368** subject to one hundred one (101) conditions of approval;
- C. Adopt the three (3) findings of fact as stated in the staff report and approve the **TENTATIVE SUBDIVISION MAP – 1950 BLUE OAKS BOULEVARD – WRSP PCL F-31 – THE PLAZA AT BLUE OAKS – PL17-0368** subject to thirty-nine (39) conditions of approval; and
- D. Adopt the two (2) findings of fact as stated in the staff report and approve the **TREE PERMIT – 1950 BLUE OAKS BOULEVARD – WRSP PCL F-31 – THE PLAZA AT BLUE OAKS – PL17-0368** subject to twenty (20) conditions of approval.

CONDITIONS OF APPROVAL FOR THE DESIGN REVIEW PERMIT (FILE #PL17-0368)

- 1. This design review permit approval shall be effectuated within a period of two (2) years from **May 14, 2020** and if not effectuated shall expire on **May 14, 2022**. Prior to said expiration date, the applicant may apply for an extension of time, provided this approval does not extend the expiration beyond **May 14, 2023**. (Planning)
- 2. The project is approved as shown in Exhibits B—K, and as conditioned or modified below. (Planning)
- 3. The project shall comply with all required environmental mitigation identified in the Plaza at Blue Oaks Mitigated Negative Declaration. (Planning)
- 4. The applicant shall submit and gain approval of a Design Review Permit for Pad 3 prior to building permit issuance. (Planning)
- 5. The applicant shall submit and gain approval of a Design Review Permit for the future development of Phase 2 (Lot 2). (Planning)
- 6. The project shall be addressed as 1950 Blue Oaks Blvd. The lots and the buildings thereon shall be addressed as follows: Lot 1 (along with Major 1) shall be addressed as 1970 Blue Oaks Blvd, Lot 2 shall be addressed as 2081 Oak Meadow Dr, Lot 3 (along with the building on PAD 3) shall be addressed as 1930 Blue Oaks Blvd, Lot 4 (along with Shops 2) shall be addressed 1960 Blue Oaks Blvd, Lot 5 (along with the building on PAD 2) shall be addressed 1940 Blue Oaks Blvd, Lot 6 (along

with the building on PAD 1) shall be addressed 1980 Blue Oaks Blvd, Lot 7 (along with the building on PAD 6) shall be addressed 2000 Blue Oaks Blvd and the building on PAD 5 shall be addressed 2010 Blue Oaks Blvd, Lot 8 (along with Shops 1) shall be addressed 1990 Blue Oaks Blvd and the building on PAD 4 shall be addressed 2020 Blue Oaks Blvd. All projects with multi-tenants or buildings must submit a site plan with building footprint(s) and suite numbers to the Development Services Department (Business Services – Addressing) for review and approval. The City Addressing Guidelines should be used for reference when assigning suite numbers. (Business Services)

7. The applicant shall pay City's actual costs for providing plan check, mapping, GIS, and inspection services. This may be a combination of staff costs and direct billing for contract professional services. Project billing may occur up to two (2) months after the end of warranty or the Notice of Termination date for the SWPPP, whichever occurs later. (Engineering, Environmental Utilities, Electric, Finance)
8. The design and construction of all improvements shall conform to the Design and Construction Standards of the City of Roseville, or as modified by these conditions of approval, or as directed by the City Engineer. (Engineering)
9. The applicant shall not commence with any on-site improvements or improvements within the right-of-way until such time as grading and/or improvement plans are approved and grading and/or encroachment permits are issued by the Department of Development Service Engineering Division (Engineering)
10. The approval of this project does not constitute approval of proposed improvements as to size, design, materials, or location, unless specifically addressed in these conditions of approval. (Engineering)

PRIOR TO ISSUANCE OF BUILDING PERMITS:

11. Parking stalls shall meet, or exceed, the following minimum standards:
 - a. All parking stalls shall be double-striped. Parking stalls adjacent to sidewalks, landscaped areas or light fixtures, and all Accessible stalls shall about a 6" raised curb or concrete bumper. (Planning)
 - b. Standard -- 9 feet x 18 feet; Compact--9 feet x 16 feet; Accessible--14 feet x 18 feet (a 9 foot wide parking area plus a 5 foot wide loading area) and a minimum of one (1) parking space shall be Accessible van accessible--17 feet x 18 feet (9 foot wide parking area plus an 8 foot wide loading area). (Planning)
 - c. An 'exterior routes of travel' site accessibility plan incorporating slope, cross-slope, width, pedestrian ramps, curb ramps, handrails, signage, detectable warnings or speed limit signs or equivalent means shall comprise part of the site improvement plans submitted to City for review, prior to building plan check approvals. This site accessibility plan shall also include:
 - i) Accessible parking stalls shall be dispersed and located closest to accessible entrances. The total number of accessible parking spaces shall be established by Table 11B-208.2 of the CBC.
 - ii) Accessible Parking spaces and crosswalks shall be signed, marked and maintained as required by Chapter 11B of the CBC.
 - iii) Accessible parking and exterior route of travel shall comply with CBC, Sections 11B-206 and 11B-208. (Building)

12. Signs and/or striping shall be provided on-site as required by the Planning Department to control on-site traffic movements. Parking lot striping and signage shall be maintained in a visible and legible manner. (Planning)
13. The plans submitted to the Building Department for permits shall indicate all approved revisions/alterations as approved by the Commission including all conditions of approval. (Planning)
14. The project Landscape Plans shall comply with the following:
 - a. The Landscape Plan shall indicate the location of, and be designed to avoid conflicts with, all pole-mounted light fixtures and utility equipment including (but not limited to) electric transformers, switchgear, and overhead lines, backflow preventors, fire department connections, and public water, sewer, and storm drain facilities. (Planning, Fire, EUD, Electric, Public Works)
 - b. The tree plantings in the parking lot shall be designed to provide a minimum of 50% shade coverage after 15 years. (Planning)
 - c. At a minimum, landscaped areas not covered with live material shall be covered with a rock, 3" bark (no shredded bark) or 3" mulch covering. (Planning)
 - d. The landscape plan shall comply with the Landscape Guidelines for West Roseville Specific Plan and the City of Roseville Water Efficient Landscape Ordinance. (Planning)
 - f. All landscaping in areas containing electrical service equipment shall conform with the Electric Department's Landscape Requirements and Work Clearances as outlined in Section 10.00 of the Departments "Specification for Commercial Construction." (Electric)
15. Any roof-mounted equipment and satellite dishes proposed shall be shown on the building plans. The equipment shall be fully screened from public streets and the surrounding properties. (Planning)
16. At the time of building permit application and plan submittal, the project applicant shall submit a proposed plan which shows the suite addressing plan for individual tenant spaces within the building. The Chief Building Official, or the designate, shall approve said plan prior to building permit approval. (Building)
17. A separate Architectural Site Accessibility Plan which details the project's site accessibility information as required by California Title 24, Part 2 shall be submitted as part of the project Building Permit Plans. (Building)
18. For Multiple Building Complexes: As part of the required Architectural Site Accessibility Plan, the developer shall delineate the extent of the site accessibility improvements being installed as part of the initial improvements for the project, and those that are planned to be developed as part of subsequent phases (i.e. around future pad buildings). (Building)
19. Building permit plans shall comply with all applicable code requirements (California Building Code – CBC – based on the International Building Code, California Green Building Standards Code-CGBSC, California Mechanical Code – CMC – based on the Uniform Mechanical Code, California Plumbing Code – CPC – based on the Uniform Plumbing Code, California Fire Code – CFC – based on the International Fire Code – with City of Roseville Amendments – RFC, California Electrical Code – CEC – based on the National Electrical Code, and California Energy Standards – CEC T-24 Part 6), California Title 24 and the American with Disabilities Act - ADA requirements, and all State and Federally mandated requirements in effect at the time of submittal for building permits (contact the Building Division for applicable Code editions). (Building)

20. Parapet/cornice construction shall support the weight of a ladder leaning against the parapet as well as a 330-pound vertical load applied to the **leading edge** of the horizontal projection of the cornice (a 250-pound firefighter carrying 80 pounds of equipment stepping off of a ladder onto the top of the cornice). (CFC Chapter 1) (Building)
21. For restaurants, or other food services, contact the Placer County Health Department. (Building)
22. For restaurants, or other food services. The developer shall obtain all required approvals and permits from the Placer County Health Department and the City of Roseville Industrial Waste Division. (Building, Environmental Utilities)
23. Maintenance of copy of building plans: Health and Safety Code section 19850 requires the building department of every city or county to maintain an official copy of the building plans for the life of the building. As such, each individual building shall be submitted as a separate submittal package. Building plan review, permit issuance and archiving is based on each individual building address. (Building)
24. The Improvement Plans shall include a complete set of Landscape Plans. The Landscape Plans shall be approved with the Improvement Plans. (Planning, Engineering, Fire, Environmental Utilities, Electric)
25. A note shall be added to the grading plans that states:
*“Prior to the commencement of grading operations, the contractor shall identify the site where the **excess/borrow** earthen material shall be imported/deposited. If the **borrow/deposit** site is within the City of Roseville, the contractor shall produce a report issued by a geotechnical engineer to verify that the exported materials are suitable for the intended fill, and shall show proof of all approved grading plans. Haul routes to be used shall be specified.”* (Engineering)
26. Blue Oaks Boulevard shall be improved with two A-7 driveways. The western driveway shall be a minimum of 30-foot in width and the eastern driveway shall be a minimum of 35-foot in width. Both driveways shall be restricted to right turn ingress and egress only. An Auxiliary lane with a 90-foot entry taper shall be constructed along the frontage to provide right turn access to the driveway and will terminate into the existing right turn lane at Fiddymment Road. All frontage pedestrian paths shall be a minimum of 8-foot in width. (Engineering)
27. Fiddymment Road shall be improved with a 35-foot wide A-7 driveway. This driveway shall be restricted to right turn ingress and egress only. All frontage pedestrian paths shall be a minimum of 8-foot in width. (Engineering)
28. Harvey Way shall be improved with two A-7 driveways. The western driveway shall be a minimum of 35-foot in width and restricted to right turn ingress and egress access only. The eastern driveway shall be a minimum of 30-foot in width. All frontage pedestrian paths shall be a minimum of 4-foot in width. (Engineering)
29. Oak Meadow Drive shall be improved with two 35-foot wide A-7 driveways. All frontage pedestrian paths shall be a minimum of 4-foot in width. (Engineering)
30. The Developer shall provide striping and signage to prevent the blockage at the first onsite intersections located off of Fiddymment Road driveway and the western driveway on Harvey Way. (Engineering)
31. The Developer shall enter into a construction fee agreement based upon a construction cost of \$10,000 per shelter for future construction of the Bus Shelter on the NE corner of Fiddymment Road and Blue Oak Blvd. (shelter number 176) (Engineering, Alternative Transportation)

32. The project shall include a 20-space park-and-ride per the Specific Plan requirements and in proximity to the transit shelter on Fiddymment Road. The park-and-ride lot shall include accessible parking as required by the building code, a path of travel from the accessible parking to the transit shelter on Fiddymment Road, signs identifying the park-and-ride spaces and their availability to the public. The park-and-ride area shall include appropriate lighting and security measures. The landowner shall be responsible for maintenance of the park-and-ride lot and all its appurtenances. (Engineering, Alternative Transportation)
33. Bike parking and clean air vehicle spaces shall be provided per the California Green Building Standards. Bike rack/locker design and location shall be approved by Alternative Transportation. Parking stall markings are to be marked as "Carpool/Clean Air/EV" instead of using the words "Vanpool". The "clean air" spaces should be distributed throughout the site, including near the major buildings. The building permit plans shall show internal bike parking. (Alternative Transportation, Building)
34. The applicant/developer shall prepare a Transportation Systems Management (TSM) plan for *The Plaza at Blue Oaks* to be reviewed and approved by the Transportation Commission (Alternative Transportation)
35. The applicant shall dedicate all necessary rights-of-way or Public Utility Easement for the widening of any streets or transfer of public utilities across and over any portion of the property as required with this entitlement. A separate document shall be drafted for approval and acceptance by the City of Roseville, and recorded at the County Records Office. (Engineering)
36. All storm drainage, including roof drains, shall be collected on site and treated with Best Management Practices (BMP's) per the City's Stormwater Quality Design Manual. All storm water shall be routed to the nearest existing storm drain system or natural drainage facility. Drain outfalls shall extend down to the receiving water and shall be constructed with adequate velocity attenuation devices. The grading/improvement plans for the site shall be accompanied with a shed map that defines that area tributary to this site and all drainage facilities shall be designed to accommodate the tributary flow. The storm drain system and proposed BMP's shall be privately owned and maintained by the property owner. Prior to the issuance of any permits, the owner shall provide a plan for the maintenance of the proposed BMP's. (Engineering)
37. Prior to the approval of the Improvement Plans, the project proponent shall provide proof of preparation and submittal of a Storm Water Pollution Prevention Plan (SWPPP) to the Regional Water Quality Control Board (RWQCB). Proof shall be in the form of the Waste Discharge Identification Number (WDID#), provided to the applicant from RWQCB, placed on the coversheet of the improvement plans. Upon approval of the improvement plans, a copy of the SWPPP shall be required onsite and available for viewing by City inspection staff upon request. (Engineering)
38. The developer shall be responsible for any necessary relocation of signal interconnect cables that may require re-location as a result of the construction of turn lanes and/or driveways. (Engineering)
39. To ensure that the design for any necessary widening, construction, or modifications of Public Streets does not conflict with existing dry utilities generally located behind the curb and gutter, and prior to the submittal of design drawings for those frontage improvements, the project proponent shall have the existing dry utilities pot holed for verification of location and depth. (Engineering)
40. Sight distances for all driveways shall be clearly shown on the improvement plans to verify that minimum standards are achieved. It will be the responsibility of the project proponent to provide appropriate landscaping and improvement plans, and to relocate and/or modify existing facilities as needed to meet these design objectives. (Engineering)

41. The applicant shall remove and reconstruct any existing damaged curb, gutter, and sidewalk along the property frontage. During plan check of the improvement plans and/or during inspection, Public Works will designate the exact areas to be reconstructed. Any existing public facilities damaged during the course of construction shall be repaired by the property owner and at the property owner's expense, to the satisfaction of the City. (Engineering)
42. Prior to the approval of the improvement plans, it will be the project proponent's responsibility to pay the standard City Trench Cut Recovery Fee for any cuts within the City streets that are required for the installation of underground utilities. (Engineering)
43. Prior to the issuance of building permits, the property owner shall pay into the following fee programs: Citywide Drainage Fee, Citywide Traffic Mitigation Fee (TMF), Highway 65 Joint Partners Association (JPA), South Placer Regional Transportation Authority (SPRTA), and City/County Fee. (Engineering)
44. Upon issuance of each building permit, the property owner shall pay the WRSP Transit Shuttle Service Fee per Development Agreement Section 3.15.14. (Alternative Transportation)
45. The applicant/developer shall prepare a Transportation Systems Management (TSM) Plan for the Plaza at Blue Oaks to be reviewed and approved by the Transportation Commission. (Public Works)
46. Prior to the issuance of a grading permit or approval of Improvement Plans, the grading plans shall clearly identify all existing water, sewer and recycled water utilities within the boundaries of the project (including adjoining public right of way). Existing utilities shall be identified in plan view and in profile view where grading activities will modify existing site elevations over top of or within 15 feet of the utility. Any utilities that could potentially be impacted by the project shall be clearly identified along with the proposed protection measures. The developer shall be responsible for taking measures and incurring costs associated with protecting the existing water, sewer and recycled water utilities to the satisfaction of the Environmental Utilities Director. (Environmental Utilities)
47. The applicant shall pay all applicable water and sewer fees. (Environmental Utilities)
48. Water and sewer infrastructure shall be designed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards and shall include:
 - a. Utilities or permanent structures shall not be located within the area which would be disturbed by an open trench needed to expose sewer trunk mains deeper than 12' unless approved by Environmental Utilities in these conditions. The area needed to construct the trench is a sloped cone above the sewer main. The cone shall have 1:1 side slopes.
 - b. Water, sewer and recycled mains shall not exceed a depth of 12' below finished grade, unless authorized in these conditions of approval.
 - c. All sewer manholes shall have all-weather 10-ton vehicle access unless authorized by these conditions of approval. (Environmental Utilities)
49. Recycled water infrastructure shall be designed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards. The applicant shall pay all applicable recycled water fees. Easements shall be provided as necessary for recycled water infrastructure. (Environmental Utilities)
50. Trash enclosures, recycling areas, and enclosure approaches shall be designed to current Refuse Division specifications, the materials and colors shall match the building, and the location of such facilities shall be reviewed and approved by the Refuse Division, Planning and the Fire Department. The enclosure must have inside dimensions of 12 feet wide and 9 feet deep and be built to the specifications of the Solid Waste Department's Enclosure Description. (Refuse, Planning, Fire)

51. Access to trash enclosures shall have an inside turning radius of 25 feet and an outside turning radius of 45 feet must be maintained to allow the refuse truck access to and from the enclosure. Enclosures must have a clear approach of 65 feet in front of the enclosure to allow servicing bins. (Refuse)
52. A trash enclosure and recycling enclosure is required for each building and each tenant, otherwise, the building owner is responsible for the trash service. (Refuse)
53. The design and installation of all fire protection equipment shall conform to the California Fire Code and the amendments adopted by the City of Roseville, along with all standards and policies implemented by the Roseville Fire Department. (Fire)
54. The applicable codes and standards adopted by the City shall be enforced at the time construction plans have been submitted to the City for permitting (Fire)
55. The fire flow required, at a 50% reduction due to the buildings being sprinklered, will be based on the largest single structure in accordance with the California Fire Code at the time detail plans are submitted to the City of Roseville for review. The maximum fire flow will not exceed 4,000 gpm based on the Appendix III-AA of the California Fire Code. (Fire)
56. The fire department access road shall meet the City's requirements for width and turning radii of 30 and 50 as noted on the fire department standards for access. This shall be enforced at the time plan are submitted for review, Additional information can be found on the City's web site www.roseville.ca.us or contact Jason Rizzi, Fire Division Chief, at 916-774-5802 or jrizzi@roseville.ca.us with the Fire and Life Safety Division for information. (Fire)
57. If high-pile storage is involved as part of the construction of this occupancy, a separate fire permit shall be obtain from the fire department in accordance with the California Fire Code. Plans shall be submitted for approval prior to installation. (Fire)
58. Automatic fire extinguishing system risers, fire alarm system panels and digital alarm communicator system panels shall be located within an approved fire control room and shall be accessible from an adjacent fire apparatus roadway. There shall be only one fire control room per building. Said fire control room shall be a minimum size of thirty-five (35) square feet in size and shall be openable from the exterior via an approved door opening. (Fire)
59. All fire apparatuses, such as fire department connections and post indicating valves, serving identified building shall be designed and installed adjacent to each structure for first responder's operational purposes. (Fire)
60. If the existing water supply is unable to support the automatic fire sprinkler system, a listed fire pump would be your only option. If this is the case, you required fire pump room will have to be enlarged to accommodate all the required apparatuses needed to operate such a system. (Fire)
61. The phasing of this project shall not limit the fire department requirements for access and circulation throughout the project as a result of continuous construction in accordance with the California Fire Code, 2016 with the City of Roseville's Amendments. A separate phasing plan (and permit issued by the Building Department) shall be reviewed and approved by this department. (Fire)
62. This building shall be designed with fire department access doors every 100 lineal feet in accordance with Chapter 32 of the California Fire Code. (Fire)
63. This project shall not reduce the responsibilities of the owner(s) or future owners of these parcels from maintaining all on-site fire systems including all underground water lines if applicable. Private

underground fire lines that serve multiple buildings and/or parcels shall be part of the reciprocal easement agreement. There shall be a clear language regarding maintenance and common easements agreement for service in the CCRs. A service company shall be obtained to maintain all on-site fire protection systems as noted in the conditions of approval. (Fire)

64. If added cornice construction is involved, the design shall support the weight of a ladder leaning against the assembly as well as a 330-pound vertical load applied to the **leading edge** of the horizontal projection of the cornice (a 250-pound firefighter carrying 80 pounds of equipment stepping off of a ladder onto the top of the cornice). (Fire)
65. Use, increase of hazardous materials or storage, liquids, gases and/or chemicals shall meet the requirements of the Chapter 6.95 of the Health and Safety Code, the Roseville Fire Department and the National Fire Codes. Submit a complete plan set and the Hazardous Materials Business Plan, including names and amount of any hazardous materials that will be stored or used, to the Fire and Life Safety Division for review and approval. A permit application shall also be provided at the time of submittal. Contact Steve Anderson of our Hazardous Materials Division within the Fire Department at (916) 774-5821 to initiate the process. Satisfaction of storage and use shall be determined prior to requesting occupancy. (Fire)
66. Adequate radio coverage shall be provided within all buildings for public safety agencies, as required by Roseville Municipal Code and the California Fire Code. A field test shall be provided by a person in possession of a current FCC License, or a current technician certification issued by the Associated Public-Safety Communications Officials International (APCO), or the National Association of Business and Educational Radio (NABER). The building owner shall retain all test records on the inspected premises and a copy shall be submitted to the Fire Department officials in accordance with Section 510 of the California Fire Code.
67. Adequate radio coverage shall include all of the following:
 - a. A minimum signal strength of 95 dBm available in 90% of the area of each floor of the building when transmitted from the closest City of Roseville Radio Communication site.
 - b. A minimum signal strength of 95 dBm received at the closest City of Roseville Communication site when transmitted from 90% of the area of each floor of the building.
 - c. The frequency range that must be supported shall be 821-824 MHz and 866-869 MHz.
 - d. A 100 % reliability factor. (Fire, Police)
68. The Electric Department requires the submittal of the following information in order to complete the final electric design for the project:
 - a. one (1) set of improvement plans
 - b. load calculations
 - c. electrical panel one-line drawings (Electric)
69. All on-site external lighting shall be installed and directed to have no off-site glare. Lighting within the parking areas and pedestrian walkways shall provide a maintained minimum of one (1) foot candle, and 0.5 foot candle of light, respectively. All exterior light fixtures shall be vandal resistant. (Planning & Police)
70. The parking lot shall have properly posted signs that state the use of the parking area is for the exclusive use of employees and customers of this project. (See California Vehicle Code Sections 22507.8, 22511.5, 22511.8, 22658(a), and the City of Roseville Municipal Code Section 11.20.110). The location of the signs shall be shown on the approved site plan. (Planning & Police)

71. It is the developer's responsibility to notify PG&E of any work required on PG&E facilities. (PG&E)

DURING CONSTRUCTION & PRIOR TO ISSUANCE OF OCCUPANCY PERMITS:

72. Any backflow preventors visible from the street shall be painted green to blend in with the surrounding landscaping. The backflow preventors shall be screened with landscaping and shall comply with the following criteria:
- a. There shall be a minimum clearance of four feet (4'), on all sides, from the backflow preventor to the landscaping.
 - b. For maintenance purposes, the landscaping shall only be installed on three sides and the plant material shall not have thorns.
 - c. The control valves and the water meter shall be physically unobstructed.
 - d. The backflow preventor shall be covered with a green cover that will provide insulation. (Planning, Environmental Utilities)
73. The following easements shall be provided by separate instrument and shown on the site plan, unless otherwise provided for in these conditions:
- b. Water, sewer, and reclaimed water easements. (Engineering, Environmental Utilities)
 - c. Additional internal easements will be required to cover primary electrical facilities to the project when the final electrical design is completed. (Electric)
 - d. If not already provided with the subdivision map, the applicant shall dedicate a separate easement to the City of Roseville for the bus stop located on NE corner of Fiddymont Road at Blue Oaks Blvd. (shelter #176). The easement documents shall be drafted for approval and acceptance by the City of Roseville and recorded at the County Recorders' office. (Alternative Transportation, Engineering)
74. Easement widths shall comply with the City's Improvement Standards and Construction Standards. Separate document easements required by the City shall be prepared in accordance with the City's "Policy for Dedication of Easements to the City of Roseville". All legal descriptions shall be prepared by a licensed land Surveyor. All existing public utility, electric, water, sewer and reclaimed water easements shall be maintained unless otherwise authorized by these conditions of approval. (Public Works, Environmental Utilities, Electric)
75. Inspection of the potable water supply system on new commercial projects shall be as follows:
- a. The Environmental Utilities Inspector will inspect all potable water supply up to the downstream side of the backflow preventor.
 - b. The property owner/applicant shall be responsible for that portion of the water supply system from the backflow preventor to the building. The builder/contractor shall engage a qualified inspector to approve the installation of this portion of the water supply. The Building Division will require from the builder/ contractor, a written document certifying that this portion of the potable water supply has been installed per improvement plans and in accordance with the Uniform Plumbing Code. This certificate of compliance shall be submitted to the Building Division before a temporary occupancy or a building final is approved.

- c. The building inspectors will exclusively inspect all potable water supply systems for the building from the shutoff valve at the building and downstream within the building. (Building, Environmental Utilities)
- 76. All improvements being constructed in accordance with the approved grading and improvement plans shall be accepted as complete by the City. (Engineering)
- 77. The words "traffic control appurtenances" shall be included in the list of utilities allowed in public utilities easements (PUE's) located along public roadways. (Engineering)
- 78. The applicant/developer shall prepare a Transportation Systems Management (TSM) agreement for The Plaza at Blue Oaks to be reviewed and approved by the City Manager (Alternative Transportation).
- 79. Water, sewer and reclaimed water shall be constructed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards. (Environmental Utilities)
- 80. All water backflow devices shall be tested and approved by the Environmental Utilities Department. (Environmental Utilities)
- 81. **Restaurants or other Food Service Establishment (FSE).** The applicant shall design for installation and/or install an exterior grease interceptor if the proposed business could potentially discharge substances containing fats, oils and grease (FOG) into the sewer system. The grease interceptor shall be adequate to separate and remove FOG contained in the wastewater from FSE's prior to discharge to the public sewer. (Environmental Utilities)
- 82. In the event an exterior grease interceptor cannot be installed due to space limitation, the developer shall install a grease trap, per City Standards, that will mechanically separate the FOG contained in the wastewater from the FSE prior to discharge to the public sewer. (Environmental Utilities)
- 83. Pursuant to the Municipal Code, the applicant shall apply for and obtain a FOG waste discharge permit (FOG WDP) from the Environmental Utilities Industrial Waste Division prior to occupancy or prior to discharging waste to the public sewer. The applicant shall submit information required by the Environmental Utilities Department for evaluation, including but not limited to: site plans, floor plans, mechanical and plumbing plans, and details to show all sewers, FOG control device, grease interceptor or other pretreatment equipment and appurtenances by size, location and elevation. Additional information related to the applicant's business operations and potential discharge may be requested to properly evaluate the FOG WDP application. (Environmental Utilities)
- 84. All Electric Department facilities, including streetlights where applicable, shall be designed and built to the "City of Roseville Specifications for Commercial Construction." (Electric)
- 85. The City of Roseville Electric Department has electrical construction charges which are to be paid by the developer and which are explained in the City of Roseville "Specification for Commercial Construction." These charges will be determined upon completion of the final electrical design. (Electric)
- 86. Any relocation, rearrangement, or change of existing electric facilities due to this development shall be at the developer's expense. (Electric)
- 87. Any facilities proposed for placement within public/electric utility easements shall be subject to review and approval by the Electric Department before any work commences in these areas. This includes, but is not limited to, landscaping, lighting, paving, signs, trees, walls, and structures of any type. (Electric)

88. All electric metering shall be directly outside accessible. This can be accomplished in any of the following ways:
- a. Locate the metered service panel on the outside of the building.
 - b. Locate the metered service panel in a service room with a door that opens directly to the outside. The developer will be required to provide a key to the door for placement in a lock box to be installed on the outside of the door. Any doors leading from the service room to other areas of the building shall be secured to prohibit unauthorized entry. (Electric)
89. One 3/4" conduit with a 2-pair phone line shall be installed from the buildings telephone service panel to the meter section of the customer's electrical switchgear or panel. (Electric)
90. It is the responsibility of the developer to insure that all existing electric facilities remain free and clear of any obstruction during construction and when the project is complete. (Electric)

OTHER CONDITIONS OF APPROVAL:

90. Signs shown on the elevations are not approved as part of the Design Review Permit. A Sign Permit is required for all project signs. (Planning)
91. Following the installation of the landscaping, all landscape material shall be maintained in a healthy and weed free condition; dead plant material shall be replaced immediately. All trees shall be maintained and pruned in accordance with the accepted practices of the International Society of Arboriculture (ISA). (Planning)
92. The City reserves the right to restrict vehicle turning movements within the public right-of-way in the future if deemed necessary by the City Engineer. (Engineering)
93. The required width of fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. Minimum required widths and vertical clearances established by the Fire Code shall be maintained at all times during construction. Closure of accesses for fire apparatus by gates, barricades and other devices shall be prohibited unless approved by the Fire Chief. (Fire)
94. Temporary aboveground storage tanks may be used at construction sites for diesel fuel only and shall not exceed 1,000 gallon capacity. Tanks shall comply with all provisions found within the Fire Code. A Fire Department Permit shall be obtained prior to tank installation. The permit shall expire after 90 days from the date of issuance, unless extended by the Fire Chief. (Fire)
95. If site survey or earth moving work results in the discovery of hazardous materials in containers or what appears to be hazardous wastes released into the ground, the contractor or person responsible for the building permit must notify the Roseville Fire Department immediately. A representative from the Fire Department will make a determination as to whether the incident is reportable or not and if site remediation is required. (Fire)
96. The location and design of the gas service shall be determined by PG&E. The design of the gas service for this project shall not begin until PG&E has received a full set of City approved improvement plans for the project. (PG&E)
97. All commercial air conditioning units 5 tons or less (<65,000 btu/ h) shall meet the current Consortium for Energy Efficiency ("CEE") Tier I specifications. The SEER/EER ratings will be specified on building plans and Title 24 compliance certificates at the time building permits are requested. The SEER and EER ratings will be verified with appropriate documentation. These requirements shall be utilized in the overall energy compliance calculations required for issuance of any building permit for

any commercial building in the Plan Area. Any variances, with the exception of Tier 2 compliance, must be approved by the Electric Department's Retail Energy Services Department. (Electric)

98. The project is subject to the noise standards established in the City's Noise Ordinance. In accordance with the City's Noise Ordinance project construction is exempt between the hours of seven a.m. and seven p.m. Monday through Friday, and between the hours of eight a.m. and eight p.m. Saturday and Sunday. Provided, however, that all construction equipment shall be fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order. (Building)
99. The developer (or designated consultant) shall certify that the building foundation location has been placed according to all approved setback requirements shown on the approved site plan. The developer shall prepare a written statement confirming building placement and provide an original copy to the City Building Division Field Inspector at the time of or prior to the foundation inspection. (Building)
100. Prior to Certificate of Occupancy, the applicant may apply for a Temporary Certificate of Occupancy (TCO) of the building. If a TCO is desired, the applicant must submit a written request to the Building Division a minimum of thirty (30) days prior to the expected temporary occupancy date and shall include a schedule for occupancy and a description of the purpose for the Temporary Certificate of Occupancy. (Building)
101. Concurrent with submittal for plan check and prior to a request for final building inspection, the applicant may request City approval of an occupancy phasing plan to allow individual or multiple building occupancies. This request shall be made in writing to the Building Department and shall include 10 copies of the following:
 - a. A description of measures that will be undertaken to minimize conflict between residents/building occupants and construction traffic (e.g. fencing, etc.);
 - b. A phasing plan showing the proposed buildings, internal roads and access routes, landscaping, trash enclosure locations, and any other improvements planned for each phase; and
 - c. Estimated time frame for each phase and a specific date for the first phase. (Planning, Building)

CONDITIONS OF APPROVAL FOR THE TENTATIVE SUBDIVISION MAP (FILE #PL17-0368)

1. The approval of a Tentative Map and/or tentative site plan does not constitute approval of proposed improvements as to size, design, materials, or location, unless specifically addressed in these conditions of approval. (Engineering)
2. The design and construction of all improvements shall conform to the Improvement Standards and Construction Standards of the City of Roseville, or as modified by these conditions of approval, or as directed by the City Engineer. (Engineering)
3. The applicant shall not commence with any on-site improvements or improvements within the right-of-way until such time as grading and/or improvement plans are approved and grading and/or encroachment permits are issued by the Department of Development Service Engineering Division (Engineering)
4. The applicant shall pay City's actual costs for providing plan check, mapping, GIS, and inspection services. This may be a combination of staff costs and direct billing for contract professional services. Project billing may occur up to two (2) months after the end of warranty or the Notice of

Termination date for the SWPPP, whichever occurs later. (Engineering, Environmental Utilities, Electric, Finance)

PRIOR TO ISSUANCE OF A GRADING PERMIT AND/OR IMPROVEMENT PLANS:

5. Grading around the native oak trees shall be as shown on the tentative map or as approved in these conditions. (Planning)
6. The applicant shall submit to the Planning and Engineering Departments the appropriate Army Corps of Engineers permit or clearance, the California Department of Fish and Game Stream Bed Alteration Agreement, and/or the Regional Water Quality Control Board Water Quality Certificate. (Planning)
7. Water and sewer infrastructure shall be designed and constructed pursuant to the adopted City of Roseville Improvement Standards and Construction Standards and shall reflect the following:
 - a) Sewer and water service laterals shall not be allowed off of water and sewer mains larger than 12 inches in diameter.
 - b) Utilities or permanent structures shall not be located within the area which would be disturbed by an open trench needed to expose sewer trunk mains deeper than 12' unless approved by Environmental Utilities in these conditions. The area needed to construct the trench is a sloped cone above the sewer main. The cone shall have 1:1 side slopes.)
 - c) Water and sewer mains shall not exceed a depth of 12' below finished grade, unless authorized in these conditions
 - d) All sewer manholes shall have all-weather 10-ton vehicular access unless authorized by these conditions. (Environmental Utilities)
8. Recycled water infrastructure shall be designed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards. The applicant shall pay all applicable recycled water fees. Easements shall be provided as necessary for recycled water infrastructure. (Environmental Utilities)
9. All sewer on-site between MHs shall be considered public. (Environmental Utilities)
10. Organic enclosures shall be located perpendicular to the main drive aisle. (Environmental Utilities)
11. Fire hydrants shall be located as required by the Fire Department. The maximum distance between fire hydrants shall not exceed 1000 feet on center. (Fire)
12. Minimum fire flow is 3,000 gallons per minute with 20 lbs. psi residual pressure. A change in any of the conditions may increase the required fire flow. (Fire)
13. Any facilities proposed for placement within public/electric utility easements shall be subject to review and approval by the Electric Department before any work commences in these areas. This includes, but is not limited to, landscaping, lighting, paving, signs, trees, walls, and structures of any type. (Electric)
14. The design for electrical service for this project will begin when the Electric Department has received a full set of improvement plans for the project. (Electric)
15. All landscaping in areas containing electrical service equipment shall conform with the "Electric Department Landscape Design Requirements" as outlined in Section 10.00 of the Electric Department's "Specifications for Commercial Construction." (Electric)

16. The Electric Department requires the submittal of the following information in order to complete the final electric design for the project:
 - one (1) set of improvement plans
 - load calculations
 - electrical panel one-line drawings
17. The location and design of the gas service shall be determined by PG&E. The design of gas service for this project shall not begin until PG&E has received a full set of City approved improvement plans for the project. (PG&E)
18. It is the developer's responsibility to notify PG&E of any work required on PG&E facilities. (PG&E)

PRIOR TO OR UPON RECORDATION OF FINAL/PARCEL MAP:

19. The following easements shall be provided and shown on the Final/Parcel Map or by separate instrument, unless otherwise provided for in these conditions:
 - a) Water, sewer, and reclaimed water easements; and,
 - b) The applicant shall dedicate an easement to the City of Roseville for the bus stop located on NE corner of Fiddymment Road at Blue Oaks Blvd. (shelter #176). The easement language/documents shall be drafted for approval and acceptance by the City of Roseville and recorded with the map. (Alternative Transportation, Engineering)

Easement widths shall comply with the City's Improvement Standards and Construction Standards. (Environmental Utilities, Electric, Engineering)

20. All existing easements shall be maintained, unless otherwise provided for in these conditions. (Environmental Utilities, Electric, Engineering)
21. Separate document easements required by the City shall be prepared in accordance with the City's "Policy for Dedication of Easements to the City of Roseville". All legal descriptions shall be prepared by a licensed Land Surveyor (Environmental Utilities, Electric, Engineering)
22. A declaration of Conditions, Covenants and Restrictions (CC&Rs), in a form approved by the City Attorney, shall be recorded on the entire property concurrently with the Final/Parcel Map. The CC&Rs shall include the following item(s):
 - a) A clause stating that the property owners within this subdivision shall agree to participate in a Transportation Systems Management (TSM) Plan and shall agree to enter into a Transportation Management Agreement with the City of Roseville (Alternative Transportation, Planning).
 - b) A clause prohibiting the amendment, revision or deletion of any sections in the CC&Rs required by these conditions of approval without the prior written consent of the City Attorney. (Attorney)
 - c) A clause requiring reciprocal access and parking for all parcels. (Planning)

23. In the event that the Final (Parcel) Map will record prior to the completion of on-site construction, all utility and access easements shall be placed on the face of the Map to the satisfaction of the City Engineer. If all on-site improvements are complete prior to the recordation of the map, then a separate agreement allowing all parcels/lots the rights of reciprocal access, rights to construct, and parking shall

be submitted to the City as a part of final/parcel map submittal. Said agreement shall be in a form acceptable to the City Attorney and referenced on the face of the recorded map. (Engineering)

24. The Final/Parcel Map shall include an irrevocable offer to dedicate public rights-of-way and public and/or private easements as required by the City. (Engineering)
25. The words "traffic control appurtenances" shall be included in the list of utilities allowed in public utilities easements (PUE's) located along public roadways. (Engineering)
26. The Final/Parcel Map shall be submitted per, "The Digital Submittal of Cadastral Surveys." A plot or print of the submittal shall accompany the electronic copy. The complete submittal shall occur after the Engineering Department approval but prior to City Council approval of the Final/Parcel Map. (Engineering)
27. Electric construction costs incurred by the City of Roseville Electric Department for this project shall be paid for by the developer per the applicable policy. (Electric)
28. Additional internal easements will be required to cover primary electrical facilities to the project when the final electrical design is completed. (Electric)
29. All Electric Department facilities, including streetlights where applicable, shall be designed and built to the "City of Roseville Specifications for Commercial Construction." (Electric)
30. The City of Roseville Electric Department has electrical construction charges which are to be paid by the developer and which are explained in the City of Roseville "Specification for Commercial Construction." These charges will be determined upon completion of the final electrical design. (Electric)
31. The Environmental Utilities Department shall make a determination that there is adequate conveyance and treatment capacity in the City sewer system to handle the newly created Lot/Parcels. (Environmental Utilities)
32. The applicant shall pay all applicable water and sewer fees. (Environmental Utilities)

OTHER CONDITIONS OF APPROVAL:

33. The applicant shall pay City's actual costs for providing plan check, installation and inspection services. This may be a combination of staff costs and direct billing for contract professional services. (Environmental Utilities, Engineering)
34. Any relocation, rearrangement, or change to existing electric facilities due to this development shall be at the developer's expense. (Electric)
35. It is the responsibility of the developer to insure that all existing electric facilities remain free and clear of any obstructions during construction and when the project is complete. (Electric)
36. No grading activities shall be permitted within 10 feet around the power poles. If there are major grade changes around the poles, they will be handled case-by-case during civil improvement plan review. (Electric)
37. Contractors working under and around power lines shall maintain Cal OSHA requirements, which will be discussed at the Pre-Construction meeting. (Electric)
38. If site survey or earth moving work results in the discovery of hazardous materials in containers or what appears to be hazardous wastes released into the ground, the contractor shall notify the Roseville Fire Department immediately. A representative from the Fire Department will make a determination as to

whether the incident is reportable or not and if site remediation is required. Non emergency releases or notifications about the presence of containers found shall be reported to the Fire Department. (Fire)

39. The project shall comply with all applicable environmental mitigation measures identified in the Plaza at Blue Oaks Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program. (Planning)

CONDITIONS OF APPROVAL FOR THE TREE PERMIT (FILE #PL17-0368)

PRIOR TO ISSUANCE OF ANY PERMITS OR ANY CONSTRUCTION ON-SITE:

1. All recommendations contained in the Arborist Report (Exhibit J) are incorporated by reference into these conditions, except as modified herein. (Planning)
2. Tree(s) # 1510, 1513, 1514, 1521, 1522, 1523, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1559, 1562, 1563, 1564 (or as listed in Exhibit J and shown on Exhibit K) are approved for removal with this tree permit. All other native oak trees shall remain in place. Trees to be removed shall be clearly marked in the field and inspected by Planning Staff prior to removal. Removal of the trees shall be performed by or under the supervision of a certified arborist. (Planning)
3. The developer shall be responsible for the replacement of the total number of inches proposed for removal. The total number of inches for this project is 721. Mitigation must be provided in the form of payment in the amount of \$39,294 prior to tree removal, and planting of non-native and native trees (as shown in the landscape plan, included as Exhibit I). (Planning)
4. No activity shall be permitted within the protected zone of any native oak tree beyond those identified by this report. (Planning)
5. A \$10,000 cash deposit or bond (or other means of security provided to the satisfaction of the Planning Division) shall be posted to ensure the preservation of all remaining trees during construction. The cash deposit or bond shall be posted in a form approved by the City Attorney. Each occurrence of a violation on any condition regarding tree preservation shall result in forfeiture of all or a portion of the cash deposit or bond. (Planning)
6. A violation of any of the conditions of this Tree Permit is a violation of the Roseville Municipal Code, the Zoning Ordinance (Chapter 19.74) and the Tree Preservation Ordinance (Chapter 19.66). Penalties for violation of any of the conditions of approval may include forfeiture of the bond, suspension or revocation of the permit, payment of restitution, and criminal penalties. (Planning)
7. A fencing plan shall be shown on the approved site plan and/or improvement plans demonstrating the Protected Zone for the affected trees. A maximum of three feet beyond the edge of the walls, driveways, or walkways will be allowed for construction activity and shall be shown on the fencing plan. The fencing plan shall be reviewed and approved by the Planning Division prior to the placement of the protective fencing. (Planning)
8. The applicant shall install a minimum of a five-foot high chain link fence (or acceptable alternative) at the outermost edge of the Protected Zone of the oak tree. Where encroachment is permitted pursuant to Condition 4, above, the fencing for encroachments shall be installed at the limit of construction activity. The applicant shall install signs at two equidistant locations on the temporary fence that are clearly visible from the front of the lot and where construction activity will occur. The size of each sign shall be a minimum of two feet (2') by two feet (2') and must contain the following language: "WARNING THIS

FENCE SHALL NOT BE REMOVED OR RELOCATED WITHOUT WRITTEN AUTHORIZATION FROM THE PLANNING DIVISION". (Planning)

9. Once the fencing is installed, the applicant shall schedule an appointment with the Planning Division to inspect and approve the temporary fencing before beginning any construction. (Planning)
10. The applicant shall arrange with the arborist to perform, and certify in writing, the completion of deadwooding, fertilization, and all other work recommended for completion prior to the approval of improvement plans. Pruning shall be done by an Arborist or under the direct supervision of a Certified Arborist, in conformance with International Society of Arboriculture (I.S.A.) standards. Any watering and deep root fertilization which the arborist deems necessary to protect the health of the trees as noted in the arborist report or as otherwise required by the arborist shall be completed by the applicant. (Planning)
11. A utility trenching pathway plan shall be submitted depicting all of the following systems: storm drains, sewers, water mains, and underground utilities. The trenching pathway plan shall show the proposed locations of all lateral lines. (Planning)
12. A Site Planning Meeting shall be held with the applicant, the applicant's primary contractor, the Planning Division and the Engineering Division to review this permit, the approved grading or improvement plans, and the tree fencing prior to any grading on-site. The Developer shall call the Planning Division and Engineering Division two weeks prior to the start of grading work to schedule the meeting and fencing inspection. (Planning)
13. The following information must be located on-site during construction activities: Arborist Report, approved site plan/improvement plans including fencing plan, and conditions of approval for the Tree Permit. All construction must follow the approved plans for this tree permit without exception. (Planning)
14. All preservation devices (aeration systems, oak tree wells, drains, special paving, etc.) shall be designed and installed as required by these conditions and the arborist's recommendations, and shall be shown on the improvement plans or grading plans. (Planning)
15. If any native ground surface fabric within the Protected Zone must be removed for any reason, it shall be replaced within forty-eight (48) hours. (Planning)
16. Storage or parking of materials, equipment, or vehicles is not permitted within the Protected Zone of any oak tree. Vehicles and other heavy equipment shall not be operated within the Protected Zone of any oak tree. (Planning)
17. Where recommended by the arborist, portions of the foundation shall be hand dug under the direct supervision of the project arborist. The certified arborist shall immediately treat any severed or damaged roots. Minor roots less than one (1) inch in diameter may be cut, but damaged roots shall be traced back and cleanly cut behind any split, cracked or damaged area. Major roots over one (1) inch in diameter may not be cut without approval of an arborist and any arborist recommendations shall be implemented. (Planning)
18. The temporary fencing shall remain in place throughout the entire construction period and shall not be removed without obtaining written authorization from the Planning Division. In no event shall the fencing be removed before the written authorization is received from the Planning Division. (Planning)

PRIOR TO ISSUANCE OF FINAL:

19. Within 5 days of the completion of construction, a Certification Letter from a certified arborist shall be submitted to and approved by the Planning Division. The certification letter shall attest to all of the work (regulated activity) that was conducted in the protected zone of the tree, either being in conformance with this permit or of the required mitigation still needing to be performed. (Planning)
20. The approval of this Tree Permit shall run with the Design Review Permit and shall tentatively expire on **May 14, 2022**. The applicant may extend the tree permit for an additional year subject to the extension requirements for a Design Review Permit. (Planning)

EXHIBITS

- A. Initial Study/Mitigated Negative Declaration
- B. Site Plan
- C. Tentative Subdivision Map
- D. Preliminary Grading & Drainage Plan
- E. Preliminary Utility Plan
- F. Elevations
- G. Materials & Color Board
- H. Photometric & Site Lighting Plan
- I. Landscape Plan
- J. Arborist Report
- K. Preliminary Tree Impact Plan

NOTE: Exhibits A-K are not included with CC Attachment 1 (Planning Commission Staff Report) because they are already included as exhibits to the City Council Communication.

<u>Note to Applicant and/or Developer:</u> Please contact Planning Division staff at (916) 774-5276 prior to the Commission meeting if you have any questions on any of the recommended conditions for your project. If you challenge the decision of the Commission in court, you may be limited to raising only those issues which you or someone else raised at the public hearing held for this project, or in written correspondence delivered to the Planning Manager at, or prior to, the public hearing.
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DEVELOPMENT SERVICES DEPARTMENT – PLANNING DIVISION

311 Vernon Street, Roseville, CA 95678 (916) 774-5276

MEMORANDUM

To: Planning Commission

From: Kinarik Shallow, Associate Planner

Date: May 13, 2020

Re: Comments on the Initial Study/Mitigated Negative Declaration for WRSP PCL F-31 – The Plaza at Blue Oaks (File #PL17-0368)

The purpose of this memorandum is to provide a response to the May 6, 2020 letter from the Law Office of Robert M. Bone, representing an unincorporated association of Roseville community residents (the “Association”), to the City of Roseville (City). The letter is included as Attachment 1.

In the letter, the Association challenges the adequacy of the City’s environmental review, alleging that the Initial Study/Mitigated Negative Declaration (IS/MND) prepared for the Plaza at Blue Oaks project (“Project”) is not in compliance with the California Environmental Quality Act (CEQA). However, as this response will show, the Association has failed to offer any evidence that the initial study analysis is flawed. As clearly stated in CEQA Guidelines Section 15384, “argument, speculation, [and] unsubstantiated opinion or narrative” is not substantial evidence.

The Association’s letter claims that the IS/MND fails to adequately inform the public about environmental impacts, by citing CEQA Guidelines Section 15002(a), which identifies the basic purposes of CEQA. The Association has included a paraphrased portion of this section and inaccurately concludes that the environmental impacts of a project are required to be analyzed in an Environmental Impact Report (EIR). The Association fails to acknowledge the process in determining whether an EIR is the appropriate environmental document. For instance, CEQA Section 15063(a) identifies that an initial study is used to determine if the project may have a significant effect on the environment. An initial study is not required if the lead agency can determine that an EIR will clearly be required for the project, but it may still be desirable. In the case of this Project, the City prepared an initial study that led to a mitigated negative declaration. The Project’s initial study analysis relies upon two certified Specific Plan EIRs (the Amourso Ranch Specific Plan EIR and the West Roseville Specific Plan EIR) and is consistent with the land use designations examined in these documents. In fact, the WRSP anticipated the Project site to be developed with a conventional community/neighborhood retail center, consistent with the proposed Project. Consistent with CEQA Guidelines Section 15183, the Initial Study focuses on effects particular to the specific project site, impacts which were not analyzed within the EIRs, and impacts which may require revisiting due to substantial new information.

The Association asserts the City’s findings in determining a Mitigated Negative Declaration were incorrectly reached, but does not provide substantial evidence to support this claim. The Association further alleges the Project cannot be approved as proposed because there are “feasible mitigation measures available” that were not considered in the IS/MND. Again, the letter does not provide substantial evidence to support this claim nor does it identify what these supposed mitigation measures are.

Noise

The Association claims that the initial study analysis found noise impacts would occur only during construction and that the analysis “dismissed” the noise impacts caused by operation of the Project. This statement is flawed, as the IS/MND concluded noise impacts would occur during both construction and operation of the Project, and that these impacts would be considered less than significant and less than significant with mitigation, respectively (see Section XIII of the Initial Study). Mitigation measures were

incorporated based on the findings and recommendations made in the Environmental Noise Assessment (ENA) prepared by Bollard Acoustical Consultants, Inc. (see Attachment 6 of the IS/MND). While the ENA recommended mitigation measures specific to the car wash operations, loading dock and on-site truck circulation areas (as these were found to be the Project's "primary stationary noise sources"), the IS/MND also includes noise mitigation measures applicable to all commercial uses within 150 feet of residential uses. These measures are included as Attachment 2 of the IS/MND. The Association claims the noise analysis underestimates the noise levels that would be generated by the Project, but does not provide any data to support this argument. The ENA analysis is based on a combination of on-site noise level measurements, application of accepted noise modeling techniques, and file data for comparable commercial centers, which was then compared against the City's noise level standards.

Air and Water Quality

The Association argues that air quality issues were not properly considered in the IS/MND. The Association further argues that the proposed 12-pump gas station and car wash would increase poor air quality, ground water quality, and soil contamination during construction and operation. The Association fails to provide substantial evidence to support these claims and instead relies on argument and speculation.

Air quality impacts of the Project were evaluated in Section III (Air Quality) of the Initial Study. The analysis concluded that the Project was under the Placer County Air Pollution Control District (PCAPCD)'s adopted thresholds of significance for both construction and operational emissions for criterial air pollutants. In addition, the PCAPCD governs air quality impacts specifically related to gas stations and requires permits prior to construction and prior to dispensing gasoline to ensure the required local, state, and federal standards are adhered to as it relates to air quality impacts. The air quality analysis is supplemented with a Health Risk Analysis (HRA), prepared by Trinity Consultants, to determine the potential cancer risk that will be generated as a result of the Project (see Attachment 3 of the IS/MND). The HRA was reviewed by PCAPCD and concluded the annual amount of gasoline dispensed from the facility would be below PCAPCD's significance thresholds for cancer and non-cancer health risks.

As stated in Section X (Hydrology & Water Quality) of the Initial Study, the City's CEQA Findings of Implementing Procedures indicate that compliance with the City's Design/Construction Standards (Resolution 07-107), Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch. 14.20), and Stormwater Quality Design Manual (Resolution 16-152) will prevent significant impacts related to water quality and erosion. In addition, grading activities are subject to the City's Improvement Standards, which include provision of proper drainage, appropriate dust control, and erosion control measures. The Project is required to prepare and submit a Storm Water Pollution Prevention Plan (SWPP) to the Regional Water Quality Control Board (RWQCB) to prevent the discharge of any unpermitted pollution and to preserve water quality.

Transportation

The Association claims that "morning, afternoon, and other peak-hour commute times will be permanently greatly increased" from the Project and identified this as a significant impact. The letter fails to provide substantial evidence to support this claim. As cited in Section XVII (Transportation) of the Initial Study, CEQA Guidelines Section 15064.3 indicates that a project's effect on automobile delay cannot be considered a significant impact. However, the project is evaluated for consistency with the General Plan Circulation Element, which includes an analysis of delay as a potential policy impact. The Circulation Element establishes Level of Service (LOS) C or better as an acceptable operating condition at all signalized intersections during a.m. and p.m. peak hours; a minimum of 70% of all signalized intersections must maintain LOS C. The Initial Study is supplemented with a short-term traffic study prepared by Kimley-Horn (Attachment 7 of the IS/MND), which concluded that the signalized intersections surrounding the project would operate at LOS C or better during the Existing (2018) plus Project conditions. In addition, the traffic study included recommendations to ensure sufficient vehicle throat depths, tapers, and storage capacity; the Project incorporated these recommendations into the project design.

Conclusion

The Association concludes in the same manner it began, by claiming the IS/MND fails to adequately disclose, evaluate, and mitigate the Project's environmental impacts, and requests an "appropriate" environmental review be conducted and circulated for public review. As stated throughout this response letter, the Association does not provide substantial evidence to support its claims. Staff is confident that the Initial Study adequately discloses, evaluates, and mitigates the Project's environmental impacts and a Mitigated Negative Declaration is the appropriate environmental determination for this project; the Initial Study provides substantial evidence to support this finding.

Law Office of
ROBERT M. BONE

May 6, 2020

VIA EMAIL ONLY

publiccomment@roseville.ca.us

City of Roseville Planning Commission
311 Vernon Street
Roseville, California 95678

RE: Comments on Proposed Mitigated Negative Declaration for
WRSP PCL F-31 – The Plaza at Blue Oaks; File # PL17-0368

Dear Sir or Madam:

Our firm writes on behalf of an unincorporated association of Roseville community residents (the "Association") to provide comments on the proposed mitigated negative declaration finding prepared by the City of Roseville Planning Commission ("Planning Commission"), and proposed by Joe Zawidski, West Roseville Development Company, Inc., the project owner ("Owner"), and Joe Zawidski, Signature Management Company, the project developer ("Developer") for the Project defined below.

The proposed Project, located at 1950 Blue Oaks Boulevard, in the City of Roseville, Placer County, CA (APN 017-117-093-000) is a proposed retail center consisting of an approximately 35,000 square-foot anchor grocery store, a 12-pump gas station with an approximately 3,500 square-foot convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet (the "Project"). The Project approvals include a Design Review Permit to review the site design and proposed buildings, a Tree Permit to remove several native oak trees on the westerly portion of the site, and a Tentative Subdivision Map to subdivide the parcel into eight (8) lots (the "Approvals"). No building is being proposed on Lot 2 at this time, which will be located on the northeastern corner of the site and will consist of approximately 1.3 acres.

The Association includes individuals that may be adversely affected by the potential traffic, air quality, ground water quality, soil quality, noise, public health, and other environmental impacts caused by the Project. The Association includes individuals who live and work in Roseville and their families. Because they are local residents, the individual members of the Association would be directly affected by the traffic, air quality, ground water quality, noise, public health and other environmental issues created by the Project. Individual members may also

work on the Project itself. As such, they would be first in line to be exposed to any health and safety hazards that exist on site.

The Initial Study/Mitigated Negative Declaration is Not in Compliance With CEQA

The IS/MND Fails to Adequately Inform the Public About Environmental Impacts

Based upon our review of the initial study/mitigated negative declaration (“IS/MND”), we feel the IS/MND fails to comply with California Environmental Quality Act (“CEQA”) requirements in the following ways. CEQA is designed to inform decisionmakers, and the public about the potential significant environmental effects of a project. CEQA Guidelines §15002(a)(1). CEQA requires that an agency analyze potentially significant environmental impacts in an [environmental impact report (“EIR”)]. Pub. Resources Code §21000; CEQA Guidelines §15002. Specifically, that EIR should result from “extensive research and information gathering,” including consultation with state and federal agencies, local officials, *and the interested public*. (emphasis added.) *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm.* (2001) 91 Cal.App.4th 1344, 1367 (Berkeley Jets); *Schaeffer Land Trust v. San Jose City Council* (1989) 215 Cal.App.3d 612, 620.

CEQA also directs public agencies to avoid, or reduce, environmental damage when possible by requiring alternatives, or mitigation measures. CEQA Guidelines §15002(a)(2)-(3); *Berkeley Jets*, *supra*, 91 Cal.App. 4th at 1354. The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to “identify ways that environmental damage can be avoided or significantly reduced.” CEQA Guidelines §15002(a)(2). If a project has a significant effect on the environment, the agency may approve the project only upon a finding that it has “eliminated or substantially lessened all significant effects on the environment where feasible,” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns” specified in CEQA §21081. CEQA Guidelines §15092(b)(2)(A)-(B).

The IS/MND begins with a Declaration, on page 2, that states:

The Planning Manager has determined that the above project will not have significant effects on the environment and therefore does not require preparation of an Environmental Impact Report. The determination is based on the attached initial study and the following findings [“(Findings”)]

A. The project will not have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels,

threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare or threatened species, reduce the number or restrict the range of rare or endangered plants or animals or eliminate important examples of the major periods of California history or prehistory.

B. The project *will not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals. (emphasis added.)*

C. The project *will not have impacts, which are individually limited, but cumulatively considerable. (emphasis added.)*

D. The project *will not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly. (emphasis added.)*

E. No *substantial evidence exists that the project may have a significant effect on the environment. (emphasis added.)*

F. The project incorporates all applicable mitigation measures identified in the attached initial study.

G. This Mitigated Negative Declaration reflects the independent judgment of the lead agency.

The Association asserts that substantial evidence exists to support their assertion that the Findings, noted above, were incorrectly reached. It defies imagination how the construction of a 12-pump gas station, with its attendant underground gasoline storage tanks, a car wash that will undoubtedly wash chemicals into the soil, and potentially into the ground water, and other commercial uses *will not cause any impact* to the environment such that a fulsome environmental review is unnecessary. The planned uses will have considerable cumulative, long-term, adverse impacts on the environment and nearby residents, either directly, or indirectly. Approving the Project without a full environmental review amounts to achieving a short-term goal to the disadvantage of long-term environmental goals.

The IS/MND incorporates a checklist of potential environmental impacts. Although the analysis considered various impacts as provided in the checklist, and as required by CEQA, the IS/MND found in the vast majority of the analysis that the Project would have “No Impact,” or a “Less Than Significant Impact” on the environment. Thus, mitigation measures were not adequately considered.

Potential impacts were found in only two cases. In one case, the IS/MND found the Project may create significant impacts on the resources of California Native American tribes. Of greater concern to the Association, however, is the fact that the analysis found noise impacts would occur only during construction of the Project, but dismissed the noise impacts caused by operation of the Project after the construction is completed. This effect was considered to be “Less Than Significant With Mitigation” if such mitigation measures were implemented during construction. Little attention was paid to the fact that the Project will flank two existing residential neighborhoods. The permanent noise levels that will be generated by a 12-pump gas station, an automatic car wash and convenience store, and 35,000 a foot grocery store, in addition to other anticipated commercial uses, are certain to increase substantially over current ambient noise levels in the neighborhood. This is hardly a “Less Than Significant” impact. This impact, and potential mitigation measures to lessen the impact, warrants further study.

Other than the two instances noted above, the IS/MND noted no significant impacts to the environment caused by the Project. The Association disagrees. The subdivision of a single parcel into 8 parcels and the construction of more than 48,000 square feet of commercial structures in that footprint absolutely creates significant negative impacts on the surrounding residential community. These impacts to the traffic, air quality, ground water quality, soil quality, noise and other aspects of the community must be properly determined and studied.

Air quality issues were not properly considered in the IS/MND. Many of the residents near the Project are older and/or are otherwise considered to be sensitive receptors. The dust, soot, exhaust, fumes and other particulate matter that will necessarily increase due to large construction vehicles, and further due to permanently increased traffic and idling vehicles in the area, will create negative health impacts on residents, who are sensitive receptors, for an unknown period of time. These sensitive receptors may experience prolonged and significant impacts to their health.

The negative health effects on area residents caused by the Project will be exacerbated by the construction of a 12-pump gas station as the site. Not only will this increase poor air quality, ground water quality, and soil contamination during construction, but nearby residents will be permanently negatively impacted by known carcinogens that will be pumped into underground tanks, as well as exhaust and fumes created by cars idling and using the gas station. Additionally, detergents, waxes and other chemicals used by the car wash will be rinsed away, and may flow into the ground, eventually reaching the water table. This will have deleterious effects on the water table and the health of nearby residents. These issues were found to cause either “No Impact,” or “Less Than Significant Impact” in the IS/MND. These deleterious impacts must be properly studied so that their true impacts on nearby residents can be determined and mitigated.

The IS/MND Fails to Consider Feasible Mitigation Measures That Alleviate Negative Environmental Impacts

The Planning Commission cannot approve the Project as proposed because there are feasible mitigation measures available which would substantially lessen one, or more, of the Project’s significant environmental effects. Pub. Resources Code, § 21002. For example, morning,

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Page 5 of 5

afternoon and other peak-hour commute times will be permanently greatly increased throughout the area if the Project is developed as currently proposed. The IS/MND failed to propose mitigation measures to alleviate this significant impact.

The Environmental Noise Assessment, included as Attachment 6 to the IS/MND, states, in pertinent part, on Page 6 that the “Noise Element of the City of Roseville General Plan establishes non-transportation noise exposure limits as summarized...in Table 1 (Table IX-3 of the Noise Element). These limits are applicable to non-transportation noise sources (i.e., on-site truck movements, loading docks, and car wash operations) affecting existing noise-sensitive land uses.” The report suggests that a 6-foot sound barrier be constructed and that construction trucks be limited in their hours of operation. The report dubiously suggested this 6-foot sound barrier is enough to mitigate the significant impact the operation of the gas station, the loading dock, the car wash and the other commercial uses will cause to adjacent neighborhoods after construction.

The noise assessment in the IS/MND dismissed operations noise that will be caused by idling vehicles and traffic at the 12-pump gas station and ignores the Project’s other commercial uses. Instead, although the document recognized the fact that the nearest noise-sensitive land uses to the Project site are existing and future residential developments located north, south, and east of the Project site, significant impacts to these receptors was minimized by the report. It was assumed that each of the evaluated noise sources would only operate during limited, mostly daytime, hours. Based on this assumption, Roseville’s daytime and nighttime noise level standards for noise-sensitive residential land were applied to the Project’s noise sources. This represents a serious underestimation of the noise levels to be generated by the commercial uses in this Project.

Due to the fact that the IS/MND wholly dismissed the vast majority of the potential environmental impacts caused by the Project, mitigation measures were inadequately considered or completely ignored. For this reason, the IS/MND fails to adequately disclose, evaluate, and mitigate the Project’s environmental impacts, resulting in a legally deficient CEQA document. The Planning Commission must conduct an appropriate environmental review that addresses these inadequacies and must circulate the document for public review to consider these critical issues. Thank you for your attention to these comments.

Sincerely,



Robert M. Bone, Esq.

NATHAN L. SCHEG
CHRISTOPHER C. M. WAUD

IRONHORSE LAW GROUP

A PROFESSIONAL LAW CORPORATION

2121 NORTH CALIFORNIA BLVD., SUITE 290
WALNUT CREEK, CA 94596
TELEPHONE: (925) 399-6108
FACSIMILE: (925) 215-8427

May 12, 2020

VIA EMAIL ONLY

publiccomment@roseville.ca.us

City of Roseville Planning Commission
311 Vernon Street
Roseville, CA 95678

**RE: Comments on the Initial Study/Mitigated negative Declaration for WRSP PCL F-31
– The Plaza at Blue Oaks (File #PL17-0368))**

Dear Sir or Madam:

This office represents West Roseville Project Development Company, Inc., the project owner ("Owner"), and Signature Management Company, the project developer ("Developer"), of the above-referenced project. The purpose of this letter is to provide a response to the May 6, 2020 letter from the Law Offices of Robert M. Bone, representing an unincorporated association of Roseville community residents (the "Association"), to the City of Roseville ("City"). Owner and Developer are real parties in interest.

In the letter, the Association challenges the adequacy of the City's environmental review, alleging that the Initial Study/Mitigated Negative Declaration ("IS/MND") prepared for the Plaza at Blue Oaks project ("Project") is not in compliance with the California Environmental Quality Act ("CEQA"). However, Owner and Developer agree with Planning Commission Staff ("Staff") that the Initial Study adequately discloses, evaluates, and mitigates the Project's environmental impacts and a Mitigated Negative Declaration is the appropriate environmental determination for this project. Owner and Developer also assert that all aspects of CEQA with regard to the IS/MND have been fully complied with and that an Environmental Impact Report ("EIR") is not required for the Project.

CEQA requires the preparation of an EIR whenever an agency proposes to approve or implement a project that "may have a significant effect on the environment." (§§ 21100, 21151.) "If there is no substantial evidence of any significant environmental impact, however, the agency may [instead] adopt a negative declaration." (*City of Redlands v. County of San Bernardino*, (2002) 96 Cal.App.4th 398, 405.) A *mitigated* negative declaration may be utilized by an agency when a project as initially proposed may have a significant effect on the environment but will not have a significant environmental effect because changes have been made or agreed on that mitigate such potential effects. (Cal. Code Regs. tit. 14, § 15071(e)). In evaluating a claim that an agency improperly approved a project by using a negative declaration, rather than preparing an EIR, a trial court applies the "fair argument" test. (*Porterville Citizens for Responsible Hillside Development v. City of Porterville*, (2007) 157 Cal.App.4th 885, 899.) "Under this test, the agency must prepare an EIR whenever substantial evidence in the record supports a fair

May 12, 2020

Page 2

argument that a proposed project may have a significant effect on the environment." (Gentry v. City of Murrieta, (1995) 36 Cal.App.4th 1359, 1399-1400.) A trial court's function is to decide whether substantial evidence supports the agency's conclusion as to whether a fair argument of environmental impact could be made. (Id. at p. 1399.)

Like any petitioner challenging an agency's decision to proceed by negative declaration, the Association bears the burden of proof "to demonstrate by citation to the record the existence of substantial evidence supporting a fair argument of significant environmental impact." Gentry v. City of Murrieta (1995) 36 Cal.App.4th 1359, 1379. The Association cannot meet this burden.

CEQA and its implementing regulations provide that facts, reasonable assumptions predicated on facts, and expert opinions supported by facts may constitute substantial evidence; argument, speculation, unsubstantiated opinion or narrative, clearly inaccurate or erroneous factual statements or evidence of social or economic impacts that do not result in physical impacts on the environment may not. (§§ 21080, subd. (c); 21080. 2, subd (c); 14 Cal. Code Regs., §§ 15064, subd. (f)(5), 15384.) "[I]n the absence of a specific factual foundation in the record, dire predictions by non-experts regarding the consequences of a project do not constitute substantial evidence." (Porterville Citizens for Responsible Hillside Development, *supra*, 157 Cal.App.4th at p. 901.) In its letter, the Association relies on nothing more than argument, speculation, and unsubstantiated opinion and narrative in its attempt to claim that further environmental study is required. Such a dearth of substantiated evidence cannot and will not rise to the level of substantial evidence required to overcome the Planning Commission's discretionary and well-supported decision as set forth in its IS/MND.

The Planning Commission has taken all necessary specific actions to achieve CEQA compliance to date and no further environmental review is required.

Sincerely,

IRONHORSE LAW GROUP PC

A handwritten signature in black ink, appearing to read "Nathan Scheg". The signature is fluid and cursive, with the first name "Nathan" and last name "Scheg" clearly distinguishable.

Nathan L. Scheg, Esq.

cc: Client (via email only)

Bitter, Greg

From: D.T. <obnokshush1@gmail.com>
Sent: Tuesday, May 12, 2020 6:29 PM
To: Public Comment
Subject: Planning commission comment - Plaza at Blue Oaks

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

Please don't push a new Sprouts Market at Fiddymment and Blue Oaks Blvd through the planning commission during the current crisis.

There are already five other grocery stores within a 3.5 mile radius from the proposed location. Why add more traffic congestion for a sixth store in such a small area? Additionally, there are five other drug stores and six gas stations within the same 3.5 mile radius.

I have concerns regarding the impact of traffic, the environment, and to the quality of life for all of us. Please do not push this through.

Concerned Roseville Resident

Roseville Solidarity
Sent from my I-phone

Bitter, Greg

From: D.T. <obnokshush1@gmail.com>
Sent: Tuesday, May 12, 2020 6:38 PM
To: Public Comment
Subject: Planning commission comment - Plaza at Blue Oaks

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

Sprouts is not a good fit for this area why do out of state Competition!! Especially during this pandemic!! We need union based companies, That have supported are community with competitive wages , excellent medical benefits and to retire with dignity! why not promote local area stores that have supported this community for years, companies whose Dollars go back into are community.. we need to respectful to are own citizens who many have lost jobs ... be smart with this ...

Roseville solidarity

Concerned Roseville Resident

Sent from my I-phone

Bitter, Greg

From: Stephane Brown <sbrown@ufcw8.org>
Sent: Wednesday, May 13, 2020 11:19 AM
To: Public Comment
Cc: Stephane Brown
Subject: The Plaza at Blue Oaks

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

To Whom it May Concern:

I am writing you today in regards to the Plaza at Blue Oaks project. I am concerned the this project will have a negative impact on traffic (which will also impact emergency response times), air quality, existing union jobs and small businesses. I would like to request that a full comprehensive EIR be conducted to effectively show the actual impact that this project would have on the residents, existing businesses, and those who work in the area. There are currently incomplete projects nearby and as a result, does not reflect the real time impact on the community; the development of those existing projects and the complete impact that they will have on the community should be included in the EIR as requested above. Health, safety, and the quality of lives is the most important aspect of any community. There is a huge responsibility to ensure public health and safety of those who live and work in the community and whose will be directly impacted by this project.

Thank you for your time,

Stephanie Brown
916-716-0772 cell

Bitter, Greg

From: cool4you@att.net
Sent: Wednesday, May 13, 2020 11:38 AM
To: Public Comment
Subject: OPPOSE - Sprout's Family Market at The Plaza at Blue Oaks

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

Dear Roseville Planning Commission:

I am writing to submit my opposition to the proposed new Sprout's Family Market planned for The Plaza at Blue Oaks.

This project will increase traffic dramatically in this area and cause more backups on Highway 65. I have worked in Placer County for over 30 years, and every year the traffic gets more congested and outrageous.

The environmental impacts will also be detrimental to the air quality and to the animals in the area.

This proposed new store will take away business from employers currently operating in the surrounding area which will hurt the people employed at those location which in turn will hurt the economy.

For the reasons listed above, I OPPOSE this project. Please vote NO.

Thank you for your time and consideration.

Sincerely,

Donna Rauch
Coalition of Organized Labor
PO Box 1314
Rocklin, CA 95677
(916) 332-5642

Bitter, Greg

From: Trevor Griffin <trevor.griffin@rocketmail.com>
Sent: Wednesday, May 13, 2020 11:56 AM
To: Public Comment
Subject: Another grocery store in West Roseville

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

To whom it may concern

It has been brought to my attention that there are plans for yet another grocery store in West Roseville. There is already 4 grocery stores within a 2 mile driving distance of my home and they are breaking ground on a 5th. That Number of grocery stores in such a small area raise major concerns for me. One being this is only going to make the traffic worse on my end of town. The other is that this is going to adversely affect my friends and neighbors who currently work in the existing grocery stores. This would adversely affect them in their number of hours due to a loss of business. I don't want their hours to be cut or the other companies to do potential layoffs due to the fact that this end of town becomes oversaturated with grocery stores. Thank you for your time and consideration in this matter.

Bitter, Greg

From: Patti Brown <pbrown@ufcw8.org>
Sent: Wednesday, May 13, 2020 12:33 PM
To: Public Comment
Subject: Sprouts farmers market

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

To whom it may concern, I'm asking you to do a full impact study on the sprouts farmers market to go in on 1950 Blue Oaks Blvd. in Roseville there's already an existing for grocery stores in less than 2 miles of that area with another nugget market going in on blue Oaks less than a half a mile down the road the impact of traffic excess omissions and the financial effect that it would have on the already existing workers would be extremely detrimental to the area I'm asking you do A full impact study as well as aboard the project you may contact me at 916-529-2091 if you need further comments thank you for your time Patti Brown

Sent from my iPhone

Bitter, Greg

From: Joan Burgdorf <joan.burgdorf55@gmail.com>
Sent: Wednesday, May 13, 2020 4:25 PM
To: Public Comment
Subject: Sprouts Farmers Market

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

To whom it may concern,

My name is Joan Burgdorf, I work at Raley's in Lincoln and have for the past four years. In regards to the proposed retail center at 1950 Blue Oaks Blvd. I would like to share my concerns and objections to this project.

Fist and foremost the traffic will be absolutely unmanageable. Highway 65 is a mess on a good day, and having such a project built off of Blue Oaks would exacerbate an already bad situation. Between Whitney High School and the new high school being built there is a large number of teen drivers. By adding to the congestion it will definitely make a long drive extremely longer. As a mom who works full time the hours that I will spend stuck in traffic will be most painful to my family. Added traffic will put yet another obstacle in the way of the communities emergency services. Services that will be greatly needed with all of the new teen drivers from the high schools and it will slow down the transportation of patience to the two major hospitals in the area. While the junction of hwy 80 and 65 have been widened for better flow the rest of 65 has not had the same accommodations made. Before anymore development is made in area the roads should be addressed.

Another concern I have is the fact that Sprouts is lined up to build another store in the proposed development. As a grocery worker in the area this is of great concern. By allowing another non union retailer to open their doors in the area we are lowering the standards that have been set for our community. Sprout who is essentially the Walmart of produce, takes away from businesses like Raley's, and Safeway. Retailers who not only pay their employees well but also provide medical, dental and vision benefits to their employees. Sprouts does not compensate their employees as they should and are below the standard that people like me have pushed so hard to reach. Sprouts does not adequately provide for their now "essentia." workers. By allowing this subpar employer to develop a new site it will put a strain on the ability to negotiate our contracts. Please consider that we are out here serving our community, even when it puts our health and our families at risk. Are we essential or expendable? By putting our lively hood at risk it tells us we and our families are not valued, instead we are only important when a pandemic is sweeping the nation.

When a new Sprouts moves in it impacts the sales of the surrounding retailers big and small, which in turn can take good jobs away from good people. A store like Sprouts can have a detrimental effect on small local businesses. With COVID-19 still impacting small businesses, do we really need to give them unfair competition? Many small businesses are already on the brink of disappearing.

I know that I am only one voice but I do speak for many. Obviously you will not read this letter and suddenly decide to decline the project. All I am asking is to consider the implications of this new development and insist on a full and comprehensive EIR. Maybe even ask the land developer to look into and explore other alternatives for the land in question.

Joan Burgdorf
(916)390-3186

Bitter, Greg

From: Elissa Hardy <ehardy@ufcw8.org>
Sent: Wednesday, May 13, 2020 4:44 PM
To: Public Comment
Subject: Proposed Sprouts Mkt

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

Planning Commission,

The proposed plaza at Blue Oaks will negatively impact traffic, emergency response times, existing UNION jobs and small businesses and air quality. I live off of Baseline on Oakborough Ave and it is extremely difficult to get across Baseline to go East and almost impossible during commute times. We want to reasonably require that a full and comprehensive EIR be conducted to ensure the public health and safety of people who live and work near the proposed site who may be negatively impacted by the project. As part of a full EIR, the Commission should also instruct the developer to consider alternative uses for the site that would have less of a negative impact on residents as well as detailed mitigation measures to offset any impacts to traffic and more should the developers not be willing to consider relocation the project to another site.

Thank you!

Elissa Hardy
536 Oakborough Ave.
Roseville, CA. 95747
(916)216-8196

Elissa Hardy
UFCW 8-Golden State
Field Support Representative
(916)782-0256

Bitter, Greg

From: Loren Cook <loren_cook@surewest.net>
Sent: Thursday, May 14, 2020 11:38 AM
To: Planning Commission
Cc: Bryan Ludwig; Bitter, Greg; Shallow, Kinarik
Subject: 6.3. WRSP PCL-31 – The Plaza at Blue Oaks, 1950 Blue Oaks Bl, File # PL17-0368

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

Commissioners,

I just want to go on the record that the developer did send representatives who presented at our neighbor meeting on February 11th, 2020.

Attendees were from Fiddymment Farm, Westpark, and Blue Oaks neighborhoods. As well the meeting was open to the public.

There was no opposition to the project and the neighborhoods welcome the commercial development.

Here is an excerpt from the meeting minutes (they can be found on Fiddymmentfarm.org website).

"Guest Speaker #1: (7:07 PM)

The Plaza at Blue Oaks--Fiddymment Road). Project Managers Joe Ziwitzki and Jason Gallali, and Kinnie Shallow from City of Roseville Planning gave updates on the commercial property at the NE corner of Fiddymment Road and Blue Oaks Blvd.

- They hope to break ground this year and open stores in the spring of 2022. This will not be a 24-hour facility. Per City regulations, services and deliveries are restricted to 7AM to 10PM. Screens will be provided to block back of delivery area from public, and they are keeping as many trees on the site as the City allows.
- They said the stores weren't locked in yet so they couldn't confirm any names yet, but they indicated expected potential "Pad" features in two phases, including: major grocery; dry cleaners, hair salon, coffee/restaurants; bank; patio seating on corner spot; Day Care; gas station/car wash (linked with grocery); dental office, pet supply store, and possible postal store site.
- The developers said that the restaurants are expected to be QSR (Quick Service Restaurants) in future, even current notable full-serve restaurants are changing over to QSR due to rising staffing costs.
- Developers will comply with City building restrictions, including measures to keep dust down. To a question about 'activities areas' like a trampoline space, the developers indicated those types of facilities are expensive to build and maintain and probably not expected here."

So, once again let me state the neighborhoods welcome this commercial development.

Thank you.

Loren Cook
President
Fiddymment Farm Neighborhood Association

Bitter, Greg

From: Robert Bone <bob@robertbonelaw.com>
Sent: Thursday, May 14, 2020 2:50 PM
To: Public Comment
Subject: WRSP PCL F-31 – The Plaza at Blue Oaks; File # PL17-0368

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

Dear Sir or Madam:

Our office recently provided comments to you, dated as of May 6, 2020, from an unincorporated association of Roseville residents ("Association"), on the pending permit approvals for the Plaza at Blue Oaks. The project, located at 1950 Blue Oaks Boulevard, in the City of Roseville, Placer County, CA (APN 017-117-093-000) is a proposed retail center consisting of an approximately 35,000 square-foot anchor grocery store, a 12-pump gas station with an approximately 3,500 square-foot convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet (the "Project"). The Project approvals include a Design Review Permit to review the site design and proposed buildings, a Tree Permit to remove several native oak trees on the westerly portion of the site, and a Tentative Subdivision Map to subdivide the parcel into eight (8) lots (the "Approvals").

Our previous comments detailed our clients' concerns regarding the Environmental Effects that will be caused by the Project. Please consider the following additional comments on the Project Approvals:

The Project Approvals do not conform to the Roseville General Plan, the City's Bicycle Plan, or the community's Pedestrian Plan, each of which has been carefully crafted and amended to flow together to create an aesthetically pleasing and accessible community for all Roseville residents. The Project does not support these various plans as it is currently configured in that these various development guidelines state that commercial buildings should be arranged to promote bicycle, transit and pedestrian modes. The layout of the Project does not adhere to these principles.

The Trees Should be Landscaped Into the Project, Rather Than Destroyed

As a threshold matter, the Project Approvals contemplate the removal of precious, irreplaceable oak trees. Our community needs to protect our existing trees and native foliage. Rather than being destroyed, the trees should be incorporated into the Project landscape and the structures built around them. This should not be difficult as the trees are concentrated in one area of the property.

The Roseville General Plan Contains Bicycle and Pedestrian Use Goals for Developments That are Not Supported by the Project

Roseville has several community plans that contain circulation elements that are collectively designed to create a bicycle and pedestrian-friendly community. For example, the Circulation Element of the Roseville General Plan includes Goals, Policies and Implementation Measures that guide the Bicycle Master Plan and the development of Bikeways and Trails. Likewise, the 2007 Bicycle Master Plan Update includes recommended

modifications to the General Plan Circulation Element to reflect recommended changes to policies, programs and development standards to increase these "walkability" and "bikability" goals.

The overarching bikeway goals of the General Plan, as amended, include:

Goal 1: Increase the percentage of all trips made by bicyclists in Roseville.

Goal 2: Establish and maintain a safe, comprehensive, and integrated bikeway and trail system that encourages the use of bikes and walking for commuting, recreation and other trips.

Goal 3: Establish education, encouragement and enforcement programs that increase bicyclist and motorist awareness of the rights and responsibilities of bicyclists in order to create a climate of acceptance for bike riding.

Goal 4: Obtain the Bicycle Friendly Community Designation from the League of American Bicyclists.

Other elements of the General Plan also include goals and policies that address bikeway development. These include the Open Space and Conservation Element, and the Recreation element. Importantly, both Blue Oaks Boulevard and Fiddymont Road (the majors streets flanking the Project) are designated for Class II Bike Lanes. Developments located on these streets should be designed with cyclists in mind especially when it comes to the layout and orientation of the development. Herein lies the problem with the current configuration of the Project. It does not comply with the aesthetic plans for the local community.

The Project Does Not Comply With the Roseville Site Design Guidelines

Site planning is intended to respect and enhance the natural environment, to connect a project to its surroundings, to promote "walkability" of developments, and to ensure effective site access and traffic circulation within and around a project. This includes adding green design features, and providing for essential services and storage.

In order to support these goals, the Roseville Site Planning and Building Siting Design Guidelines provide:

CC-1 Buildings should be arranged to define, connect, and activate pedestrian edges and public spaces.

CC-2 Buildings should be arranged to provide convenient access to transit stops.

CC-3 The relationship and orientation of buildings to arterial and other prominent roadways should be considered to enhance street frontage.

The Site Plan for the Project shows that the buildings are oriented toward the inside of the Project, leaving the back of the buildings facing the street. Firstly, the bicycle lanes near the Project must be properly striped and provision must be made for bikes and pedestrians to safely access the Project, and traverse around it. Secondly, as the Project is currently configured, in order for bicyclists and pedestrians to access the retail stores inside the Project, they must traverse a driveway that is intended for vehicle traffic, and then ride or walk through the parking lot to access the stores. This creates a potentially dangerous situation.

The Project and the Approvals must be evaluated in light of Roseville's existing General Plan, Bicycle Plan and Pedestrian Plan to ensure that the Project meets the community's development goals. The Approvals must be set aside and the above-referenced impacts on the environment must be fully and appropriately studied before any permits may be issued.

Robert M. Bone, Esq.

Law Office of Robert M. Bone
645 Fourth Street, Suite 205
Santa Rosa, CA 95404
P: 707.525.8999
F: 707.542.4752

Please consider the environment before printing this e-mail

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Bitter, Greg

From: Luke Saxelby <luke@saxnoise.com>
Sent: Thursday, May 14, 2020 6:16 PM
To: Public Comment
Subject: WRSP PCL-31 – The Plaza at Blue Oaks, 1950 Blue Oaks Bl, File # PL17-0368

EXTERNAL: This email originated from outside of the organization. Do not click on any links or open attachments unless you recognize the sender and know the content is safe.

Good Evening,

I would like to submit these written comments into the public record regarding the Plaza at Blue Oaks for tonight's planning commission hearing:

"Good evening commissioners, my name is Luke Saxelby, I reside at 1204 Vista Verde Drive, approximately ½ mile north of the proposed project. My family and I would like to express our support for the proposed project. We are pleased to see continued commercial development in West Roseville and believe this project is well designed and would provide us with a local shopping destination in close proximity to where we live. Currently, the majority of our shopping requires us to travel down Blue Oaks and cross Highway 65, or down Foothills Blvd to reach our favorite grocery stores, retail centers, and restaurants. While I have not been engaged by any party to review this project, I am a professional acoustic and noise control engineer and I run the consulting firm of Saxelby Acoustics which is based in Roseville. I have reviewed the project noise study prepared by Bollard Acoustical Consultants and I believe the study to be adequate and meeting the requirements of the City and CEQA, and would not have an adverse impact on existing or future residential uses in the area. I encourage the council to approve the project. Thank you for your consideration of my comments."

Regards,

---Luke



Luke Saxelby

Principal Consultant, Saxelby Acoustics LLC

(916) 760-8821 | Luke@SaxNoise.com

www.SaxNoise.com

915 Highland Pointe Drive, Suite 250 | Roseville, CA 95678





PLANNING DIVISION
311 Vernon Street, Roseville, CA 95678 (916) 774-5276

APPEAL FORM

Name: Robert Bone, Esq. for Appellants **Date:** May 26, 2020

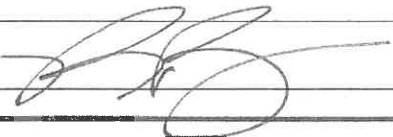
Address: 645 FOURTH STREET, SUITE 205 **City:** SANTA ROSA, CA **Zip Code:** 95404

Phone Numbers: (work/day) 707/525-8999 **(home/evening)** 707/525-8999

(cell) 707/525-8999 **(email)** bob@robertbonelaw.com

Please describe below the action for which this appeal is being filed. (You may attach a separate letter if enough space is not provided.)

Please see the attached appeal letter from Law Office of Robert Bone.

Signed:  **Date:** May 26, 2020

FOR OFFICE USE ONLY.

(Date Stamp Below)

Received by: _____

Project Being Appealed: _____

File Number: _____

Approving Body: _____ Approval Date: _____

BY FAX

Law Office of
ROBERT M. BONE

May 26, 2020

VIA EMAIL ONLY

CityCouncil@roseville.ca.us

City of Roseville City Council
311 Vernon Street
Roseville, California 95678

RE: Appeal of Approval of Mitigated Negative Declaration for
WRSP PCL F-31 – The Plaza at Blue Oaks; File # PL17-0368

Dear Honorable Councilmember:

Our firm writes on behalf of an unincorporated association of Roseville community residents (the “Association”) to appeal the decision by the Roseville Planning Commission (“Planning Commission”) on the mitigated negative declaration finding for the Project defined below.

The proposed Project, located at 1950 Blue Oaks Boulevard, in the City of Roseville, Placer County, CA (APN 017-117-093-000) is a proposed retail center consisting of an approximately 35,000 square-foot anchor grocery store, a 12-pump gas station with an approximately 3,500 square-foot convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet (the “Project”). The Project approvals include a Design Review Permit to review the site design and proposed buildings, a Tree Permit to remove several native oak trees on the westerly portion of the site, and a Tentative Subdivision Map to subdivide the parcel into eight (8) lots (the “Approvals”). No building is being proposed on Lot 2 at this time, which will be located on the northeastern corner of the site and will consist of approximately 1.3 acres.

The Association includes individuals that may be adversely affected by the potential traffic, air quality, ground water quality, soil quality, noise, public health, and other environmental impacts caused by the Project. The Association includes individuals who live and work in Roseville and their families. Because they are local residents, the individual members of the Association would be directly affected by the traffic, air quality, ground water quality, noise, public health and other environmental issues created by the Project. Individual members may also work on the Project itself. As such, they would be first in line to be exposed to any health and safety hazards that exist on site.

BY FAX

The Project Approvals do not conform to the Roseville General Plan, the City's Bicycle Plan, or the community's Pedestrian Plan, each of which has been carefully crafted and amended to flow together to create an aesthetically pleasing and accessible community for all Roseville residents. The Project does not support these various plans as it is currently configured in that these various development guidelines state that commercial buildings should be arranged to promote bicycle, transit and pedestrian modes. The layout of the Project does not adhere to these principles.

The Trees Should be Landscaped Into the Project, Rather Than Destroyed

As a threshold matter, the Project Approvals contemplate the removal of precious, irreplaceable oak trees. Our community needs to protect our existing trees and native foliage. Rather than being destroyed, the trees should be incorporated into the Project landscape and the structures built around them. This should not be difficult as the trees are concentrated in one area of the property.

The Roseville General Plan Contains Bicycle and Pedestrian Use Goals for Developments That are Not Supported by the Project

Roseville has several community plans that contain circulation elements that are collectively designed to create a bicycle and pedestrian-friendly community. For example, the Circulation Element of the Roseville General Plan includes Goals, Policies and Implementation Measures that guide the Bicycle Master Plan and the development of Bikeways and Trails. Likewise, the 2007 Bicycle Master Plan Update includes recommended modifications to the General Plan Circulation Element to reflect recommended changes to policies, programs and development standards to increase these "walkability" and "bikability" goals.

The overarching bikeway goals of the General Plan, as amended, include:

Goal 1: Increase the percentage of all trips made by bicyclists in Roseville.

Goal 2: Establish and maintain a safe, comprehensive, and integrated bikeway and trail system that encourages the use of bikes and walking for commuting, recreation and other trips.

Goal 3: Establish education, encouragement and enforcement programs that increase bicyclist and motorist awareness of the rights and responsibilities of bicyclists in order to create a climate of acceptance for bike riding.

Goal 4: Obtain the Bicycle Friendly Community Designation from the League of American Bicyclists.

Other elements of the General Plan also include goals and policies that address bikeway development. These include the Open Space and Conservation Element, and the Recreation element. Importantly, both Blue Oaks Boulevard and Fiddymment Road (the majors streets flanking the Project) are designated for Class II Bike Lanes. Developments located on these streets should be designed with cyclists in mind especially when it comes to the layout and orientation of the development. Herein lies the problem with the current configuration of the Project. It does not comply with the aesthetic plans for the local community.

The Project Does Not Comply With the Roseville Site Design Guidelines

Site planning is intended to respect and enhance the natural environment, to connect a project to its surroundings, to promote "walkability" of developments, and to ensure effective site access and traffic circulation within and around a project. This includes adding green design features, and providing for essential services and storage.

In order to support these goals, the Roseville Site Planning and Building Siting Design Guidelines provide:

CC-1 Buildings should be arranged to define, connect, and activate pedestrian edges and public spaces.

CC-2 Buildings should be arranged to provide convenient access to transit stops.

CC-3 The relationship and orientation of buildings to arterial and other prominent roadways should be considered to enhance street frontage.

The Site Plan for the Project shows that the buildings are oriented toward the inside of the Project, leaving the back of the buildings facing the street. Firstly, the bicycle lanes near the Project must be properly striped and provision must be made for bikes and pedestrians to safely access the Project, and traverse around it. Secondly, as the Project is currently configured, in order for bicyclists and pedestrians to access the retail stores inside the Project, they must traverse a driveway that is intended for vehicle traffic, and then ride or walk through the parking lot to access the stores. This creates a potentially dangerous situation.

The Project and the Approvals must be evaluated in light of Roseville's existing General Plan, Bicycle Plan and Pedestrian Plan to ensure that the Project meets the community's development goals. The Approvals must be set aside and the above-referenced impacts on the environment must be fully and appropriately studied before any permits may be issued.

The Project Approvals Fail to Adequately Inform the Public About Environmental Impacts

Based upon our review of the Project Approvals, we feel the Approvals fail to comply with California Environmental Quality Act (“CEQA”) requirements in the following ways. CEQA is designed to inform decisionmakers, and the public about the potential significant environmental effects of a project. CEQA Guidelines §15002(a)(1). CEQA requires that an agency analyze potentially significant environmental impacts in an [environmental impact report (“EIR”)]. Pub. Resources Code §21000; CEQA Guidelines §15002. Specifically, that EIR should result from “extensive research and information gathering,” including consultation with state and federal agencies, local officials, *and the interested public*. (emphasis added.) *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm.* (2001) 91 Cal.App.4th 1344, 1367 (*Berkeley Jets*); *Schaeffer Land Trust v. San Jose City Council* (1989) 215 Cal.App.3d 612, 620.

CEQA also directs public agencies to avoid, or reduce, environmental damage when possible by requiring alternatives, or mitigation measures. CEQA Guidelines §15002(a)(2)-(3); *Berkeley Jets*, supra, 91 Cal.App. 4th at 1354. The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to “identify ways that environmental damage can be avoided or significantly reduced.” CEQA Guidelines §15002(a)(2). If a project has a significant effect on the environment, the agency may approve the project only upon a finding that it has “eliminated or substantially lessened all significant effects on the environment where feasible,” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns” specified in CEQA §21081. CEQA Guidelines §15092(b)(2)(A)-(B).

The IS/MND begins with a Declaration, on page 2, that states:

The Planning Manager has determined that the above project will not have significant effects on the environment and therefore does not require preparation of an Environmental Impact Report. The determination is based on the attached initial study and the following findings [“Findings”]

A. The project will not have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare or threatened species, reduce the number or restrict the range of rare or endangered plants or animals or eliminate important examples of the major periods of California history or prehistory.

B. The project *will not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals. (emphasis added.)*

C. The project *will not have impacts, which are individually limited, but cumulatively considerable. (emphasis added.)*

D. The project *will not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly. (emphasis added.)*

E. No *substantial evidence exists that the project may have a significant effect on the environment. (emphasis added.)*

F. The project incorporates all applicable mitigation measures identified in the attached initial study.

G. This Mitigated Negative Declaration reflects the independent judgment of the lead agency.

Substantial evidence exists to support the assertion that the Findings, noted above, were incorrectly reached. It defies imagination how the construction of a 12-pump gas station, with its attendant underground gasoline storage tanks, a car wash that will undoubtedly wash chemicals into the soil, and potentially into the ground water, and other commercial uses *will not cause any impact* to the environment such that a fulsome environmental review is unnecessary. The planned uses will have considerable cumulative, long-term, adverse impacts on the environment and nearby residents, either directly, or indirectly. Approving the Project without a full environmental review amounts to achieving a short-term goal to the disadvantage of long-term environmental goals.

The initial study/mitigated negative declaration (“IS/MND”) incorporates a checklist of potential environmental impacts. Although the analysis considered various impacts as provided in the checklist, and as required by CEQA, the IS/MND found in the vast majority of the analysis that the Project would have “No Impact,” or a “Less Than Significant Impact” on the environment. Thus, mitigation measures were not adequately considered.

Potential impacts were found in only two cases. In one case, the IS/MND found the Project may create significant impacts on the resources of California Native American tribes. Of greater concern to the Association, however, is the fact that the analysis found noise impacts would occur only during construction of the Project, but dismissed the noise impacts caused by operation of the Project after the construction is completed. This effect was considered to be “Less Than Significant With Mitigation” if such mitigation measures were implemented during construction. Little attention was paid to the fact that the Project will flank two existing residential neighborhoods. The

permanent noise levels that will be generated by a 12-pump gas station, an automatic car wash and convenience store, and 35,000 a foot grocery store, in addition to other anticipated commercial uses, are certain to increase substantially over current ambient noise levels in the neighborhood. This is hardly a “Less Than Significant” impact. This impact, and potential mitigation measures to lessen the impact, warrants further study.

Other than the two instances noted above, the IS/MND noted no significant impacts to the environment caused by the Project. The Association disagrees. The subdivision of a single parcel into 8 parcels and the construction of more than 48,000 square feet of commercial structures in that footprint absolutely creates significant negative impacts on the surrounding residential community. These impacts to the traffic, air quality, ground water quality, soil quality, noise and other aspects of the community must be properly determined and studied.

Air quality issues were not properly considered in the IS/MND. Many of the residents near the Project are older and/or are otherwise considered to be sensitive receptors. The dust, soot, exhaust, fumes and other particulate matter that will necessarily increase due to large construction vehicles, and further due to permanently increased traffic and idling vehicles in the area, will create negative health impacts on residents, who are sensitive receptors, for an unknown period of time. These sensitive receptors may experience prolonged and significant impacts to their health.

The negative health effects on area residents caused by the Project will be exacerbated by the construction of a 12-pump gas station as the site. Not only will this increase poor air quality, ground water quality, and soil contamination during construction, but nearby residents will be permanently negatively impacted by known carcinogens that will be pumped into underground tanks, as well as exhaust and fumes created by cars idling and using the gas station. Additionally, detergents, waxes and other chemicals used by the car wash will be rinsed away, and may flow into the ground, eventually reaching the water table. This will have deleterious effects on the water table and the health of nearby residents. These issues were found to cause either “No Impact,” or “Less Than Significant Impact” in the IS/MND. These deleterious impacts must be properly studied so that their true impacts on nearby residents can be determined and mitigated.

The Project Approvals Fail to Consider Feasible Mitigation Measures That Alleviate Negative Environmental Impacts

The Approvals were granted in error because there are feasible mitigation measures available which would substantially lessen one, or more, of the Project’s significant environmental effects. Pub. Resources Code, § 21002. For example, morning, afternoon and other peak-hour commute times will be permanently greatly increased throughout the area if the Project is developed as currently proposed. The IS/MND failed to propose mitigation measures to alleviate this significant impact.

The Environmental Noise Assessment, included as Attachment 6 to the IS/MND, states, in pertinent part, on Page 6 that the “Noise Element of the City of Roseville General Plan establishes non-transportation noise exposure limits as summarized...in Table 1 (Table IX-3 of the Noise

BY FAX

Roseville City Council
WRSP PCL F-31 – The Plaza at Blue Oaks
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Element). These limits are applicable to non-transportation noise sources (i.e., on-site truck movements, loading docks, and car wash operations) affecting existing noise-sensitive land uses.” The report suggests that a 6-foot sound barrier be constructed and that construction trucks be limited in their hours of operation. The report dubiously suggested this 6-foot sound barrier is enough to mitigate the significant impact the operation of the gas station, the loading dock, the car wash and the other commercial uses will cause to adjacent neighborhoods after construction.

The noise assessment in the IS/MND dismissed operations noise that will be caused by idling vehicles and traffic at the 12-pump gas station and ignores the Project’s other commercial uses. Instead, although the document recognized the fact that the nearest noise-sensitive land uses to the Project site are existing and future residential developments located north, south, and east of the Project site, significant impacts to these receptors was minimized by the report. It was assumed that each of the evaluated noise sources would only operate during limited, mostly daytime, hours. Based on this assumption, Roseville’s daytime and nighttime noise level standards for noise-sensitive residential land were applied to the Project’s noise sources. This represents a serious underestimation of the noise levels to be generated by the commercial uses in this Project.

Due to the fact that the IS/MND wholly dismissed the vast majority of the potential environmental impacts caused by the Project, mitigation measures were inadequately considered or completely ignored. For this reason, the Project Approvals fail to adequately disclose, evaluate, and mitigate the Project’s environmental impacts, resulting in a legally deficient CEQA review. The City Council must order the Planning Commission to conduct an appropriate environmental review that addresses these inadequacies and must circulate the document for public review to consider these critical issues.

The Association has commissioned an environmental report and a traffic report. We will submit it to the City Council in support of our position as soon as they are available. Thank you for your attention to this matter.

Sincerely,



Robert M. Bone, Esq.



Development Services Department
Planning Division
311 Vernon Street
Roseville, California 95678-2649

May 18, 2020

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SUBJECT: WRSP PCL-31 – The Plaza at Blue Oaks
File # PL17-0368
Citywide Job # 180129

On MAY 14, 2020, the *Planning Commission* **ADOPTED THE PLAZA AT BLUE OAKS INITIAL STUDY/MITIGATED NEGATIVE DECLARATION** and the **MITIGATION MONITORING AND REPORTING PROGRAM** and **APPROVED** the **DESIGN REVIEW PERMIT** to allow the construction of an 82,100-square-foot shopping center consisting of a 35,000-square-foot anchor grocery store, a 12-pump gas station with a 3,500-square-foot-convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet, a **TENTATIVE SUBDIVISION MAP** to subdivide the 13.35-acre parcel into eight (8) lots, and, a **TREE PERMIT** to remove several native oak trees on the westerly portion of the site located at **1950 BLUE OAKS BL.**

EXPIRATION DATE

You have two (2) years from the date of the Planning Commission's approval in which to effectuate the permit, or else the **DESIGN REVIEW PERMIT**, **TENTATIVE SUBDIVISION MAP**, and **TREE PERMIT** approval becomes null and void.

The expiration date of this request is **MAY 14, 2022**.

EXTENSION OF PERMIT

You may request that a permit be extended for a period up to a maximum of one (1) year. An application for an extension shall be submitted to the Planning Division prior to the expiration date indicated above. No notice will be sent to you prior to the date of permit expiration.

YOU WILL BE RESPONSIBLE FOR REQUESTING ANY EXTENSION.

FEE NOTIFICATION

Per Government Code Section 66000, et seq, this notice shall serve as notification that the 90 day appeal period has begun in which the applicant may protest the imposition of fees, dedications, reservations, or other exactions imposed under the provisions of Government Code Section 66020 to the City Council. The appeal shall be filed in writing or on a form provided by the City stating the reasons for the appeal as provided for in Government Code Section 66020. **The appeal shall be filed with the City Clerk.**

APPEAL PROCEDURE

The decision of the Planning Commission is final unless appealed. This decision must be appealed to the **City Council** by filing a written appeal and paying the required fee **within ten (10) calendar days of May 14, 2020. The appeal shall be filed with the City Clerk.**

You may be precluded from filing a lawsuit to challenge this decision unless you use this opportunity for administrative appeal and raise any issues you believe to be wrongly decided.

Persons wishing to commence a court case challenging this decision must do so within ninety (90) days of the final decision (after all administrative appeals are exhausted) pursuant to Code of Civil Procedures Section 1094.6. (See Roseville City Council Resolution No. 82-81)

CONDITIONS OF APPROVAL FOR DESIGN REVIEW PERMIT

1. This design review permit approval shall be effectuated within a period of two (2) years from **May 14, 2020** and if not effectuated shall expire on **May 14, 2022**. Prior to said expiration date, the applicant may apply for an extension of time, provided this approval does not extend the expiration beyond **May 14, 2023**. (Planning)
2. The project is approved as shown in Exhibits B—K, and as conditioned or modified below. (Planning)
3. The project shall comply with all required environmental mitigation identified in the Plaza at Blue Oaks Mitigated Negative Declaration. (Planning)
4. The applicant shall submit and gain approval of a Design Review Permit for Pad 3 prior to building permit issuance. (Planning)
5. The applicant shall submit and gain approval of a Design Review Permit for the future development of Phase 2 (Lot 2). (Planning)
6. The project shall be addressed as 1950 Blue Oaks Blvd. The lots and the buildings thereon shall be addressed as follows: Lot 1 (along with Major 1) shall be addressed as 1970 Blue Oaks Blvd, Lot 2 shall be addressed as 2081 Oak Meadow Dr, Lot 3 (along with the building on PAD 3) shall be addressed as 1930 Blue Oaks Blvd, Lot 4 (along with Shops 2) shall be addressed 1960 Blue Oaks Blvd, Lot 5 (along with the building on PAD 2) shall be addressed 1940 Blue Oaks Blvd, Lot 6 (along with the building on PAD 1) shall be addressed 1980 Blue Oaks Blvd, Lot 7 (along with the building on PAD 6) shall be addressed 2000 Blue Oaks Blvd and the building on PAD 5 shall be addressed

2010 Blue Oaks Blvd, Lot 8 (along with Shops 1) shall be addressed 1990 Blue Oaks Blvd and the building on PAD 4 shall be addressed 2020 Blue Oaks Blvd. All projects with multi-tenants or buildings must submit a site plan with building footprint(s) and suite numbers to the Development Services Department (Business Services – Addressing) for review and approval. The City Addressing Guidelines should be used for reference when assigning suite numbers. (Business Services)

7. The applicant shall pay City's actual costs for providing plan check, mapping, GIS, and inspection services. This may be a combination of staff costs and direct billing for contract professional services. Project billing may occur up to two (2) months after the end of warranty or the Notice of Termination date for the SWPPP, whichever occurs later. (Engineering, Environmental Utilities, Electric, Finance)
8. The design and construction of all improvements shall conform to the Design and Construction Standards of the City of Roseville, or as modified by these conditions of approval, or as directed by the City Engineer. (Engineering)
9. The applicant shall not commence with any on-site improvements or improvements within the right-of-way until such time as grading and/or improvement plans are approved and grading and/or encroachment permits are issued by the Department of Development Service Engineering Division (Engineering)
10. The approval of this project does not constitute approval of proposed improvements as to size, design, materials, or location, unless specifically addressed in these conditions of approval. (Engineering)

PRIOR TO ISSUANCE OF BUILDING PERMITS:

11. Parking stalls shall meet, or exceed, the following minimum standards:
 - a. All parking stalls shall be double-striped. Parking stalls adjacent to sidewalks, landscaped areas or light fixtures, and all Accessible stalls shall abut a 6" raised curb or concrete bumper. (Planning)
 - b. Standard -- 9 feet x 18 feet; Compact--9 feet x 16 feet; Accessible--14 feet x 18 feet (a 9 foot wide parking area plus a 5 foot wide loading area) and a minimum of one (1) parking space shall be Accessible van accessible--17 feet x 18 feet (9 foot wide parking area plus an 8 foot wide loading area). (Planning)
 - c. An 'exterior routes of travel' site accessibility plan incorporating slope, cross-slope, width, pedestrian ramps, curb ramps, handrails, signage, detectable warnings or speed limit signs or equivalent means shall comprise part of the site improvement plans submitted to City for review, prior to building plan check approvals. This site accessibility plan shall also include:

- i) Accessible parking stalls shall be dispersed and located closest to accessible entrances. The total number of accessible parking spaces shall be established by Table 11B-208.2 of the CBC.
 - ii) Accessible Parking spaces and crosswalks shall be signed, marked and maintained as required by Chapter 11B of the CBC.
 - iii) Accessible parking and exterior route of travel shall comply with CBC, Sections 11B-206 and 11B-208. (Building)
- 12. Signs and/or striping shall be provided on-site as required by the Planning Department to control on-site traffic movements. Parking lot striping and signage shall be maintained in a visible and legible manner. (Planning)
- 13. The plans submitted to the Building Department for permits shall indicate all approved revisions/alterations as approved by the Commission including all conditions of approval. (Planning)
- 14. The project Landscape Plans shall comply with the following:
 - a. The Landscape Plan shall indicate the location of, and be designed to avoid conflicts with, all pole-mounted light fixtures and utility equipment including (but not limited to) electric transformers, switchgear, and overhead lines, backflow preventors, fire department connections, and public water, sewer, and storm drain facilities. (Planning, Fire, EUD, Electric, Public Works)
 - b. The tree plantings in the parking lot shall be designed to provide a minimum of 50% shade coverage after 15 years. (Planning)
 - c. At a minimum, landscaped areas not covered with live material shall be covered with a rock, 3" bark (no shredded bark) or 3" mulch covering. (Planning)
 - d. The landscape plan shall comply with the Landscape Guidelines for West Roseville Specific Plan and the City of Roseville Water Efficient Landscape Ordinance. (Planning)
 - e. All landscaping in areas containing electrical service equipment shall conform with the Electric Department's Landscape Requirements and Work Clearances as outlined in Section 10.00 of the Departments "Specification for Commercial Construction." (Electric)
- 15. Any roof-mounted equipment and satellite dishes proposed shall be shown on the building plans. The equipment shall be fully screened from public streets and the surrounding properties. (Planning)
- 16. At the time of building permit application and plan submittal, the project applicant shall submit a proposed plan which shows the suite addressing plan for individual tenant spaces within the building. The Chief Building Official, or the designate, shall approve said plan prior to building permit approval. (Building)

17. A separate Architectural Site Accessibility Plan which details the project's site accessibility information as required by California Title 24, Part 2 shall be submitted as part of the project Building Permit Plans. (Building)
18. For Multiple Building Complexes: As part of the required Architectural Site Accessibility Plan, the developer shall delineate the extent of the site accessibility improvements being installed as part of the initial improvements for the project, and those that are planned to be developed as part of subsequent phases (i.e. around future pad buildings). (Building)
19. Building permit plans shall comply with all applicable code requirements (California Building Code – CBC – based on the International Building Code, California Green Building Standards Code-CGBSC, California Mechanical Code – CMC – based on the Uniform Mechanical Code, California Plumbing Code – CPC – based on the Uniform Plumbing Code, California Fire Code – CFC – based on the International Fire Code – with City of Roseville Amendments – RFC, California Electrical Code – CEC – based on the National Electrical Code, and California Energy Standards – CEC T-24 Part 6), California Title 24 and the American with Disabilities Act - ADA requirements, and all State and Federally mandated requirements in effect at the time of submittal for building permits (contact the Building Division for applicable Code editions). (Building)
20. Parapet/cornice construction shall support the weight of a ladder leaning against the parapet as well as a 330-pound vertical load applied to the **leading edge** of the horizontal projection of the cornice (a 250-pound firefighter carrying 80 pounds of equipment stepping off of a ladder onto the top of the cornice). (CFC Chapter 1) (Building)
21. For restaurants, or other food services, contact the Placer County Health Department. (Building)
22. For restaurants, or other food services. The developer shall obtain all required approvals and permits from the Placer County Health Department and the City of Roseville Industrial Waste Division. (Building, Environmental Utilities)
23. Maintenance of copy of building plans: Health and Safety Code section 19850 requires the building department of every city or county to maintain an official copy of the building plans for the life of the building. As such, each individual building shall be submitted as a separate submittal package. Building plan review, permit issuance and archiving is based on each individual building address. (Building)
24. The Improvement Plans shall include a complete set of Landscape Plans. The Landscape Plans shall be approved with the Improvement Plans. (Planning, Engineering, Fire, Environmental Utilities, Electric)
25. A note shall be added to the grading plans that states:

*“Prior to the commencement of grading operations, the contractor shall identify the site where the **excess/borrow** earthen material shall be imported/deposited. If the **borrow/deposit** site is within the City of Roseville, the contractor shall produce a report issued by a geotechnical engineer to verify*

that the exported materials are suitable for the intended fill, and shall show proof of all approved grading plans. Haul routes to be used shall be specified.” (Engineering)

26. Blue Oaks Boulevard shall be improved with two A-7 driveways. The western driveway shall be a minimum of 30-foot in width and the eastern driveway shall be a minimum of 35-foot in width. Both driveways shall be restricted to right turn ingress and egress only. An Auxiliary lane with a 90-foot entry taper shall be constructed along the frontage to provide right turn access to the driveway and will terminate into the existing right turn lane at Fiddymment Road. All frontage pedestrian paths shall be a minimum of 8-foot in width. (Engineering)
27. Fiddymment Road shall be improved with a 35-foot wide A-7 driveway. This driveway shall be restricted to right turn ingress and egress only. All frontage pedestrian paths shall be a minimum of 8-foot in width. (Engineering)
28. Harvey Way shall be improved with two A-7 driveways. The western driveway shall be a minimum of 35-foot in width and restricted to right turn ingress and egress access only. The eastern driveway shall be a minimum of 30-foot in width. All frontage pedestrian paths shall be a minimum of 4-foot in width. (Engineering)
29. Oak Meadow Drive shall be improved with two 35-foot wide A-7 driveways. All frontage pedestrian paths shall be a minimum of 4-foot in width. (Engineering)
30. The Developer shall provide striping and signage to prevent the blockage at the first onsite intersections located off of Fiddymment Road driveway and the western driveway on Harvey Way. (Engineering)
31. The Developer shall enter into a construction fee agreement based upon a construction cost of \$10,000 per shelter for future construction of the Bus Shelter on the NE corner of Fiddymment Road and Blue Oak Blvd. (shelter number 176) (Engineering, Alternative Transportation)
32. The project shall include a 20-space park-and-ride per the Specific Plan requirements and in proximity to the transit shelter on Fiddymment Road. The park-and-ride lot shall include accessible parking as required by the building code, a path of travel from the accessible parking to the transit shelter on Fiddymment Road, signs identifying the park-and-ride spaces and their availability to the public. The park-and-ride area shall include appropriate lighting and security measures. The landowner shall be responsible for maintenance of the park-and-ride lot and all its appurtenances. (Engineering, Alternative Transportation)
33. Bike parking and clean air vehicle spaces shall be provided per the California Green Building Standards. Bike rack/locker design and location shall be approved by Alternative Transportation. Parking stall markings are to be marked as “Carpool/Clean Air/EV” instead of using the words “Vanpool”. The “clean air” spaces should be distributed throughout the site, including near the major buildings. The building permit plans shall show internal bike parking. (Alternative Transportation, Building)

34. The applicant/developer shall prepare a Transportation Systems Management (TSM) plan for *The Plaza at Blue Oaks* to be reviewed and approved by the Transportation Commission (Alternative Transportation)
35. The applicant shall dedicate all necessary rights-of-way or Public Utility Easement for the widening of any streets or transfer of public utilities across and over any portion of the property as required with this entitlement. A separate document shall be drafted for approval and acceptance by the City of Roseville, and recorded at the County Records Office. (Engineering)
36. All storm drainage, including roof drains, shall be collected on site and treated with Best Management Practices (BMP's) per the City's Stormwater Quality Design Manual. All storm water shall be routed to the nearest existing storm drain system or natural drainage facility. Drain outfalls shall extend down to the receiving water and shall be constructed with adequate velocity attenuation devices. The grading/improvement plans for the site shall be accompanied with a shed map that defines that area tributary to this site and all drainage facilities shall be designed to accommodate the tributary flow. The storm drain system and proposed BMP's shall be privately owned and maintained by the property owner. Prior to the issuance of any permits, the owner shall provide a plan for the maintenance of the proposed BMP's. (Engineering)
37. Prior to the approval of the Improvement Plans, the project proponent shall provide proof of preparation and submittal of a Storm Water Pollution Prevention Plan (SWPPP) to the Regional Water Quality Control Board (RWQCB). Proof shall be in the form of the Waste Discharge Identification Number (WDID#), provided to the applicant from RWQCB, placed on the coversheet of the improvement plans. Upon approval of the improvement plans, a copy of the SWPPP shall be required onsite and available for viewing by City inspection staff upon request. (Engineering)
38. The developer shall be responsible for any necessary relocation of signal interconnect cables that may require re-location as a result of the construction of turn lanes and/or driveways. (Engineering)
39. To ensure that the design for any necessary widening, construction, or modifications of Public Streets does not conflict with existing dry utilities generally located behind the curb and gutter, and prior to the submittal of design drawings for those frontage improvements, the project proponent shall have the existing dry utilities pot holed for verification of location and depth. (Engineering)
40. Sight distances for all driveways shall be clearly shown on the improvement plans to verify that minimum standards are achieved. It will be the responsibility of the project proponent to provide appropriate landscaping and improvement plans, and to relocate and/or modify existing facilities as needed to meet these design objectives. (Engineering)
41. The applicant shall remove and reconstruct any existing damaged curb, gutter, and sidewalk along the property frontage. During plan check of the improvement plans and/or during inspection, Public Works will designate the exact areas to be reconstructed. Any existing public facilities damaged during the course of construction shall be repaired by the property owner and at the property owner's expense, to the satisfaction of the City. (Engineering)

42. Prior to the approval of the improvement plans, it will be the project proponent's responsibility to pay the standard City Trench Cut Recovery Fee for any cuts within the City streets that are required for the installation of underground utilities. (Engineering)
43. Prior to the issuance of building permits, the property owner shall pay into the following fee programs: Citywide Drainage Fee, Citywide Traffic Mitigation Fee (TMF), Highway 65 Joint Partners Association (JPA), South Placer Regional Transportation Authority (SPRTA), and City/County Fee. (Engineering)
44. Upon issuance of each building permit, the property owner shall pay the WRSP Transit Shuttle Service Fee per Development Agreement Section 3.15.14. (Alternative Transportation)
45. The applicant/developer shall prepare a Transportation Systems Management (TSM) Plan for the Plaza at Blue Oaks to be reviewed and approved by the Transportation Commission. (Public Works)
46. Prior to the issuance of a grading permit or approval of Improvement Plans, the grading plans shall clearly identify all existing water, sewer and recycled water utilities within the boundaries of the project (including adjoining public right of way). Existing utilities shall be identified in plan view and in profile view where grading activities will modify existing site elevations over top of or within 15 feet of the utility. Any utilities that could potentially be impacted by the project shall be clearly identified along with the proposed protection measures. The developer shall be responsible for taking measures and incurring costs associated with protecting the existing water, sewer and recycled water utilities to the satisfaction of the Environmental Utilities Director. (Environmental Utilities)
47. The applicant shall pay all applicable water and sewer fees. (Environmental Utilities)
48. Water and sewer infrastructure shall be designed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards and shall include:
 - a. Utilities or permanent structures shall not be located within the area which would be disturbed by an open trench needed to expose sewer trunk mains deeper than 12' unless approved by Environmental Utilities in these conditions. The area needed to construct the trench is a sloped cone above the sewer main. The cone shall have 1:1 side slopes.
 - b. Water, sewer and recycled mains shall not exceed a depth of 12' below finished grade, unless authorized in these conditions of approval.
 - c. All sewer manholes shall have all-weather 10-ton vehicle access unless authorized by these conditions of approval. (Environmental Utilities)
49. Recycled water infrastructure shall be designed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards. The applicant shall pay all applicable recycled water fees. Easements shall be provided as necessary for recycled water infrastructure. (Environmental Utilities)
50. Trash enclosures, recycling areas, and enclosure approaches shall be designed to current Refuse Division specifications, the materials and colors shall match the building, and the location of such

facilities shall be reviewed and approved by the Refuse Division, Planning and the Fire Department. The enclosure must have inside dimensions of 12 feet wide and 9 feet deep and be built to the specifications of the Solid Waste Department's Enclosure Description. (Refuse, Planning, Fire)

51. Access to trash enclosures shall have an inside turning radius of 25 feet and an outside turning radius of 45 feet must be maintained to allow the refuse truck access to and from the enclosure. Enclosures must have a clear approach of 65 feet in front of the enclosure to allow servicing bins. (Refuse)
52. A trash enclosure and recycling enclosure is required for each building and each tenant, otherwise, the building owner is responsible for the trash service. (Refuse)
53. The design and installation of all fire protection equipment shall conform to the California Fire Code and the amendments adopted by the City of Roseville, along with all standards and policies implemented by the Roseville Fire Department. (Fire)
54. The applicable codes and standards adopted by the City shall be enforced at the time construction plans have been submitted to the City for permitting (Fire)
55. The fire flow required, at a 50% reduction due to the buildings being sprinklered, will be based on the largest single structure in accordance with the California Fire Code at the time detail plans are submitted to the City of Roseville for review. The maximum fire flow will not exceed 4,000 gpm based on the Appendix III-AA of the California Fire Code. (Fire)
56. The fire department access road shall meet the City's requirements for width and turning radii of 30 and 50 as noted on the fire department standards for access. This shall be enforced at the time plan are submitted for review, Additional information can be found on the City's web site www.roseville.ca.us or contact Jason Rizzi, Fire Division Chief, at 916-774-5802 or jrizzi@roseville.ca.us with the Fire and Life Safety Division for information. (Fire)
57. If high-pile storage is involved as part of the construction of this occupancy, a separate fire permit shall be obtain from the fire department in accordance with the California Fire Code. Plans shall be submitted for approval prior to installation. (Fire)
58. Automatic fire extinguishing system risers, fire alarm system panels and digital alarm communicator system panels shall be located within an approved fire control room and shall be accessible from an adjacent fire apparatus roadway. There shall be only one fire control room per building. Said fire control room shall be a minimum size of thirty-five (35) square feet in size and shall be openable from the exterior via an approved door opening. (Fire)
59. All fire apparatuses, such as fire department connections and post indicating valves, serving identified building shall be designed and installed adjacent to each structure for first responder's operational purposes. (Fire)

60. If the existing water supply is unable to support the automatic fire sprinkler system, a listed fire pump would be your only option. If this is the case, you required fire pump room will have to be enlarged to accommodate all the required apparatuses needed to operate such a system. (Fire)
61. The phasing of this project shall not limit the fire department requirements for access and circulation throughout the project as a result of continuous construction in accordance with the California Fire Code, 2016 with the City of Roseville's Amendments. A separate phasing plan (and permit issued by the Building Department) shall be reviewed and approved by this department. (Fire)
62. This building shall be designed with fire department access doors every 100 lineal feet in accordance with Chapter 32 of the California Fire Code. (Fire)
63. This project shall not reduce the responsibilities of the owner(s) or future owners of these parcels from maintaining all on-site fire systems including all underground water lines if applicable. Private underground fire lines that serve multiple buildings and/or parcels shall be part of the reciprocal easement agreement. There shall be a clear language regarding maintenance and common easements agreement for service in the CCRs. A service company shall be obtained to maintain all on-site fire protection systems as noted in the conditions of approval. (Fire)
64. If added cornice construction is involved, the design shall support the weight of a ladder leaning against the assembly as well as a 330-pound vertical load applied to the **leading edge** of the horizontal projection of the cornice (a 250-pound firefighter carrying 80 pounds of equipment stepping off of a ladder onto the top of the cornice). (Fire)
65. Use, increase of hazardous materials or storage, liquids, gases and/or chemicals shall meet the requirements of the Chapter 6.95 of the Health and Safety Code, the Roseville Fire Department and the National Fire Codes. Submit a complete plan set and the Hazardous Materials Business Plan, including names and amount of any hazardous materials that will be stored or used, to the Fire and Life Safety Division for review and approval. A permit application shall also be provided at the time of submittal. Contact Steve Anderson of our Hazardous Materials Division within the Fire Department at (916) 774-5821 to initiate the process. Satisfaction of storage and use shall be determined prior to requesting occupancy. (Fire)
66. Adequate radio coverage shall be provided within all buildings for public safety agencies, as required by Roseville Municipal Code and the California Fire Code. A field test shall be provided by a person in possession of a current FCC License, or a current technician certification issued by the Associated Public-Safety Communications Officials International (APCO), or the National Association of Business and Educational Radio (NABER). The building owner shall retain all test records on the inspected premises and a copy shall be submitted to the Fire Department officials in accordance with Section 510 of the California Fire Code.
67. Adequate radio coverage shall include all of the following:
 - a. A minimum signal strength of 95 dBm available in 90% of the area of each floor of the building when transmitted from the closest City of Roseville Radio Communication site.

- b. A minimum signal strength of 95 dBm received at the closest City of Roseville Communication site when transmitted from 90% of the area of each floor of the building.
 - c. The frequency range that must be supported shall be 821-824 MHz and 866-869 MHz.
 - d. A 100 % reliability factor. (Fire, Police)
68. The Electric Department requires the submittal of the following information in order to complete the final electric design for the project:
- a. one (1) set of improvement plans
 - b. load calculations
 - c. electrical panel one-line drawings (Electric)
69. All on-site external lighting shall be installed and directed to have no off-site glare. Lighting within the parking areas and pedestrian walkways shall provide a maintained minimum of one (1) foot candle, and 0.5 foot candle of light, respectively. All exterior light fixtures shall be vandal resistant. (Planning & Police)
70. The parking lot shall have properly posted signs that state the use of the parking area is for the exclusive use of employees and customers of this project. (See California Vehicle Code Sections 22507.8, 22511.5, 22511.8, 22658(a), and the City of Roseville Municipal Code Section 11.20.110). The location of the signs shall be shown on the approved site plan. (Planning & Police)
71. It is the developer's responsibility to notify PG&E of any work required on PG&E facilities. (PG&E)

DURING CONSTRUCTION & PRIOR TO ISSUANCE OF OCCUPANCY PERMITS:

72. Any backflow preventors visible from the street shall be painted green to blend in with the surrounding landscaping. The backflow preventors shall be screened with landscaping and shall comply with the following criteria:
- a. There shall be a minimum clearance of four feet (4'), on all sides, from the backflow preventor to the landscaping.
 - b. For maintenance purposes, the landscaping shall only be installed on three sides and the plant material shall not have thorns.
 - c. The control valves and the water meter shall be physically unobstructed.
 - d. The backflow preventor shall be covered with a green cover that will provide insulation. (Planning, Environmental Utilities)
73. The following easements shall be provided by separate instrument and shown on the site plan, unless otherwise provided for in these conditions:

- a. Water, sewer, and reclaimed water easements. (Engineering, Environmental Utilities)
 - b. Additional internal easements will be required to cover primary electrical facilities to the project when the final electrical design is completed. (Electric)
 - c. If not already provided with the subdivision map, the applicant shall dedicate a separate easement to the City of Roseville for the bus stop located on NE corner of Fiddymment Road at Blue Oaks Blvd. (shelter #176). The easement documents shall be drafted for approval and acceptance by the City of Roseville and recorded at the County Recorders' office. (Alternative Transportation, Engineering)
74. Easement widths shall comply with the City's Improvement Standards and Construction Standards. Separate document easements required by the City shall be prepared in accordance with the City's "Policy for Dedication of Easements to the City of Roseville". All legal descriptions shall be prepared by a licensed land Surveyor. All existing public utility, electric, water, sewer and reclaimed water easements shall be maintained unless otherwise authorized by these conditions of approval. (Public Works, Environmental Utilities, Electric)
75. Inspection of the potable water supply system on new commercial projects shall be as follows:
- a. The Environmental Utilities Inspector will inspect all potable water supply up to the downstream side of the backflow preventor.
 - b. The property owner/applicant shall be responsible for that portion of the water supply system from the backflow preventor to the building. The builder/contractor shall engage a qualified inspector to approve the installation of this portion of the water supply. The Building Division will require from the builder/ contractor, a written document certifying that this portion of the potable water supply has been installed per improvement plans and in accordance with the Uniform Plumbing Code. This certificate of compliance shall be submitted to the Building Division before a temporary occupancy or a building final is approved.
 - c. The building inspectors will exclusively inspect all potable water supply systems for the building from the shutoff valve at the building and downstream within the building. (Building, Environmental Utilities)
76. All improvements being constructed in accordance with the approved grading and improvement plans shall be accepted as complete by the City. (Engineering)
77. The words "traffic control appurtenances" shall be included in the list of utilities allowed in public utilities easements (PUE's) located along public roadways. (Engineering)
78. The applicant/developer shall prepare a Transportation Systems Management (TSM) agreement for The Plaza at Blue Oaks to be reviewed and approved by the City Manager (Alternative Transportation).
79. Water, sewer and reclaimed water shall be constructed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards. (Environmental Utilities)

80. All water backflow devices shall be tested and approved by the Environmental Utilities Department. (Environmental Utilities)
81. **Restaurants or other Food Service Establishment (FSE).** The applicant shall design for installation and/or install an exterior grease interceptor if the proposed business could potentially discharge substances containing fats, oils and grease (FOG) into the sewer system. The grease interceptor shall be adequate to separate and remove FOG contained in the wastewater from FSE's prior to discharge to the public sewer. (Environmental Utilities)
82. In the event an exterior grease interceptor cannot be installed due to space limitation, the developer shall install a grease trap, per City Standards, that will mechanically separate the FOG contained in the wastewater from the FSE prior to discharge to the public sewer. (Environmental Utilities)
83. Pursuant to the Municipal Code, the applicant shall apply for and obtain a FOG waste discharge permit (FOG WDP) from the Environmental Utilities Industrial Waste Division prior to occupancy or prior to discharging waste to the public sewer. The applicant shall submit information required by the Environmental Utilities Department for evaluation, including but not limited to: site plans, floor plans, mechanical and plumbing plans, and details to show all sewers, FOG control device, grease interceptor or other pretreatment equipment and appurtenances by size, location and elevation. Additional information related to the applicant's business operations and potential discharge may be requested to properly evaluate the FOG WDP application. (Environmental Utilities)
84. All Electric Department facilities, including streetlights where applicable, shall be designed and built to the "City of Roseville Specifications for Commercial Construction." (Electric)
85. The City of Roseville Electric Department has electrical construction charges which are to be paid by the developer and which are explained in the City of Roseville "Specification for Commercial Construction." These charges will be determined upon completion of the final electrical design. (Electric)
86. Any relocation, rearrangement, or change of existing electric facilities due to this development shall be at the developer's expense. (Electric)
87. Any facilities proposed for placement within public/electric utility easements shall be subject to review and approval by the Electric Department before any work commences in these areas. This includes, but is not limited to, landscaping, lighting, paving, signs, trees, walls, and structures of any type. (Electric)
88. All electric metering shall be directly outside accessible. This can be accomplished in any of the following ways:
 - a. Locate the metered service panel on the outside of the building.
 - b. Locate the metered service panel in a service room with a door that opens directly to the outside. The developer will be required to provide a key to the door for placement in a lock box to be

installed on the outside of the door. Any doors leading from the service room to other areas of the building shall be secured to prohibit unauthorized entry. (Electric)

89. One 3/4" conduit with a 2-pair phone line shall be installed from the buildings telephone service panel to the meter section of the customer's electrical switchgear or panel. (Electric)
90. It is the responsibility of the developer to insure that all existing electric facilities remain free and clear of any obstruction during construction and when the project is complete. (Electric)

OTHER CONDITIONS OF APPROVAL:

90. Signs shown on the elevations are not approved as part of the Design Review Permit. A Sign Permit is required for all project signs. (Planning)
91. Following the installation of the landscaping, all landscape material shall be maintained in a healthy and weed free condition; dead plant material shall be replaced immediately. All trees shall be maintained and pruned in accordance with the accepted practices of the International Society of Arboriculture (ISA). (Planning)
92. The City reserves the right to restrict vehicle turning movements within the public right-of-way in the future if deemed necessary by the City Engineer. (Engineering)
93. The required width of fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. Minimum required widths and vertical clearances established by the Fire Code shall be maintained at all times during construction. Closure of accesses for fire apparatus by gates, barricades and other devices shall be prohibited unless approved by the Fire Chief. (Fire)
94. Temporary aboveground storage tanks may be used at construction sites for diesel fuel only and shall not exceed 1,000 gallon capacity. Tanks shall comply with all provisions found within the Fire Code. A Fire Department Permit shall be obtained prior to tank installation. The permit shall expire after 90 days from the date of issuance, unless extended by the Fire Chief. (Fire)
95. If site survey or earth moving work results in the discovery of hazardous materials in containers or what appears to be hazardous wastes released into the ground, the contractor or person responsible for the building permit must notify the Roseville Fire Department immediately. A representative from the Fire Department will make a determination as to whether the incident is reportable or not and if site remediation is required. (Fire)
96. The location and design of the gas service shall be determined by PG&E. The design of the gas service for this project shall not begin until PG&E has received a full set of City approved improvement plans for the project. (PG&E)
97. All commercial air conditioning units 5 tons or less (<65,000 btu/ h) shall meet the current Consortium for Energy Efficiency ("CEE") Tier I specifications. The SEER/EER ratings will be specified on building plans and Title 24 compliance certificates at the time building permits are requested. The SEER and EER ratings will be verified with appropriate documentation. These requirements shall be

utilized in the overall energy compliance calculations required for issuance of any building permit for any commercial building in the Plan Area. Any variances, with the exception of Tier 2 compliance, must be approved by the Electric Department's Retail Energy Services Department. (Electric)

98. The project is subject to the noise standards established in the City's Noise Ordinance. In accordance with the City's Noise Ordinance project construction is exempt between the hours of seven a.m. and seven p.m. Monday through Friday, and between the hours of eight a.m. and eight p.m. Saturday and Sunday. Provided, however, that all construction equipment shall be fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order. (Building)
99. The developer (or designated consultant) shall certify that the building foundation location has been placed according to all approved setback requirements shown on the approved site plan. The developer shall prepare a written statement confirming building placement and provide an original copy to the City Building Division Field Inspector at the time of or prior to the foundation inspection. (Building)
100. Prior to Certificate of Occupancy, the applicant may apply for a Temporary Certificate of Occupancy (TCO) of the building. If a TCO is desired, the applicant must submit a written request to the Building Division a minimum of thirty (30) days prior to the expected temporary occupancy date and shall include a schedule for occupancy and a description of the purpose for the Temporary Certificate of Occupancy. (Building)
101. Concurrent with submittal for plan check and prior to a request for final building inspection, the applicant may request City approval of an occupancy phasing plan to allow individual or multiple building occupancies. This request shall be made in writing to the Building Department and shall include 10 copies of the following:
 - a) A description of measures that will be undertaken to minimize conflict between residents/building occupants and construction traffic (e.g. fencing, etc.);
 - b) A phasing plan showing the proposed buildings, internal roads and access routes, landscaping, trash enclosure locations, and any other improvements planned for each phase; and
 - c) Estimated time frame for each phase and a specific date for the first phase. (Planning, Building)

CONDITIONS OF APPROVAL FOR THE TENTATIVE SUBDIVISION MAP

1. The approval of a Tentative Map and/or tentative site plan does not constitute approval of proposed improvements as to size, design, materials, or location, unless specifically addressed in these conditions of approval. (Engineering)
2. The design and construction of all improvements shall conform to the Improvement Standards and Construction Standards of the City of Roseville, or as modified by these conditions of approval, or as directed by the City Engineer. (Engineering)

3. The applicant shall not commence with any on-site improvements or improvements within the right-of-way until such time as grading and/or improvement plans are approved and grading and/or encroachment permits are issued by the Department of Development Service Engineering Division (Engineering)
4. The applicant shall pay City's actual costs for providing plan check, mapping, GIS, and inspection services. This may be a combination of staff costs and direct billing for contract professional services. Project billing may occur up to two (2) months after the end of warranty or the Notice of Termination date for the SWPPP, whichever occurs later. (Engineering, Environmental Utilities, Electric, Finance)

PRIOR TO ISSUANCE OF A GRADING PERMIT AND/OR IMPROVEMENT PLANS:

5. Grading around the native oak trees shall be as shown on the tentative map or as approved in these conditions. (Planning)
6. The applicant shall submit to the Planning and Engineering Departments the appropriate Army Corps of Engineers permit or clearance, the California Department of Fish and Game Stream Bed Alteration Agreement, and/or the Regional Water Quality Control Board Water Quality Certificate. (Planning)
7. Water and sewer infrastructure shall be designed and constructed pursuant to the adopted City of Roseville Improvement Standards and Construction Standards and shall reflect the following:
 - a) Sewer and water service laterals shall not be allowed off of water and sewer mains larger than 12 inches in diameter.
 - b) Utilities or permanent structures shall not be located within the area which would be disturbed by an open trench needed to expose sewer trunk mains deeper than 12' unless approved by Environmental Utilities in these conditions. The area needed to construct the trench is a sloped cone above the sewer main. The cone shall have 1:1 side slopes.)
 - c) Water and sewer mains shall not exceed a depth of 12' below finished grade, unless authorized in these conditions
 - d) All sewer manholes shall have all-weather 10-ton vehicular access unless authorized by these conditions. (Environmental Utilities)
8. Recycled water infrastructure shall be designed pursuant to the adopted City of Roseville Improvement Standards and the City of Roseville Construction Standards. The applicant shall pay all applicable recycled water fees. Easements shall be provided as necessary for recycled water infrastructure. (Environmental Utilities)
9. All sewer on-site between MHs shall be considered public. (Environmental Utilities)
10. Organic enclosures shall be located perpendicular to the main drive aisle. (Environmental Utilities)

11. Fire hydrants shall be located as required by the Fire Department. The maximum distance between fire hydrants shall not exceed 1000 feet on center. (Fire)
12. Minimum fire flow is 3,000 gallons per minute with 20 lbs. psi residual pressure. A change in any of the conditions may increase the required fire flow. (Fire)
13. Any facilities proposed for placement within public/electric utility easements shall be subject to review and approval by the Electric Department before any work commences in these areas. This includes, but is not limited to, landscaping, lighting, paving, signs, trees, walls, and structures of any type. (Electric)
14. The design for electrical service for this project will begin when the Electric Department has received a full set of improvement plans for the project. (Electric)
15. All landscaping in areas containing electrical service equipment shall conform with the "Electric Department Landscape Design Requirements" as outlined in Section 10.00 of the Electric Department's "Specifications for Commercial Construction." (Electric)
16. The Electric Department requires the submittal of the following information in order to complete the final electric design for the project:
 - one (1) set of improvement plans
 - load calculations
 - electrical panel one-line drawings
17. The location and design of the gas service shall be determined by PG&E. The design of gas service for this project shall not begin until PG&E has received a full set of City approved improvement plans for the project. (PG&E)
18. It is the developer's responsibility to notify PG&E of any work required on PG&E facilities. (PG&E)

PRIOR TO OR UPON RECORDATION OF FINAL/PARCEL MAP:

19. The following easements shall be provided and shown on the Final/Parcel Map or by separate instrument, unless otherwise provided for in these conditions:
 - a) Water, sewer, and reclaimed water easements; and,
 - b) The applicant shall dedicate an easement to the City of Roseville for the bus stop located on NE corner of Fiddymment Road at Blue Oaks Blvd. (shelter #176). The easement language/documents shall be drafted for approval and acceptance by the City of Roseville and recorded with the map. (Alternative Transportation, Engineering)

Easement widths shall comply with the City's Improvement Standards and Construction Standards. (Environmental Utilities, Electric, Engineering)

20. All existing easements shall be maintained, unless otherwise provided for in these conditions. (Environmental Utilities, Electric, Engineering)
21. Separate document easements required by the City shall be prepared in accordance with the City's "Policy for Dedication of Easements to the City of Roseville". All legal descriptions shall be prepared by a licensed Land Surveyor (Environmental Utilities, Electric, Engineering)
22. A declaration of Conditions, Covenants and Restrictions (CC&Rs), in a form approved by the City Attorney, shall be recorded on the entire property concurrently with the Final/Parcel Map. The CC&Rs shall include the following item(s):
 - a) A clause stating that the property owners within this subdivision shall agree to participate in a Transportation Systems Management (TSM) Plan and shall agree to enter into a Transportation Management Agreement with the City of Roseville (Alternative Transportation, Planning).
 - b) A clause prohibiting the amendment, revision or deletion of any sections in the CC&Rs required by these conditions of approval without the prior written consent of the City Attorney. (Attorney)
 - c) A clause requiring reciprocal access and parking for all parcels. (Planning)
23. In the event that the Final (Parcel) Map will record prior to the completion of on-site construction, all utility and access easements shall be placed on the face of the Map to the satisfaction of the City Engineer. If all on-site improvements are complete prior to the recordation of the map, then a separate agreement allowing all parcels/lots the rights of reciprocal access, rights to construct, and parking shall be submitted to the City as a part of final/parcel map submittal. Said agreement shall be in a form acceptable to the City Attorney and referenced on the face of the recorded map. (Engineering)
24. The Final/Parcel Map shall include an irrevocable offer to dedicate public rights-of-way and public and/or private easements as required by the City. (Engineering)
25. The words "traffic control appurtenances" shall be included in the list of utilities allowed in public utilities easements (PUE's) located along public roadways. (Engineering)
26. The Final/Parcel Map shall be submitted per, "The Digital Submittal of Cadastral Surveys." A plot or print of the submittal shall accompany the electronic copy. The complete submittal shall occur after the Engineering Department approval but prior to City Council approval of the Final/Parcel Map. (Engineering)
27. Electric construction costs incurred by the City of Roseville Electric Department for this project shall be paid for by the developer per the applicable policy. (Electric)
28. Additional internal easements will be required to cover primary electrical facilities to the project when the final electrical design is completed. (Electric)

29. All Electric Department facilities, including streetlights where applicable, shall be designed and built to the "City of Roseville Specifications for Commercial Construction." (Electric)
30. The City of Roseville Electric Department has electrical construction charges which are to be paid by the developer and which are explained in the City of Roseville "Specification for Commercial Construction." These charges will be determined upon completion of the final electrical design. (Electric)
31. The Environmental Utilities Department shall make a determination that there is adequate conveyance and treatment capacity in the City sewer system to handle the newly created Lot/Parcels. (Environmental Utilities)
32. The applicant shall pay all applicable water and sewer fees. (Environmental Utilities)

OTHER CONDITIONS OF APPROVAL:

33. The applicant shall pay City's actual costs for providing plan check, installation and inspection services. This may be a combination of staff costs and direct billing for contract professional services. (Environmental Utilities, Engineering)
34. Any relocation, rearrangement, or change to existing electric facilities due to this development shall be at the developer's expense. (Electric)
35. It is the responsibility of the developer to insure that all existing electric facilities remain free and clear of any obstructions during construction and when the project is complete. (Electric)
36. No grading activities shall be permitted within 10 feet around the power poles. If there are major grade changes around the poles, they will be handled case-by-case during civil improvement plan review. (Electric)
37. Contractors working under and around power lines shall maintain Cal OSHA requirements, which will be discussed at the Pre-Construction meeting. (Electric)
38. If site survey or earth moving work results in the discovery of hazardous materials in containers or what appears to be hazardous wastes released into the ground, the contractor shall notify the Roseville Fire Department immediately. A representative from the Fire Department will make a determination as to whether the incident is reportable or not and if site remediation is required. Non emergency releases or notifications about the presence of containers found shall be reported to the Fire Department. (Fire)
39. The project shall comply with all applicable environmental mitigation measures identified in the Plaza at Blue Oaks Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program. (Planning)

CONDITIONS OF APPROVAL FOR THE TREE PERMIT

PRIOR TO ISSUANCE OF ANY PERMITS OR ANY CONSTRUCTION ON-SITE:

1. All recommendations contained in the Arborist Report (Exhibit J) are incorporated by reference into these conditions, except as modified herein. (Planning)
2. Tree(s) # 1510, 1513, 1514, 1521, 1522, 1523, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1559, 1562, 1563, 1564 (or as listed in Exhibit J and shown on Exhibit K) are approved for removal with this tree permit. All other native oak trees shall remain in place. Trees to be removed shall be clearly marked in the field and inspected by Planning Staff prior to removal. Removal of the trees shall be performed by or under the supervision of a certified arborist. (Planning)
3. The developer shall be responsible for the replacement of the total number of inches proposed for removal. The total number of inches for this project is 721. Mitigation must be provided in the form of payment in the amount of \$39,294 prior to tree removal, and planting of non-native and native trees (as shown in the landscape plan, included as Exhibit I). (Planning)
4. No activity shall be permitted within the protected zone of any native oak tree beyond those identified by this report. (Planning)
5. A \$10,000 cash deposit or bond (or other means of security provided to the satisfaction of the Planning Division) shall be posted to ensure the preservation of all remaining trees during construction. The cash deposit or bond shall be posted in a form approved by the City Attorney. Each occurrence of a violation on any condition regarding tree preservation shall result in forfeiture of all or a portion of the cash deposit or bond. (Planning)
6. A violation of any of the conditions of this Tree Permit is a violation of the Roseville Municipal Code, the Zoning Ordinance (Chapter 19.74) and the Tree Preservation Ordinance (Chapter 19.66). Penalties for violation of any of the conditions of approval may include forfeiture of the bond, suspension or revocation of the permit, payment of restitution, and criminal penalties. (Planning)
7. A fencing plan shall be shown on the approved site plan and/or improvement plans demonstrating the Protected Zone for the affected trees. A maximum of three feet beyond the edge of the walls, driveways, or walkways will be allowed for construction activity and shall be shown on the fencing plan. The fencing plan shall be reviewed and approved by the Planning Division prior to the placement of the protective fencing. (Planning)
8. The applicant shall install a minimum of a five-foot high chain link fence (or acceptable alternative) at the outermost edge of the Protected Zone of the oak tree. Where encroachment is permitted pursuant to Condition 4, above, the fencing for encroachments shall be installed at the limit of construction activity. The applicant shall install signs at two equidistant locations on the temporary fence that are clearly visible from the front of the lot and where construction activity will occur. The size of each sign shall be a

minimum of two feet (2') by two feet (2') and must contain the following language: "WARNING THIS FENCE SHALL NOT BE REMOVED OR RELOCATED WITHOUT WRITTEN AUTHORIZATION FROM THE PLANNING DIVISION". (Planning)

9. Once the fencing is installed, the applicant shall schedule an appointment with the Planning Division to inspect and approve the temporary fencing before beginning any construction. (Planning)
10. The applicant shall arrange with the arborist to perform, and certify in writing, the completion of deadwooding, fertilization, and all other work recommended for completion prior to the approval of improvement plans. Pruning shall be done by an Arborist or under the direct supervision of a Certified Arborist, in conformance with International Society of Arboriculture (I.S.A.) standards. Any watering and deep root fertilization which the arborist deems necessary to protect the health of the trees as noted in the arborist report or as otherwise required by the arborist shall be completed by the applicant. (Planning)
11. A utility trenching pathway plan shall be submitted depicting all of the following systems: storm drains, sewers, water mains, and underground utilities. The trenching pathway plan shall show the proposed locations of all lateral lines. (Planning)
12. A Site Planning Meeting shall be held with the applicant, the applicant's primary contractor, the Planning Division and the Engineering Division to review this permit, the approved grading or improvement plans, and the tree fencing prior to any grading on-site. The Developer shall call the Planning Division and Engineering Division two weeks prior to the start of grading work to schedule the meeting and fencing inspection. (Planning)
13. The following information must be located on-site during construction activities: Arborist Report, approved site plan/improvement plans including fencing plan, and conditions of approval for the Tree Permit. All construction must follow the approved plans for this tree permit without exception. (Planning)
14. All preservation devices (aeration systems, oak tree wells, drains, special paving, etc.) shall be designed and installed as required by these conditions and the arborist's recommendations, and shall be shown on the improvement plans or grading plans. (Planning)
15. If any native ground surface fabric within the Protected Zone must be removed for any reason, it shall be replaced within forty-eight (48) hours. (Planning)
16. Storage or parking of materials, equipment, or vehicles is not permitted within the Protected Zone of any oak tree. Vehicles and other heavy equipment shall not be operated within the Protected Zone of any oak tree. (Planning)
17. Where recommended by the arborist, portions of the foundation shall be hand dug under the direct supervision of the project arborist. The certified arborist shall immediately treat any severed or damaged

roots. Minor roots less than one (1) inch in diameter may be cut, but damaged roots shall be traced back and cleanly cut behind any split, cracked or damaged area. Major roots over one (1) inch in diameter may not be cut without approval of an arborist and any arborist recommendations shall be implemented. (Planning)

18. The temporary fencing shall remain in place throughout the entire construction period and shall not be removed without obtaining written authorization from the Planning Division. In no event shall the fencing be removed before the written authorization is received from the Planning Division. (Planning)

PRIOR TO ISSUANCE OF FINAL:

19. Within 5 days of the completion of construction, a Certification Letter from a certified arborist shall be submitted to and approved by the Planning Division. The certification letter shall attest to all of the work (regulated activity) that was conducted in the protected zone of the tree, either being in conformance with this permit or of the required mitigation still needing to be performed. (Planning)
20. The approval of this Tree Permit shall run with the Design Review Permit and shall tentatively expire on **May 14, 2022**. The applicant may extend the tree permit for an additional year subject to the extension requirements for a Design Review Permit. (Planning)

NOTICE TO PROJECT APPLICANT: All materials introduced at a public hearing or included with the project's staff report, including but not limited to exhibits, photographs, video or audio tapes, plan sets, architectural drawings, models, color and materials palettes, and maps must be retained by the Planning Division as a part of the public record for one year following the City's final action on the project. Official project file materials will be kept in conformance with the Planning Division's adopted retention schedule. Color renderings and material boards will be disposed of after the project is built and the project receives a certificate of occupancy or at the end of one year, whichever is later.
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**DEVELOPMENT SERVICES DEPARTMENT – PLANNING DIVISION**

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MEMORANDUM

To: Planning Commission**From:** Kinarik Shallow, Associate Planner**Date:** May 13, 2020**Re:** Placer County Air Pollution Control District – Air Quality Permit Regulations

The purpose of this memorandum is to provide additional information regarding Placer County Air Pollution Control District (PCAPCD)'s rules and regulations related to air quality permits. Air quality impacts of the Plaza at Blue Oaks project were evaluated in the Initial Study prepared for the project, which determined that compliance with these rules and regulations would ensure impacts would be less than significant. The PCAPCD permit process ensures that the required local, state, and federal standards are adhered to as it relates to air quality impacts, and that no permit is provided if PCAPCD significance thresholds are exceeded. The applicable PCAPCD permit requirements, rules and regulations are included as Attachments 1-3, below.

Attachments

1. PCAPCD Air Quality Permitting
2. Rule 501 General Permit Requirements
3. PCAPCD Advisory Notice for Gasoline Dispensing Facilities

PCAPCD Air Quality Permitting

State law gives local air pollution control districts “the primary responsibility for control of air pollution from all sources, other than emissions from motor vehicles.” (Health & Safety Code, § 40000.) Pursuant to this authority, the Placer County APCD requires that gas stations obtain a permit known as an “Authority to Construct” prior to building the facility and another annual permit known as a “Permit to Operate” before dispensing gasoline. The APCD’s Rules and Regulations require denial of these permits if the proposed gas station’s air emissions would violate federal, State or local air quality standards. (Placer County APCD, Rules and Regulations, Rule 501, § 303, and Rule 502, § 408.) In addition to controlling the emission of various “criteria pollutants,” the APCD’s permits will address any potential emission of Toxic Air Contaminants from gas stations, including benzene. The APCD will review the proposed “annual throughput” for the gas station and will place any necessary restrictions on the operation to ensure that the facility’s emissions of TACs do not exceed the APCD’s established “health risk” threshold of 10 in 1 million. (See PCAPCD Advisory Notice for Gasoline Dispensing Facilities) Notably, this “10 in 1 million” threshold is identical to the APCD’s CEQA threshold of significance for TACs. Accordingly, it can be said with certainty that a gas station which must obtain an Authority to Construct and Permit to Operate from APCD will not result in any significant TAC emission impacts.

RULE 501 GENERAL PERMIT REQUIREMENTS

Adopted 12-08-70

(Amended 05-09-72, 11-12-74, 05-24-77, 06-19-79, 09-21-93, 11-03-94, 12-09-04, 8-12-10)

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100 GENERAL

101 PURPOSE: To provide an orderly procedure for the review of new sources of air pollution and modification and operation of existing sources through the issuance of permits. Procedures for issuing, modifying, or renewing Title V Permits to Operate for stationary sources that are subject to Rule 507, FEDERAL OPERATING PERMIT PROGRAM, shall also be consistent with the procedures specified in that rule.

102 EXEMPTION RECORDKEEPING: Records must be maintained to substantiate the following exemptions. Records must be maintained on site and made available to the District upon request.

110 EXEMPTION, GENERAL: An Authority to Construct and Permit to Operate shall not be required for the equipment listed in Sections 111 to 122, unless an emissions unit is:

110.1 Subject to New Source Performance Standards, except engines less than 50 horsepower subject to NSPS JJJJ, Standards of Performance for Stationary Spark Ignition ICE; or

110.2 Subject to National Emission Standards for Hazardous Air Pollutants; or

110.3 Subject to the requirements of Rule 507, FEDERAL OPERATING PERMIT PROGRAM; or

110.4 Emits, in levels deemed appropriate for review by the Air Pollution Control Officer, substances identified as a toxic air contaminant or which are under review pursuant to Health and Safety Code Section 39650 et seq.; or

110.5 The Air Pollution Control Officer makes a determination that the emission unit may not operate in compliance with the District Rules and Regulations; or

110.6 An emissions unit or stationary source for which emission reduction credits have been requested or granted in accordance with Rule 504, EMISSION REDUCTION CREDITS.

110.7 An otherwise exempt piece of equipment that is part of a process that requires a permit.

111 EXEMPTION, MOBILE SOURCES:

111.1 Engines used to propel mobile equipment or a motor vehicle of any kind, but not including any article, machine, equipment or other contrivance mounted on such a vehicle that would otherwise require a permit under the provisions of these rules and regulations.

111.2 Locomotives, airplanes and watercraft used to transport passengers or freight. This exemption shall not apply to equipment used for dredging of waterways or equipment used in pile driving adjacent to or in waterways.

112 EXEMPTION, COMBUSTION AND HEAT TRANSFER EQUIPMENT:

112.1 Internal combustion engines with a manufacturer's maximum continuous rating of 50 brake horsepower or less or gas turbine engines with a maximum heat input rate of 3,000,000 British Thermal Units (Btu) per hour or less at ISO standard day conditions (288 degrees Kelvin, 60 percent relative humidity, and 101.3

kilopascals pressure). The ratings of all engines or turbines used in the same process will be accumulated to determine whether this exemption applies.

112.2 Any combustion equipment that has a maximum heat input of less than 1,000,000 Btu per hour (gross) and is equipped to be fired exclusively with natural gas, liquefied petroleum gas or any combination thereof. The ratings of all combustion equipment used in the same process will be accumulated to determine whether this exemption applies.

113 EXEMPTION, RESIDENTIAL STRUCTURES: Equipment utilized exclusively in connection with any structure, when the structure is designed for and used exclusively as a dwelling for not more than four families.

114 EXEMPTION, AGRICULTURAL OPERATIONS: Equipment used exclusively in the growing of agricultural crops, or in the commercial raising of fowl or other animals. This exemption does not apply to an agricultural source, as defined in this Rule, that is:

114.1 A Major Stationary Source or Major Modification, as defined in Rule 502, NEW SOURCE REVIEW, or

114.2 A stationary source that emits in any 12-month period air contaminant emissions equal to or more than the following quantities of emissions:

- a. 50 percent of the major source thresholds for regulated air pollutants (excluding HAPs);
- b. 5 tons per year of a single HAP;
- c. 12.5 tons per year of any combination of HAPs; and
- d. 50 percent of any lesser threshold for a single HAP as the U.S. EPA may establish by rule.

115 EXEMPTION, COOLING SYSTEMS AND VACUUM CLEANING: Refrigeration, air conditioning, ventilating, or vacuum cleaning systems not designed to remove air contaminants generated by equipment which would require a permit under these rules and regulations.

116 EXEMPTION, COOLING TOWERS: Water cooling towers that have a circulation rate of less than 10,000 gallons per minute and which are not used for the cooling of process water, water from barometric jets, or water from barometric condensers.

117 EXEMPTION, STORAGE AND TRANSFER: Tanks, reservoirs, vessels or other containers and their associated dispensing, pumping and compression systems used exclusively for the storage of:

117.1 Liquefied or compressed gases.

117.2 Unheated organic materials with an initial boiling point of 150 degrees Celsius (302 degrees Fahrenheit) or greater, as determined by the testing procedure specified in Section 501.2, or with an organic vapor pressure of 5 mm Hg (0.1 psia) or less at 20°C, as determined by the testing procedure specified in Section 501.3.

117.3 Organic liquids with a vapor pressure of 77.5 mm Hg (1.5 psia) or less at 20°C, as determined by the testing procedure specified in Section 501.3, stored in containers having a capacity of 23,000 liters (6076 gallons or less). Equipment used exclusively for the transfer of organic liquids with a vapor pressure of 77.5 mm Hg (1.5 psia) at 20°C to or from storage.

117.4 Unheated solvent dispensing containers of 380 liters (100 gallons) capacity or less.

118 EXEMPTION, SURFACE COATING AND PREPARATION:

118.1 Water solution containing no more than two percent volatile organic compounds by weight for surface preparation, cleaning, stripping, etching (other than chemical milling) or the electrolytic plating with electrolytic polishing of, or the electrolytic stripping of brass, bronze, cadmium, copper, iron lead, nickel, tin, zinc, and precious metals.

118.2 Surface coating operations using a combined total of one gallon per day or less of coating material and solvent.

118.3 Unheated non-conveyorized solvent rinsing containers or unheated non-conveyorized coating dip tanks of 380 liters (100 gallons) capacity or less with an open surface area of one square meter (11 square feet) or less providing no more than 25 gallons of solvent are evaporated or lost to the atmosphere from all such equipment per calendar year.

119 EXEMPTION, FOOD PROCESSING: The following processing equipment for food or other human consumables and exhaust systems or collectors serving exclusively such equipment:

119.1 Used in eating establishments for the purpose of preparing food for human consumption.

119.2 Smokehouses in which the maximum horizontal inside cross sectional area does not exceed 2 square meters (21.5 square feet).

119.3 Mixers and blenders used in bakeries.

119.4 Confection cookers.

119.5 Used exclusively to grind, blend or package tea, cocoa, spices, or roasted coffee.

120 EXEMPTION, LABORATORY EQUIPMENT: Laboratory equipment used exclusively for chemical or physical analysis and bench scale tests, including associated vacuum-producing equipment.

121 EXEMPTION, REPAIRS AND MAINTENANCE: Repairs or maintenance not involving changes to any equipment for which a permit has been granted under Section 301 of this rule.

122 EXEMPTION, OTHER EQUIPMENT: Unless subject to the requirements of Rule 507, FEDERAL OPERATING PERMIT PROGRAM, other equipment authorized for exemption by the Air Pollution Control Officer and which would emit less than 2 pounds in any 24 hour period of any pollutants without the benefit of air pollution control devices.

200 DEFINITIONS: Unless otherwise defined below, the terms used in this rule are defined in Rule 502, NEW SOURCE REVIEW; Rule 504, EMISSIONS REDUCTION CREDITS; and Rule 102, DEFINITIONS; and apply in hierarchical order.

201 ADMINISTRATIVE PERMIT AMENDMENT: An amendment to a Permit to Operate which:

- 201.1 Corrects a typographical error; or
- 201.2 Identifies a minor administrative change at the stationary source; for example, a change in the name, address, or phone number of any person identified in the permit; or
- 201.3 Requires more frequent monitoring or reporting by a responsible official of the stationary source; or
- 202 AGRICULTURAL SOURCE OF AIR POLLUTION OR AGRICULTURAL SOURCE:** A source of air pollution or a group of sources used in the production of crops, or the raising of fowl or animals located on contiguous property under common ownership or control, including, but not limited to the following criteria:
- 202.1 Is a confined animal facility, including, but not limited to, any structure, building, installation, barn, corral, coop, feed storage area, milking parlor, or system for the collection, storage, treatment, and distribution of liquid and solid manure, if domesticated animals, including, but not limited to, cattle, calves, horses, sheep, goats, swine, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.
- 202.2 Is an internal combustion engine used in the production of crops or the raising of fowl or animals, including, but not limited to, an engine subject to Section 41750 of the California Health & Safety Code, except an engine that is used to propel implements of husbandry, as that term is defined in Section 36000 of the Vehicle Code, as that section existed on January 1, 2003.
- 203 ANNIVERSARY DATE:** The day and month of issuance of a Permit to Operate and that same day and month of each succeeding year.
- 204 APPLICABLE REQUIREMENTS:** Air quality requirements with which a facility must comply pursuant to the District's regulations, codes of California statutory law, the Federal Clean Air Act as amended in 1990 and implementing regulations, other provisions of the United States Code, and the Code of Federal Regulations.
- 205 AUTHORITY TO CONSTRUCT:** A preconstruction permit authorizing construction prior to the starting of construction and conforming to the requirements of Rule 502, NEW SOURCE REVIEW.
- 206 COMMENCE:** As applied to construction, means that the owner or operator has all of the necessary permits or approvals required under state and federal air quality control laws, District Rules and Regulations, and those air quality control laws and regulations which are part of the California State Implementation Plan, and has:
- 206.1 Begun, or caused to begin, a continuous program of on-site construction of the source, to be completed in a reasonable time; or
- 206.2 Entered into binding agreements or contractual obligations which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable time.
- 207 CONTIGUOUS PROPERTY:** Two or more parcels of land with a common boundary or separated solely by a public roadway or other public right-of-way.

- 208 EMISSIONS UNIT:** An identifiable operation or piece of process equipment such as an article, machine, or other contrivance which controls, emits, may emit, or results in the emissions of any air pollutant directly or as fugitive emissions.
- 209 REGULATED POLLUTANT:** A pollutant for which an Ambient Air Quality Standard has been established by the EPA or by the California Air Resources Board (ARB), and the precursors to such pollutants.
- 210 RESPONSIBLE OFFICIAL:** An individual with the authority to certify that a source complies with all applicable requirements, including the conditions of permits issued to sources in accordance with Regulation 5, PERMITS. A "responsible official" means one of the following:
- 210.1** For a corporation, a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - 210.1.1** The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
 - 210.1.2** The delegation of authority to such representative is approved in advance by the Air Pollution Control Officer;
 - 210.2** For a partnership or sole proprietorship, a general partner or the proprietor, respectively; or
 - 210.3** For a municipality, state, federal, or other public agency, either a principal executive officer or a ranking elected official; or
 - 210.4** For an acid rain unit subject to Title IV (Acid Deposition Control) of the Clean Air Act, the "responsible official" is the designated representative of that unit for any purposes under Title IV and Rule 507, FEDERAL OPERATING PERMIT PROGRAM.
- 211 STARTUP:** means the setting in operation of a stationary source or emission unit for any purpose.
- 212 STATIONARY SOURCE (SOURCE OR FACILITY):** Any building, structure, facility, or emissions unit which emits or may emit any regulated pollutant directly or as fugitive emissions.
- 212.1** Building, structure, facility, or emissions unit includes all pollutant emitting activities which:
 - 212.1.1** Belong to the same industrial grouping; and
 - 212.1.2** Are located on one property or on two or more contiguous properties; and
 - 212.1.3** Are under the same or common ownership, operation, or control or which are owned or operated by entities which are under common control.

212.2 Pollutant emitting activities shall be considered as part of the same industrial grouping if:

212.2.1 They belong to the same two-digit standard industrial classification code under the system described in the 1987 Standard Industrial Classification Manual; or

212.2.2 They are part of a common production process. (Common production process includes industrial processes, manufacturing processes and any connected processes involving a common material.)

212.3 The emissions of cargo carriers associated with the stationary source shall be considered emissions from the stationary source to the extent that emission reductions from these cargo carriers are proposed as offsets.

213 TITLE V PERMITS: A permit issued, denied, renewed, amended, or reopened pursuant to Rule 507, FEDERAL OPERATING PERMIT PROGRAM, and the Federal Clean Air Act as amended in 1990 (42 U.S.C. Section 7401 et seq.), and Part 70 Code of Federal Regulations, "State Operating Permit Programs".

300 STANDARDS

301 AUTHORITY TO CONSTRUCT: Any person building, erecting, placing on site, altering or replacing any article, machine, equipment or other contrivance, the use of which may cause, eliminate, reduce, or control the issuance of air contaminants, shall first obtain authorization for such construction from the Air Pollution Control Officer (APCO) as specified in Section 403 of this rule. The emissions unit(s) shall not commence operation until the Air Pollution Control Officer takes final action to approve the Authority to Construct. After the emissions unit(s) commence operation, the Authority to Construct may remain in effect as a Temporary Permit to Operate until a Permit to Operate the equipment is granted or denied or the application is canceled.

301.1 An Authority to Construct, unless extended, shall expire no later than one year following the construction completion date given by the applicant, or no later than two years following the date of permit issuance, whichever occurs first.

301.2 If a written request to extend the Authority to Construct is received by the Air Pollution Control Officer prior to the expiration of the Authority to Construct, an extension may be granted for up to two years if the Air Pollution Control Officer determines that: (1) commencement of construction has occurred, and a good faith effort to complete the project has been made; and (2) the parameters of the project remain the same as in the initial application.

301.3 The Air Pollution Control Officer shall be notified of the anticipated date of initial startup or operation of any permitted emission unit.

301.4 The Air Pollution Control Officer shall be notified of the actual date of initial startup within five (5) days after such date.

302 PERMIT TO OPERATE: Any person operating an emission unit, shall first obtain a written permit from the Air Pollution Control Officer.

303 STANDARDS FOR GRANTING APPLICATIONS:

303.1 The Air Pollution Control Officer shall deny an Authority to Construct or Permit to Operate, except as provided in Rule 502, NEW SOURCE REVIEW, if the

applicant does not show that every emission unit is so designed, controlled, equipped, and operated with such air pollution control equipment that it may be shown to operate without emitting or without causing to be emitted air contaminants in violation of these rules and regulations or of such state or federal statutes as may be enforceable by the Air Pollution Control Officer on the date the application is deemed complete.

303.2 No Permit to Operate shall be granted, either by the Air Pollution Control Officer or the Hearing Board, for any emission unit which has been constructed or installed without authorization as required by Section 301 of this rule, until:

303.2.1 The information necessary to enable the Air Pollution Control Officer to make the determination required by Section 303 of this rule and Rule 502, NEW SOURCE REVIEW is presented to the Air Pollution Control Officer; and

303.2.2 Such emission unit is altered, if necessary, and made to conform to the standards set forth in Section 303 of this rule, elsewhere in these rules and regulations, and in the California Health and Safety Code.

303.3 In acting upon a Permit to Operate, if the Air Pollution Control Officer finds that the emission unit has not been constructed in accordance with the Authority to Construct, he or she shall deny the Permit to Operate. The Air Pollution Control Officer shall not accept any further application for a Permit to Operate the emission unit so constructed until he or she finds that the emission unit has been reconstructed in accordance with the Authority to Construct.

303.4 The Air Pollution Control Officer shall require enforceable emission limitations as permit conditions in Authorities to Construct and Permits to Operate to assure the permanence of surplus actual emissions reductions applied for use as internal reductions or emission reduction credits in accordance with Rule 502, NEW SOURCE REVIEW and Rule 504, EMISSION REDUCTION CREDITS.

303.5 The Air Pollution Control Officer shall determine that an applicant for an authority to construct or modify a potential source of air contaminants located within 1,000 feet from the outer boundary of a school has complied with the applicable requirements of California Health and Safety Code Section 42301.6, preparation and distribution of a public notice, prior to approving an application for an Authority to Construct permit.

303.6 Approval to construct shall not relieve any owner or operator of the responsibility to comply fully with all applicable requirements, including applicable provisions of the California State Implementation Plan, District Rules and Regulations, or State or Federal law.

303.7 The Air Pollution Control Officer shall require the applicant, as a condition of the Authority to Construct, to comply with the requirements of California Health and Safety Code Part 6, (Section 44300 et seq.), Air Toxics "Hot Spots" Information and Assessment Act.

304 PROVISION OF SAMPLING AND TESTING FACILITIES: In addition to the monitoring and testing required to comply with state or federal laws or regulations, the Air Pollution Control Officer may, upon reasonable written notice or before an Authority to Construct or Permit to Operate is granted, require the applicant or the owner or operator of any emission unit to:

- 304.1 Provide and maintain such facilities as are necessary for sampling and testing purposes in order to secure information that will disclose the nature, extent, quantity or degree of air contaminants discharged into the atmosphere from the equipment in question. In the event of such a requirement, the Air Pollution Control Officer shall notify the applicant in writing of the required size, number and location of sampling holes; the size and location of the sampling platform; the access to the sampling platform; and the utilities for operating the sampling, testing, and air monitoring equipment. Such platform and access shall be constructed in accordance with the applicable General Industry Safety Orders of the State of California.
- 304.2 Provide and maintain sampling and monitoring apparatus to measure emissions of air contaminants.
- 304.2.1 Continuous emission monitoring systems, as a minimum, shall be installed to meet the performance specifications required, by Section 502 of this rule.
- 304.2.2 A violation of emission standards of these rules, as shown by the continuous emission monitoring system, shall be reported by the owner or operator to the Air Pollution Control Officer within 96 hours, or such earlier time as may be required by Rule 404, UPSET CONDITIONS, BREAKDOWN AND SCHEDULED MAINTENANCE.
- 304.2.3 In the event of a breakdown of monitoring equipment, the owner or operator shall notify the Air Pollution Control Officer within 48 hours and shall initiate repairs. The owner or operator shall inform the Air Pollution Control Officer of the intent to shutdown any monitoring equipment at least 24 hours prior to the event.
- 304.2.4 Compliance with the subsections above, does not exempt the owner or operator from applicable provisions of Rule 404, UPSET CONDITIONS, BREAKDOWN AND SCHEDULED MAINTENANCE, the emergency provisions of Rule 507, FEDERAL OPERATING PERMIT PROGRAM, pursuant to 40 CFR 70.6(g), or the separate reporting requirements of other federal regulations to which the stationary source or emissions unit is subject.
- 304.3 If the Air Pollution Control Officer determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of a numerical emission standard infeasible, the Air Pollution Control Officer may instead prescribe a design, operational, or equipment standard. In such cases, the Air Pollution Control Officer may require the installation or modification of process monitoring devices such that the design characteristics or equipment will be properly maintained, or that the operational conditions will be properly performed, so as to continuously achieve the assumed degree of control. To the extent applicable, reporting requirements for process monitors shall be the same as for continuous emission monitoring systems.
- 304.4 A person operating or using a continuous emission monitoring system shall, upon written notice from the Air Pollution Control Officer, provide a summary of the data obtained from such systems. This summary of the data shall be in the form and manner prescribed by the Air Pollution Control Officer. The summary of data shall be available for public inspection at the office of the Air Pollution Control District. Records from the monitoring equipment shall be kept by the owner or

operator for a period of five (5) years, during which time they shall be available to the Air Pollution Control Officer in such form as he or she directs.

305 TRANSFER: An Authority to Construct or Permit to Operate shall only be transferable, whether by operation of law or otherwise, either from one location to another, from one piece of equipment to another, or from one person to another by means of an application for authorization in accordance with Section 403 of this rule.

306 PERMIT RENEWAL: Every Permit to Operate, except as specified below, shall be renewable annually on the permit's anniversary date, commencing one (1) year after the date of issuance.

306.1 Action to suspend or revoke the permit has been initiated and such action has resulted in a final determination to suspend or revoke the permit by the Air Pollution Control Officer or the Hearing Board and all appeals, or time for appeals, has been exhausted.

306.2 Fees applicable to the renewal of the permit(s) to operate have not been paid, as specified in Regulation 6, FEES.

306.3 The Air Pollution Control Officer shall review every Permit to Operate upon annual renewal, pursuant to Health and Safety Code Section 42301(e), to determine that permit conditions are adequate to ensure compliance with, and the enforceability of, District Rules and Regulations and state and federal laws and regulations applicable to the emission unit for which the permit was issued. Applicable District Rules and Regulations shall include those which were in effect at the time the permit was issued or modified, or which have subsequently been adopted and made retroactively applicable to an existing emission unit by the District Board of Directors. The Air Pollution Control Officer shall revise the conditions, if such conditions are not consistent, in accordance with these rules, regulations, and laws.

306.4 The Air Pollution Control Officer may establish an annual permit renewal date for all Permits to Operate held by a stationary source. Thereafter, Permits to Operate shall be renewable that same day and month of each succeeding year, subject to any other requirements of these Rules and Regulations and of state law, regarding validity, voiding or revocation of permits.

307 PERFORMANCE TESTING: Within sixty (60) days after achieving the maximum production rate or the maximum rate of emissions to which the source is limited by enforceable conditions, but not later than one hundred eighty (180) days after initial startup of such source, or as otherwise required by the Air Pollution Control Officer to determine continuous compliance with emission limitations or to confirm emission reductions claimed, the owner or operator of such source shall conduct performance test(s) in accordance with methods and under operating conditions as are approved by the Air Pollution Control Officer and furnish the Air Pollution Control Officer a written report of the results of such performance test(s) within 60 days of completion of such tests..

307.1 Such test(s) shall be at the expense of the owner or operator.

307.2 Testing shall be conducted with the source(s) of emissions operating at maximum capacity or other rate conforming to the maximum rate of emissions to which the source(s) are limited by enforceable condition(s).

- 307.3 The Air Pollution Control Officer may monitor such test and may also conduct performance tests.
- 307.4 The owner or operator of a source shall provide the Air Pollution Control Officer prior notice of the performance test to afford the Air Pollution Control Officer the opportunity to have an observer present. Notice shall be at least 15 days prior to the test, or as agreed to by the Air Pollution Control Officer.
- 307.5 The Air Pollution Control Officer may waive the requirement for performance tests if the owner or operator of a source has demonstrated by other means to the Air Pollution Control Officer's satisfaction that the source is being operated in compliance with all local, state, and federal regulations which are part of the California State Implementation Plan.

400 ADMINISTRATIVE REQUIREMENTS

- 401 POSTING:** A person who has been granted a Permit to Operate any emission unit described in Section 302 of this rule shall maintain a legible copy of said permit on the premises of the subject equipment. Other information, analysis, plans or specifications which disclose the nature, extent, quantity, or degree of air contaminants which are or may be discharged from such source shall be readily available for inspection by the Air Pollution Control Officer.
- 402 ALTERING OF PERMIT:** A person shall not willfully deface, alter, forge, counterfeit, or falsify a Permit to Operate any emission unit described in Section 302 of this rule. A permit amendment or revision requested by the owner or operator, other than an administrative permit, shall require the filing of an application. For an administrative permit amendment, a responsible official may implement the change addressed in the written request immediately upon submittal of the request. The Air Pollution Control Officer shall take final action no later than sixty (60) days after receiving the written request for an administrative permit amendment.
- 402.1 After verifying that the permit revision is an administrative permit amendment, the Air Pollution Control Officer may revise the permit without providing notice to the public or any affected state.
- 402.2 The Air Pollution Control Officer shall provide a copy of the revised permit to the responsible official
- 402.3 While the Air Pollution Control Officer need not make a completeness determination on a written request, the Air Pollution Control Officer shall notify the responsible official if the Air Pollution Control Officer determines that the permit cannot be revised as an administrative permit amendment.
- 403 APPLICATIONS:** An application for an Authority to Construct, Permit to Operate, change of ownership, or an application for a permit amendment, permit reopening, or revision shall be filed in the manner and form prescribed by the Air Pollution Control Officer, and shall give all the information necessary to enable the Air Pollution Control Officer to make the determinations required by Section 303 of this rule and other applicable District Rules and Regulations and state and federal laws and regulations.
- 403.1 A responsible official representing the owner or operator shall certify the truth, accuracy and completeness of application forms.
- 403.2 When the information submitted with the application is insufficient for the Air Pollution Control Officer to make the required determinations, upon the written

request of the Air Pollution Control Officer a responsible official shall supplement any complete application with additional information within the time frame specified by the Air Pollution Control Officer.

403.3 A responsible official shall promptly provide additional information in writing to the Air Pollution Control Officer upon discovery of submittal of any inaccurate information as part of the application or as a supplement thereto, or of any additional relevant facts previously omitted which are needed for accurate analysis of the application.

403.4 Intentional or negligent submittal of inaccurate information shall be reason for denial of an application.

403.5 An application for an Authority to Construct, Permit to Operate, or permit amendment or revision shall be accompanied by payment of the application filing fee specified in Regulation 6, FEES.

404 ACTION ON APPLICATIONS: The Air Pollution Control Officer shall notify the applicant in writing of his or her approval, conditional approval, suspension, or denial of the application for an Authority to Construct or Permit to Operate.

404.1 In the event said notification or notification of application completeness pursuant to Rule 502, NEW SOURCE REVIEW, is not received by applicant within 30 days of the filing of the application, or within 30 days of providing further information as required by Section 403, the applicant may, at his or her option, deem the application to construct or Permit to Operate denied.

404.2 Service of said notification may be made in person or by mail, and such service may be proved by the written acknowledgment of the person(s) served or affidavit of the person making the service.

405 CONDITIONAL APPROVAL: The Air Pollution Control Officer may issue an Authority to Construct or a Permit to Operate subject to conditions which will bring the operation of the emission unit within the standards of Section 303 of this rule. The conditions shall be specified in writing. Commencing work under such an Authority to Construct, or operation under such a Permit to Operate, shall be deemed acceptance of all the conditions so specified. The Air Pollution Control Officer shall issue an Authority to Construct or a Permit to Operate with revised conditions upon receipt of a new application, if the applicant demonstrates that the emission unit can operate under the revised conditions within the standards of Section 303 of this rule.

406 DENIAL OF APPLICATION: In the event of a denial of an Authority to Construct or Permit to Operate, the Air Pollution Control Officer shall notify the applicant in writing of the reasons therefore. Service of this notification may be made in person or by mail, and such service may be proved by the written acknowledgment of the person(s) served or affidavit of the person making the service. The Air Pollution Control Officer shall not accept a further application unless the applicant has complied with the objections specified by the Air Pollution Control Officer as his or her reasons for denial of the Authority to Construct or the Permit to Operate.

407 DISCLOSURE: The Air Pollution Control Officer, at any time, may require from an applicant, or holder of, any permit provided for in these rules and regulations, such information, analyses, plans, or specifications which will disclose the nature, extent, quality, or degree of air contaminants which are, or may be, discharged by the source for which the permit was issued or applied. The Air Pollution Control Officer may require that such disclosures be certified by a professional engineer registered in the State of

California. A responsible official representing the owner or operator shall certify the truth, accuracy and completeness of disclosures. Studies necessary to provide such information shall be at the expense of the owner or operator of the source for which a permit was issued or applied.

408 EMISSION STATEMENT: Upon the request of the Air Pollution Control Officer and as directed by the Air Pollution Control Officer, the owner or operator of any stationary source operation which emits or may emit oxides of nitrogen or reactive organic gas shall provide the Air Pollution Control Officer with a written statement, in accordance with Rule 503, EMISSION STATEMENT, showing actual emissions of oxides of nitrogen and reactive organic gas from that source.

409 SUSPENSION: The Air Pollution Control Officer may suspend a permit if a holder of such permit willfully fails and refuses to furnish information, analyses, plans, and specifications, within a reasonable time, as requested by the Air Pollution Control Officer pursuant to California Health and Safety Code Section 42303, District Rules and Regulations, or any other law, rule, regulation, agreement, or order enforceable by the District. The Air Pollution Control Officer shall serve notice, in writing, of such suspension and the reasons therefore. Service of said notification may be made in person or by mail, and such service may be proved by the written acknowledgment of the persons served or affidavit of the person making the service. The permit shall be reinstated when the Air Pollution Control Officer is furnished with all requested information, analyses, plans, and specifications.

410 CANCELLATION OF APPLICATION: An Authority to Construct or Permit to Operate application may be canceled by the Air Pollution Control Officer:

410.1 At the request of the applicant; or

410.2 If additional information has been requested of the applicant in accordance with Section 403 without the subsequent submittal of information within a reasonable time.

410.3 If applicable permit fees of Rule 601, PERMIT FEES are not paid when due the application may be cancelled and any issued Authority to Construct or Permit to Operate may be voided.

411 CANCELLATION OF PERMIT TO OPERATE: If, prior to the surrender of the operating permit, the Air Pollution Control Officer determines that the source or the emissions unit has been removed or fallen into an inoperable or un-maintained condition, the Air Pollution Control Officer may notify the owner of the intent to cancel the permit, providing the owner or operator with 30 days to respond. If the owner cannot demonstrate to the satisfaction of the Air Pollution Control Officer that the owner intended to operate again, or the owner does not respond within 30 days from the date a second noticing of the District's intent to cancel the permit is mailed by the District to the owner or operator, then the Air Pollution Control Officer may cancel the permit and deem the source or emissions unit shutdown as of the last known date the source or emissions unit discharged emissions.

411.1 The owner or operator may request an extension of time, in writing prior to the end of the sixty (60) day period following the initial notice, from the Air Pollution Control Officer.

411.2 The Air Pollution Control Officer may grant an extension of time not to exceed ninety (90) days.

411.3 The owner or operator may claim emissions reductions resulting from the shutdown in accordance with the provisions of Rule 504, EMISSION REDUCTION CREDITS, prior to the end of the sixty (60) day period following the initial notice, or prior to the expiration of an extension.

411.4 The Air Pollution Control Officer shall advise, in writing, the owner or operator of the stationary source or emissions unit for which a permit is canceled of the cancellation decision.

411.5 The owner or operator may appeal the decision to cancel the permit pursuant to Section 413 of this rule.

412 TEMPORARY PERMIT: The Air Pollution Control Officer may issue a temporary Permit to Operate. The temporary Permit to Operate shall specify a reasonable period of time during which the emission unit may be operated in order for the District to determine whether it will operate in accordance with the conditions specified in the permit.

413 APPEALS: Within ten days after notice, by the Air Pollution Control Officer, of cancellation, suspension, denial, or conditional approval of an Authority to Construct, Permit to Operate, or emissions reduction credit application, the applicant or any other aggrieved person who participated in the permit issuance proceedings may petition the Hearing Board, in writing, for an order modifying or reversing that decision. The Hearing Board after public notice and a public hearing held within thirty days after filing the petition, may sustain or reverse the action of the Air Pollution Control Officer; such order may be made subject to specified conditions.

500 MONITORING AND RECORDS

501 TESTING PROCEDURES:

501.1 General Requirements: Except as otherwise specified in the District Rules and Regulations, the State Implementation Plan, and the applicable federal requirements of Rule 507, FEDERAL OPERATING PERMIT PROGRAM, testing methods for determining compliance with emission limits shall be:

501.1.1 The appropriate methods adopted by the California Air Resources Board and cited in Title 17, California Code of Regulations, Division 3, Subchapter 8, Compliance with Non-vehicular Emission Standards; or

501.1.2 The appropriate methods of 40 CFR part 50, Appendix M, Recommended Test Methods for State Implementation Plans; or

501.1.3 Any appropriate method of 40 CFR part 60, Appendix A, Test Methods; or

501.1.4 An alternative method following review and approval of that method by the California Air Resources Board and US Environmental Protection Agency.

501.2 Initial Boiling Point: ASTM D-1078-86, "Test Method for Distillation Range of Volatile Organic Liquids".

501.3 Vapor Pressure: ASTM D-2879-86, "Vapor Pressure-Temperature Relation and Initial Decomposition Temperature of Liquids by Isoteniscope".

502 MONITORING: As applicable, each emission source subject to the requirements of Section 301 and 302 shall comply with the following monitoring requirements:

502.1 The requirements of Title 40, Code of Federal Regulations, Part 60, Appendix B and F.

502.2 The applicable federal requirements for monitoring of Title V of the Federal Clean Air Act as amended in 1990 (42 U.S.C. Section 7401 et seq.).

503 RECORDKEEPING:

503.1 The following records shall be maintained and provided to the Air Pollution Control Officer upon request.

503.1.1 Emissions monitoring and process data records necessary for the determination and reporting of emissions, in accordance with applicable provisions of the District Rules and Regulations, shall be maintained. Records shall be kept for at least two years and shall be kept 5 years for sources subject to the applicable requirements of Title V and Rule 507, FEDERAL OPERATING PERMIT PROGRAM.

503.1.2 Other records of the nature and amounts of emissions or any other information as may be deemed necessary by the Air Pollution Control Officer to determine whether the stationary source or emissions unit is in compliance with applicable emission limitations, credited emission reductions, exemptions from rule provisions, or other requirements. The information must include emission measurements, continuous emission monitoring system performance testing measurements, performance evaluations, calibration checks and adjustments, maintenance performed on such monitoring systems, and other records and reports required by Title 40, Code of Federal Regulations, Part 60, Appendix B and F.

503.1.3 Operation and maintenance plans shall be submitted to the District for all add-on capture and control equipment for review and approval by the Air Pollution Control Officer. Such plans shall demonstrate, though the use of specific recordkeeping requirements, continuous operation of the add-on control equipment when emission producing operations are occurring. The plan shall also specify records to be kept to document the performance of required periodic maintenance. Records shall be consistent with compliance time frames and employ the most recent US Environmental Protection Agency recordkeeping guidance.

503.2 The Air Pollution Control Officer may require recordkeeping to verify or maintain any exemption.

RULE 502 NEW SOURCE REVIEW

Adopted 11-12-74

(Amended 05-24-77, 06-19-79, 09-21-93, 11-03-94, 08-09-01, 12-09-04,
rescinded and re-adopted 2-11-10, amended 10-13-11, 8-8-13)

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100 GENERAL

101 PURPOSE: The purpose of this rule is to provide for the review of new and modified stationary air pollution sources and to provide mechanisms, including emission offsets, by which authorities to construct for such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards.

102 APPLICABILITY: This rule shall apply to all new stationary sources and emissions units and all modifications to existing stationary sources and emissions units that, after construction, emit or may emit any NSR regulated pollutant within the District.

If any source or modification becomes a major source or major modification solely by virtue of the relaxation of any limitation that was established after August 7, 1980, on the capacity of the source or modification to emit a federal nonattainment pollutant or its precursor such as a restriction on hours of operation, then the requirements of this rule shall apply to such a source or modification as though construction had not yet commenced on the source or modification.

This rule shall not apply to prescribed burning of forest, agriculture or range land; open burning in accordance with District Regulation 3, OPEN BURNING; road construction, or any non-point source common to timber harvesting or agricultural practices.

The regulations in effect at the time any application for an Authority to Construct for a new or modified source is deemed complete shall apply to that source except when a new federal requirement not yet incorporated into this Rule applies to the new or modified source.

103 PUBLIC NOTIFICATION REQUIREMENTS: The public notice requirements of Sections 406 and 407 shall apply if the project is for a new or modified stationary source or emissions unit for which offsets are required pursuant to Section 303.1, and to all new or modified stationary sources that are projected to emit increased actual lead emissions at a rate of 5 tons per year or greater.

200 DEFINITIONS: The following definitions apply for all terms used in this Rule. If a term is not defined below, then the definitions provided in Rule 102, DEFINITIONS, and Rule 504, EMISSIONS REDUCTION CREDITS, apply in that hierarchical order.

201 ACTUAL EMISSIONS: Emissions having occurred from a source, based on source test and actual fuel consumption or process data, or monitoring data. If source test or monitoring data is not available, other appropriate, APCO-approved, emission factors may be used. Fugitive emissions associated with the emissions unit shall be included in the actual emissions of the emissions unit.

202 ACTUAL EMISSIONS REDUCTIONS (AER): The decrease of actual emissions, compared to Baseline Actual Emissions, from an emissions unit. AER shall be real, federally enforceable, quantifiable, surplus, and permanent.

203 ACTUAL INTERRUPTIONS OF ELECTRICAL POWER: When electrical service is interrupted by an unforeseeable event.

204 ALLOWABLE EMISSIONS: The emissions rate of a stationary source calculated using the maximum rated capacity of the source (unless the source is subject to federally enforceable limits which restrict the operating rate, hours of operation, or both) and the most stringent of the following:

204.1 Any applicable standards set forth in these regulations and 40 CFR Part 60, 61, or 63;

- 204.2 Any applicable emission limitation in the State Implementation Plan (SIP), including those with a future compliance date; or
- 204.3 The emissions rate specified as a federally enforceable permit condition, including those with a future compliance date.
- 205 AMBIENT AIR QUALITY STANDARDS:** There are both State and federal ambient air quality standards. For the purpose of submittal to the U.S. Environmental Protection Agency for inclusion in the California State Implementation Plan all references in this rule to Ambient Air Quality Standards shall be interpreted as National Ambient Air Quality Standards.
- 206 BASELINE ACTUAL EMISSIONS (BAE):**
- 206.1 "Baseline Actual Emissions" are the actual emissions for the existing emissions unit averaged over the consecutive two (2) year period immediately preceding the date of the application. If the last two years are unrepresentative of normal source operations as determined by the APCO, then any other 2 consecutive year period during the last five years which the APCO determines represents normal source operations may be used.
- 206.2 If, at any time during the 2 year period, actual emissions exceeded allowable emission levels, then actual emissions shall be reduced to reflect emission levels that would have occurred if the unit were in compliance with all applicable limitations and rules.
- 206.3 Where an emissions unit has been in operation for less than 2 years, a shorter averaging period of at least 12 months may be used, provided that the averaging period is representative of the full operational history of the emissions unit. If less than 12 months has passed since the date of issuance of the Permit to Operate then Actual Emissions shall be used as the Baseline Actual Emissions.
- 207 BEGIN ACTUAL CONSTRUCTION:** Initiation of physical on-site construction activities on an emissions unit which is of a permanent nature. Such activities include, but are not limited to, installation of building supports and foundations, laying of underground pipe work, and construction of permanent storage structures. With respect to a change in method of operation that does not involve a physical change, this term refers to those on-site activities, other than preparatory activities, which mark the start of the change in the method of operation.
- 208 BEST AVAILABLE CONTROL TECHNOLOGY (BACT):** The most stringent emission limitation or control technique of the following:
- 208.1 Achieved in practice for such category and class of source; or
- 208.2 Contained in any SIP approved by the EPA for such category and class of source. A specific limitation or control technique shall not apply if the owner of the proposed emissions unit demonstrates to the satisfaction of the APCO that such a limitation or control technique is not presently achievable; or
- 208.3 Contained in an applicable federal New Source Performance Standard; or
- 208.4 Any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources.

- 209 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA):** The California Environmental Quality Act, Public Resources Code, Section 21000, et seq.
- 210 CLASS I AREA:** Any area listed as Class I in 40 CFR 81.405 or an area otherwise specified as Class I in the legislation that creates a national monument, a national primitive area, a national preserve, a national recreational area, a national wild and scenic river, a national wildlife refuge, a national lakeshore or seashore. The only designated Class I area within 20 miles of Placer County as of October 13, 2011 was Desolation Wilderness Area in El Dorado County.
- 211 COMMENCE:** As applied to construction of a major stationary source or major modification means that the owner or operator has all necessary preconstruction approvals or permits and either has:
- 211.1 Begun, or caused to begin, a continuous program of actual on-site construction of the source, to be completed within a reasonable time; or
- 211.2 Entered into binding agreements or contractual obligations, which cannot be canceled or modified without substantial loss to the owner or operator, to undertake a program of actual construction of the source to be completed within a reasonable time.
- 212 CARGO CARRIERS:** Cargo carriers are trains dedicated to a specific source.
- 213 CONSTRUCTION:** Means any physical change or change in the method of operation (including fabrication, erection, installation, demolition, or modification of an emissions unit) which would result in a change in actual emissions.
- 214 CONTIGUOUS PROPERTY:** Two or more parcels of land with a common point or boundary or separated solely by a public roadway or other public right-of-way.
- 215 COST-EFFECTIVE:** A cost per unit of emissions reduction which is lower than or equivalent to the maximum unit costs of the same emissions reduction through the use of Best Available Control Technology, calculated in current year dollars, in accordance with methodology and criteria specified in guidelines developed by the District.
- 216 EMERGENCY ENGINES:** A stationary engine that meets the criteria specified below:
- 216.1 It is installed for the primary purpose of providing electrical power or mechanical work for emergency use and is not the source of primary power at the facility; and
- 216.2 It is operated to provide electrical power or mechanical work during any emergency use; and
- 216.3 It is operated no more than 100 hours per year for maintenance and testing, emissions testing or initial start-up testing. Diesel engines may be further limited by the California Air Resources Board's Airborne Toxic Control Measure for Stationary Compression Engines in Section 93115.6(a)).
- 217 EMERGENCY USE:** The providing of electrical power or mechanical work during any of the following events.
- 217.1 The failure or loss of all or part of normal electrical power service or normal natural gas supply to the facility, or the failure of a facility's internal power distribution system:

- 217.1.1 Which is caused by any reason other than the adherence to a contractual obligation the owner or operator has with a third party or any other party; and
- 217.1.2 Which is demonstrated by the owner or operator, to the APCO's satisfaction, to have been beyond the reasonable control of the owner or operator.
- 217.2 The pumping of water or sewage to prevent or mitigate a flood or sewage overflow.
- 217.3 The pumping of water for fire suppression or protection.
- 217.4 The powering of ALSF-1 or ALSF-2 airport runway lights under category II or III weather conditions.
- 217.5 The pumping of water to maintain pressure in the water distribution system for the following reasons:
 - 217.5.1 A pipe break that substantially reduces water pressure; or
 - 217.5.2 High demand on the water supply system due to high use of water for fire suppression; or
 - 217.5.3 The breakdown of electric-powered pumping equipment at sewage treatment facilities or water delivery facilities.
- 217.6 The emergency operation of ski lifts during an actual interruption of normal electrical power service to the facility.
- 218 EMISSION DECREASE:** Any modification that would result in an emission decrease of actual emissions.
- 219 EMISSION REDUCTION CREDITS (ERC):** Reductions of actual emissions from emission units that are certified by an air district in accordance with that district's rules and are issued by the air district in the form of ERC certificates.
- 220 EMISSIONS LIMITATION:** One or more federally enforceable permit conditions specific to an emissions unit that restricts its maximum emissions, at or below the emissions associated with the maximum design capacity; and that is contained in the latest Authority to Construct or enforceable by the latest Permit to Operate for the emission unit.

Emissions limitations should be stated in a manner consistent with testing procedures. They may be expressed as an enforceable design, operational, or equipment standard.
- 221 EMISSIONS UNIT:** An identifiable operation or piece of process equipment such as an article, machine, or other contrivance which controls, emits, may emit, or results in the emissions of any air pollutant directly or as fugitive emissions.
- 222 FEDERALLY ENFORCEABLE:** All limitations and conditions which are enforceable by the EPA administrator, including those requirements developed pursuant to 40 CFR parts 60, 61 and 63, requirements within the California State Implementation Plan (SIP), any permit requirements established pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR part 51, subpart I, including operating permits issued under an EPA-approved program that is incorporated into the SIP and expressly requires adherence to any permit issued under such program.

- 223 FUGITIVE EMISSIONS:** Those emissions that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening.
- 224 FUNCTIONALLY EQUIVALENT EMISSION UNIT:** An emission unit that serves the identical function as the unit being replaced. The maximum rating and the potential to emit any pollutant shall not be greater from the functionally equivalent emission unit than the replaced unit. The emission increase from any such replacement shall not result in a major modification.
- 225 HALOGENATED HYDROCARBONS:** For the purposes of this rule, halogenated hydrocarbons are the following:
- 225.1 1,1,1-trichloroethane
 - 225.2 methylene chloride
 - 225.3 2,2-dichloro-1,1,1-trifluoroethane (HCFC-123)
 - 225.4 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
 - 225.5 trichlorofluoromethane (CFC-11)
 - 225.6 dichlorodifluoromethane (CFC-12)
 - 225.7 1,1,1-trichloro-2,2,2-trifluoroethane (CFC-113)
 - 225.8 1-chloro-1,1-difluoro-2-chloro-2,2-difluoroethane (CFC-114)
 - 225.9 chloropentafluoroethane (CFC-115)
 - 225.10 pentafluoroethane (HFC-125)
 - 225.11 1,1,2,2-tetrafluoroethane (HFC-134)
 - 225.12 tetrafluoroethane (HFC-134a)
 - 225.13 1,1-dichloro-1-fluoroethane (HCFC-141b)
 - 225.14 1-chloro-1,1-difluoroethane (HCFC-142b)
 - 225.15 1,1,1-trifluoroethane (HFC-143a)
 - 225.16 chlorodifluoromethane (HCFC-22)
 - 225.17 trifluoromethane (HFC-23)
 - 225.18 1,1-difluoroethane (HFC-152a)
 - 225.19 The following four classes of perfluorocarbon compounds:
 - a. Cyclic, branched, or linear, completely fluorinated alkanes.
 - b. Cyclic, branched, or linear, completely fluorinated ethers, with no unsaturations.
 - c. Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations.
 - d. Sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.
 - e. Perfluorocarbon compounds will be assumed to be absent from a product or process unless a manufacturer or facility operator identifies the specific individual compounds (from the broad classes of perfluorocarbon compounds) and the amounts present in the product or process and provides a validated test method which can be used to quantify the specific compounds.
- 226 HAZARDOUS AIR POLLUTANT (HAP):** Any air pollutant listed pursuant to Section 112(b) of the Federal Clean Air Act as amended in 1990 (42 U.S.C. Section 7401 et seq.).
- 227 HISTORIC ACTUAL EMISSIONS (HAE):** Historic Actual Emissions shall be calculated for each pollutant.
- 227.1 For a new emissions unit Historic Actual Emissions are equal to zero.
 - 227.2 For an existing emissions unit, Historic Actual Emissions equals either, in hierarchical order;

227.2.1 The federally enforceable potential to emit (PTE) limit contained in the most recent Authority to Construct or Permit to Operate, if actual emissions are at least 80% of the permitted PTE limit, or

227.2.2 The federally enforceable PTE limit contained in the most recent Authority to Construct or Permit to Operate, if the emission unit was fully offset for any emission increases incurred since September 21, 1993, within the 5 year period prior to the date of application for the current project, or

227.2.3 The Baseline Actual Emissions.

- 228 IDENTICAL EMISSION UNIT:** A replacement emissions unit which is the same as the original unit in all respects except for serial number.
- 229 LAKE TAHOE AIR BASIN:** Established pursuant to Section 39606 of the Health & Safety Code of the State of California and as described in Title 17, California Code of Regulations, Section 60113 (b), the basin includes that portion of Placer County within the drainage area naturally tributary to Lake Tahoe including said Lake, plus that area in the vicinity of the head of the Truckee River described as follows: commencing at the point common to the aforementioned drainage area crest line and the line common to Townships 15 North and 16 North, Mount Diablo Base and Meridian (M.D.B. & M.), and following that line in a westerly direction to the northwest corner of Section 3, Township 15 North, Range 16 East, (M.D.B. & M.), thence south along the west line of Sections 3 and 10, Township 15 North, Range 16 East, M.D.B. & M., to the intersection with the drainage crest line, thence following the said drainage area boundary in a southwesterly, then northeasterly direction to and along the Lake Tahoe Dam, thence following the said drainage area crest line in a northeasterly, then northwesterly direction to the point of beginning. This Air Basin is delineated on an official map on file at the California Air Resources Board Headquarters Office.
- 230 MAJOR STATIONARY SOURCE – SACRAMENTO AIR BASIN:** A stationary source which emits or has the potential to emit: 25 tons per year (tpy) or more of nitrogen oxides or reactive organic compounds, or 100 tpy or more of sulfur oxides, or PM2.5. In addition, any physical change occurring at a stationary source not otherwise qualifying as a major stationary source, which would constitute a major stationary source by itself, makes the source a major stationary source.
- 231 MAJOR STATIONARY SOURCE – MOUNTAIN COUNTIES AIR BASIN:** A stationary source which emits or has the potential to emit 25 tons per year (tpy) or more of nitrogen oxides or reactive organic compounds. In addition, any physical change occurring at a stationary source not otherwise qualifying as a major stationary source, which would constitute a major stationary source by itself, makes the source a major stationary source.
- 232 MAJOR MODIFICATION:** A modification to a major stationary source in the Sacramento or Mountain Counties Air Basins which results in a significant emissions increase of the pollutant for which the source is classified as a major stationary source. For nitrogen oxides and reactive organic compounds, the increase shall be aggregated with all other increases and decreases in potential to emit over the period of the four consecutive years before the application for modification, plus the calendar year of the most recent application.
- 233 MODIFICATION:** Any physical change, change in method of operation (including change in fuel characteristics), addition to, or any change in hours of operation, or change in production rate of, which:

- 233.1 For an emissions unit: would necessitate a change in permit conditions, permit equipment description, or emissions limitation.
- 233.2 For a stationary source: is a modification of any emissions unit, or addition of any new emissions unit.
- 233.3 Unless previously limited by a permit condition and that permit condition must be changed, the following shall not be considered a modification:
- 233.3.1 A change in ownership.
- 233.3.2 Routine maintenance and repair, or an identical replacement.
- 233.3.3 The addition of a continuous emission monitoring system.
- 233.3.4 The replacement of air pollution control equipment with new control equipment if the actual emissions of the new equipment are less than or equal to those from the original piece of equipment and the replacement is not a major modification under the United States Environmental Protection Agency (EPA) regulations promulgated pursuant to Title I of the Federal Clean Air Act, including 40 CFR Part 51.
- 233.3.5 Use of an alternative fuel or raw material by reason of an order under Sections 2(a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation), or by reason of a natural gas curtailment plan pursuant to the Federal Power Act.
- 233.3.6 Use of an alternative fuel by reason of an order or rule under Section 125 of the Act.
- 233.4 A reconstructed stationary source or emissions unit shall be treated as a new stationary source or emissions unit, not as a modification.
- 234 MOUNTAIN COUNTIES AIR BASIN:** Established pursuant to Section 39606 of the Health & Safety Code of the State of California and as described in Title 17, California Code of Regulations, Section 60111 (I), the Mountain Counties Air Basin includes all of Placer County except that portion included in the Lake Tahoe Air Basin, defined by 17 CCR 60113(b), and that portion included in the Sacramento Valley Air Basin, defined by 17 CCR 60106(k).
- 235 NECESSARY PRECONSTRUCTION APPROVALS OR PERMITS:** Federal air quality control laws and regulations and those air quality control laws and regulations which are part of the SIP.
- 236 NONATTAINMENT POLLUTANT:** Any pollutant as well as any precursors of such pollutants which have been designated "nonattainment" by the U.S. Environmental Protection Agency as codified in 40 CFR 81.305, or which has been designated nonattainment by the California Air Resources Board pursuant to Section 39607 of the Health and Safety Code for specific air basins in Placer County.
- 237 NSR REGULATED POLLUTANT:** A pollutant for which an Ambient Air Quality Standard has been established by the EPA or by the California Air Resources Board (ARB), and the precursors to such pollutants, including, but not limited to, reactive organic compounds (ROC), nitrogen oxides (NOx), sulfur oxides (SOx), PM10, PM2.5, carbon monoxide (CO) and lead.

- 238 PM2.5:** Particulate matter with an aerodynamic diameter smaller than or equal to a nominal 2.5 microns. Gaseous emissions which condense to form PM2.5 shall also be counted as PM2.5.
- 239 PM10:** Particulate matter with an aerodynamic diameter smaller than or equal to a nominal 10 microns. Gaseous emissions which condense to form PM10 shall also be counted as PM10.
- 240 PORTABLE EQUIPMENT:** Equipment that is periodically relocated and is not operated more than a total of 180 days at any one location in the District within any continuous twelve (12) month period.
- 241 POTENTIAL TO EMIT (PTE):** The maximum physical and operational design capacity to emit an air pollutant. Any limitation on the physical or operational design capacity, including emission control devices and restrictions on hours of operation, or on the type, or amount of material combusted, stored, or processed, may be considered as part of the design only if the limitation, or the effect it would have on emissions, is incorporated into the Authority to Construct as a federally enforceable permit condition. Fugitive emissions associated with the emissions unit or stationary source shall be included in the potential to emit of the emissions unit or stationary source.
- 242 PRECURSOR:** A pollutant that, when emitted into the atmosphere, may undergo either a chemical or physical change which then produces another pollutant for which an Ambient Air Quality Standard has been adopted, or whose presence in the atmosphere will contribute to the violation of one or more Ambient Air Quality Standards. The following precursor-secondary air contaminant relationships shall be used for the purposes of this rule:

Precursor	Secondary Air Contaminant
Reactive Organic Compound	a. Photochemical oxidants (Ozone) b. Organic fraction of PM10
Nitrogen Oxides	a. Nitrogen dioxide b. Nitrate fraction of PM10 c. Nitrate fraction of PM2.5 d. Photochemical oxidants (Ozone)
Sulfur Oxides	a. Sulfur dioxide b. Sulfates c. Sulfate fraction of PM10 d. Sulfate fraction of PM2.5

- 243 PREVENTION OF SIGNIFICANT DETERIORATION (PSD):** A federal permitting program for new and modified major stationary sources of air pollution for pollutants that do not exceed National Ambient Air Quality Standards.
- 244 PRIORITY RESERVE BANK:** A depository for preserving emission reduction credits pursuant to Rule 505, PRIORITY RESERVE.
- 245 PROPOSED EMISSIONS:** Emissions based on the potential to emit for the new or modified emissions unit which will be incorporated into the permit as federally enforceable permit conditions.
- 246 QUARTERLY:** Calendar quarters beginning January 1, April 1, July 1, and October 1.
- 247 QUARTERLY EMISSION LIMITATION:** One or a combination of permit conditions specific to an emissions unit that restricts its maximum emissions, in pounds per quarter, at or below the emissions associated with the maximum design capacity. A quarterly emissions limitation must be:

- 247.1 Contained in the latest Authority to Construct or enforceable by the latest Permit to Operate for the emissions unit, and
- 247.2 Enforceable on a quarterly basis.
- 248 **REACTIVE ORGANIC COMPOUND:** For the purposes of this rule, reactive organic compound (ROC) has the same definition as volatile organic compound (VOC) in Rule 102, DEFINITIONS.
- 249 **RECONSTRUCTED SOURCE:** Any stationary source or emissions unit undergoing physical modification where the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost of a comparable entirely new stationary source or emissions unit. Fixed capital cost means that capital needed to provide all the depreciable components. A reconstructed source shall be treated as a new stationary source or emissions unit.
- 250 **REDUCED SULFUR COMPOUNDS:** The sulfur compounds hydrogen sulfide, carbon disulfide and carbonyl sulfide.
- 251 **REPLACEMENT EMISSION UNIT:** An emissions unit for which all the criteria listed below are met. No creditable emission reductions shall be generated from shutting down the existing emissions unit that is replaced unless:
- 251.1 The emissions unit is a reconstructed unit within the meaning of 40 CFR 60.15(b)(1), or the emissions unit completely takes the place of an existing emissions unit, or
- 251.2 The emissions unit is an identical emission unit or a functionally equivalent emission unit, or
- 251.3 The replacement does not alter the basic design parameters of the process unit, and
- 251.4 The replaced emissions unit is permanently removed from the stationary source, otherwise permanently disabled, or permanently barred from operation by a permit that is federally enforceable. If the replaced emissions unit is brought back into operation, it shall constitute a new emissions unit.
- 252 **SACRAMENTO VALLEY AIR BASIN:** Established pursuant to Section 39606 of the Health & Safety Code of the State of California and as described in Title 17, California Code of Regulations, Section 60106(k), the basin includes that portion of Placer County which lies west of Range 9 east, Mount Diablo Base and Meridian (M.D.B. & M.).
- 253 **SIGNIFICANT:** In reference to an emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:
- 253.1 Carbon monoxide: 100 tpy;
- 253.2 Nitrogen oxides: 25 tpy;
- 253.3 Sulfur dioxide: 40 tpy;
- 253.4 Ozone: 25 tpy of VOCs or 25 tpy of nitrogen oxides;
- 253.5 PM10: 15 tpy

- 253.6 PM2.5: 10 tpy of direct PM2.5 emissions or 40 tpy of sulfur dioxide emissions or 40 tpy of nitrogen oxide emissions
- 253.7 Lead: 0.6 tpy.
- 254 SIGNIFICANT EMISSIONS INCREASE:** For a regulated NSR pollutant, an increase in emissions that is significant for that pollutant.
- 255 STATIONARY SOURCE (SOURCE OR FACILITY):** Any building, structure, facility, or emissions unit that emits or may emit any NSR regulated pollutant directly or as fugitive emissions.
- 255.1 Building, structure, facility, or emissions unit includes all pollutant emitting activities which:
- 255.1.1 belong to the same industrial grouping, and;
- 255.1.2 are located on one property or on two or more contiguous properties, and;
- 255.1.3 are under the same or common ownership, operation, or control or which are owned or operated by entities which are under common control.
- 255.2 Pollutant emitting activities shall be considered as part of the same industrial grouping if:
- 255.2.1 they belong to the same two digit standard industrial classification code under the system described in the 1987 Standard Industrial Classification Manual, or;
- 255.2.2 they are part of a common production process. (Common production process includes industrial processes, manufacturing processes and any connected processes involving a common material.)
- 255.3 The emissions of cargo carriers associated with the stationary source shall be considered emissions from the stationary source to the extent that emission reductions from these cargo carriers are proposed as offsets.
- 256 STATIONARY SOURCE PTE:** The sum of the PTE for each emission unit which has been issued a Permit to Operate, Authority to Construct or for which an application has been submitted. Any fugitive emissions from such emission units shall be included in this calculation.
- 257 SURPLUS:** The amount of emission reductions that are, at the time of generation of an Emissions Reduction Credit (ERC), not otherwise required by federal, state, or local law, not required by any legal settlement or consent decree, and not relied upon to meet any requirement related to the California State Implementation Plan (SIP). However, emission reductions required by a state statute that provides that the subject emission reductions shall be considered surplus may be considered surplus for purposes of this Rule if those reductions meet all other applicable requirements.
- Examples of federal, state, and local laws, and of SIP-related requirements, include, but are not limited to, the following:
- 257.1 The federally-approved California SIP;

- 257.2 Other adopted state air quality laws and regulations not in the SIP, including but not limited to, any requirement, regulation, or measure that: (1) the District or the state has included on a legally-required and publicly-available list of measures that are scheduled for adoption by the District or the State in the future; or (2) is the subject of a public notice distributed by the District or the State regarding an intent to adopt such revision;
- 257.3 Any other source- or source-category specific regulatory or permitting requirement, including, but not limited to, Reasonable Available Control Technology (RACT), New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), Best Available Control Measures (BACM), Best Available Control Technology (BACT), and the Lowest Achievable Emission Rate (LAER); and
- 257.4 Any regulation or supporting documentation that is required by the federal Clean Air Act but is not contained or referenced in 40 C.F.R. Part 52, including but not limited to: assumptions used in attainment and maintenance demonstrations (including Reasonable Further Progress demonstrations and milestone demonstrations), including any proposed control measure identified as potentially contributing to an enforceable near-term emissions reduction commitment; assumptions used in conformity demonstrations; and assumptions used in emissions inventories.
- 258 **TEMPORARY SOURCE:** Temporary emission sources such as pilot plants, and portable facilities which will be terminated or located outside the District after less than a cumulative total of 90 days of operation in any 12 continuous months.
- 259 **TOTAL REDUCED SULFUR COMPOUNDS:** The sulfur compounds hydrogen sulfide, methyl mercaptan, dimethyl sulfide and dimethyl disulfide.

300 STANDARDS

- 301 **EMISSION AND OFFSET CALCULATIONS:** The following provisions shall be used to calculate emission increases and decreases from all new and modified emissions units located at a stationary source.
- 301.1 **BACT – Emissions Increase:** The emissions increase for each emissions unit related to the project for the purposes of determining BACT applicability shall be calculated as the proposed emissions minus the Baseline Actual Emissions. Calculations shall be performed separately for each emissions unit for each calendar quarter.
- 301.2 **Offsets - Emissions Increase or Decrease:** The emissions increase or decrease for each emissions unit related to the project for the purposes of determining Offset applicability shall be calculated as the proposed emissions, minus the Historic Actual Emissions. Emission increases or decreases shall be calculated for each emission unit and the project as a whole.
- 301.3 **Project Emissions:** If a project consists of more than one emission unit, the total emissions from all emissions units shall be summed for each pollutant to determine the emissions increase for the project. The project includes the entire scope of the preconstruction application for a new or modified stationary source.
- 301.4 **Calculation Periods:** The emissions increase or decrease for a project shall be calculated on a daily, quarterly and annual basis for each pollutant.

- 301.5 Potential To Emit - Stationary Sources: The potential to emit of a new or modified stationary source shall be calculated as the sum of the potential to emit, including fugitive emissions, for all emissions units, based on emission limitations established by current Permits to Operate, Authorities to Construct where permits to operate have not been issued, and the pending application.
- 301.6 Quantity of Offsets Required For New Major Sources or Major Modifications: If offsets are required pursuant to Section 303.2, the quantity of offsets to be provided shall be determined by calculating the emission increase for the project and applying the appropriate offset ratio based on pollutant and location as specified in Section 303.3. The calculations shall be performed separately for each pollutant and each emissions unit for each calendar quarter.
- 301.7 Quantity of General (State) Offsets Required: If offsets are required pursuant to Section 303.1, the quantity of offsets to be provided shall be determined as follows:
- 301.7.1 If offsets have already been provided by a stationary source for a particular pollutant, then multiply the emission increase calculated for the project by the appropriate offset ratio based on pollutant and location as specified in Section 303.3, or
- 301.7.2 If no offsets have been provided previously by a stationary source for a particular pollutant, then subtract the offset threshold specified in Section 303.1 for that pollutant from the stationary source PTE and multiply the value by the appropriate offset ratio based on pollutant and location as specified in Section 303.3.
- 301.8 Quantity of Offsets Required For A Modification That Makes An Existing Source A Major Stationary Source: When the proposed modification will make an existing minor source a new major source, offsets required shall be calculated as the sum of proposed PTE for all emissions units installed after September 21, 1993 based on current permits to operate and Authority to Construct where permits to operate have not been issued, plus the pending application, minus offsets supplied since September 21, 1993. Calculations shall be performed separately for each pollutant and each emissions unit for each calendar quarter. The offset ratios of Section 303.3 shall be applied to determine the ERCs required.
- 302 REQUIREMENT TO APPLY BEST AVAILABLE CONTROL TECHNOLOGY:** An applicant shall apply Best Available Control Technology (BACT) to a new emissions unit or modification of an existing emissions unit, except cargo carriers, if the change would result in an increase in quarterly emissions of a NSR regulated pollutant from the new or modified emissions unit and if the PTE of the new or modified emissions unit equals or exceeds the levels specified below.

<u>Pollutant</u>	<u>lb/day</u>
Reactive organic compounds	10
Nitrogen oxides	10
Sulfur oxides	80
PM10	80
PM2.5	80
Carbon monoxide	550
Lead	3.3
Vinyl chloride	5.5
Sulfuric acid mist	38
Hydrogen sulfide	55

Total reduced sulfur compounds	55
Reduced sulfur compounds	55

303 OFFSET REQUIREMENTS

- 303.1 General Requirement to Provide Offsets: An applicant whose facility is located in the Sacramento Valley Air Basin or the Mountain Counties Air Basin shall provide offsets for a NSR regulated pollutant if the potential to emit of a new or modified source exceeds either of the threshold quantities listed below:

<u>Pollutant</u>	<u>Pounds per quarter</u>	<u>Tons per year</u>
Reactive organic compounds	5,000	10
Nitrogen oxides	5,000	10
Sulfur oxides	13,750	27.5
PM10	7,500	15
PM2.5	7,500	15
Carbon monoxide	49,500	99

- 303.2 Major Source or Major Modification Requirement to Provide Offsets: An applicant whose facility is located in the Sacramento Valley Air Basin or the Mountain Counties Air Basin, and whose project emissions will result in a new major source or major modification, shall provide offsets for each NSR regulated pollutant that constitutes a major source or major modification.

- 303.3 Location of Offsets and Offset Ratios: The applicable offset ratio shall be determined based on the location of the new or modified stationary source required to provide offsets and the distance to the location of the emission offsets, as indicated in the following table.

<u>Location of Offset</u>	<u>Offset Ratio</u>	<u>Offset Ratio</u>
	<u>NOx and ROC</u>	<u>Other Pollutants</u>
Same Source	1.0 to 1.0	1.0 to 1.0
Within 15-Mile radius and within the same air basin	1.3 to 1.0	1.2 to 1.0
Greater than 15-Miles but within 50-Mile radius within the same air basin	1.5 to 1.0	1.5 to 1.0
Greater than 50-Mile radius and within the same air basin	Greater than 1.5 to 1.0	Greater than 1.5 to 1.0

- 303.3.1 The APCO may impose, based on the air quality analysis, a higher offset ratio such that the new or modified stationary source will not prevent or interfere with the attainment or maintenance of any ambient air quality standard.

- 303.3.2 Applicants providing offsets obtained pursuant to Rule 505, PRIORITY RESERVE, shall be subject to an offset ratio of 1.2 to 1.0 for all pollutants, except NOx and VOC, at all distances. The offset ratio for NOx and VOC offsets obtained pursuant to Rule 505, PRIORITY RESERVE, shall be subject to an offset ratio of 1.3 to 1.0 at all distances.

303.4 General Offset Provisions

- 303.4.1 All offsets shall be real, surplus, federally enforceable, quantifiable and permanent.

- 303.4.2 All offsets provided for major sources and major modifications shall be surplus at the time ERCs are surrendered to the District.
- 303.4.3 All offsets shall be surrendered to the District prior to the initial startup of the new or modified source, and the offsets shall be maintained throughout the operation of the new or modified source which is the beneficiary of the offsets.
- 303.4.4 Offsets can only come from air basins with the same or worse air quality designations than that of the stationary source requiring the offsets.
- 303.4.5 In no case shall halogenated hydrocarbons, exempt compounds or any other compound excluded from the definition of reactive organic compounds, be used as offsets for reactive organic compounds.
- 303.4.6 For sources which have provided full offsets of total suspended particulate (TSP), the PM10 emissions from an existing stationary source shall be recalculated from the TSP emission increases and decreases which have occurred since December 31, 1976, using PM10 emission factors. When PM10 emission factors do not exist, it shall be assumed that 50% of the TSP is PM10.
- 303.5 Timing of Quarterly Emission Offsets: Sufficient offsets shall be provided, from the same calendar quarter as the proposed emission increase, with the following exceptions:
- 303.5.1 Emission reductions of reactive organic compounds or nitrogen oxides during the quarters starting April 1 or July 1 may be used to offset emission increases of the same pollutants during any calendar quarter.
- 303.5.2 Emission reductions of carbon monoxide during the quarters starting January 1 or October 1 may be used to offset emission increases of carbon monoxide during any calendar quarter.
- 303.5.3 Emission reductions of PM10 or PM2.5 during the quarters starting January 1 or October 1 may be used to offset emission increases of PM10 or PM2.5 during any calendar quarter.
- 303.5.4 Emission reductions of sulfur oxides during any quarter may be used to offset emission increases of sulfur oxides during any calendar quarter.
- 303.6 Interpollutant Offsets
- 303.6.1 The APCO may approve interpollutant offsets for precursor pollutants on a case by case basis, provided that the applicant demonstrates, through the use of an air quality model, that the emission increases from the new or modified source will not cause or contribute to a violation of an ambient air quality standard.
- 303.6.2 Interpollutant offsets between PM10 and PM10 precursors are allowed only if PM10 precursors contribute significantly to the PM10 levels that exceed the PM10 ambient standards.
- 303.6.3 PM10 emissions shall not be allowed to offset nitrogen oxides or reactive organic compound emissions in ozone nonattainment areas,

nor be allowed to offset sulfur oxide emissions in sulfate nonattainment areas.

303.6.4 Interpollutant emission offsets between PM_{2.5} precursors are not allowed unless modeling demonstrates that PM_{2.5} interpollutant offset ratios are appropriate in an approved PM_{2.5} attainment plan.

303.6.5 EPA and ARB must concur with all proposed interpollutant offsets ratios prior to use.

303.7 Intra-District Offsets

303.7.1 ERCs generated in another district may be used to offset emission increases in Placer County.

303.7.2 If the ERC generating source and the source with the proposed emissions increase are not in the same air basin, both of the following requirements must be met:

- a. The ERC generating source must be located in an upwind district that is classified, pursuant to Health and Safety Code Section 40910 et seq., as being in the same or a worse nonattainment status than the downwind district where the stationary source with the proposed emission increases will be located.
- b. The stationary source at which the emission increases are to be offset must be located in a downwind district that is overwhelmingly impacted, as determined pursuant to Health and Safety Code Section 39610, by emissions transported from the upwind district where the ERC generating source is located.

303.7.3 Any offset credited to a stationary source in one district using offsets obtained from reductions at a stationary source in another district shall be approved by a resolution adopted by the governing boards of both the upwind and downwind districts, after taking into consideration the impact of the offset on air quality, public health, and the regional economy. The District's governing board may delegate to the APCO the Board's authority to approve the offsets credited.

303.7.4 For ERCs generated in another district, the District may adjust the value of such credits to reflect any District requirements that would have applied if the credits had been generated within the District.

303.8 Emission Reductions, Shutdowns, and Curtailments: Actual emission reductions from an internal shutdown or curtailment of a permitted emission unit may be credited for the purposes of providing internal offsets provided:

303.8.1 The crediting of emission reductions from source shutdowns and curtailments comply with the current U.S. Environmental Protection Agency emissions trading policy and applicable federal regulations; and

303.8.2 Emissions reductions are ensured by federally enforceable emission limitations contained in the Permit to Operate, or the permanent surrender or cancellation of the Permit to Operate; and

303.8.3 If the shutdown emission unit is being replaced with a new or modified emission unit, the APCO may allow a maximum of 90 days as a

shakedown period for simultaneous operation of the existing and the new or modified emission unit.

303.9 Exemptions From Offset Requirements

- 303.9.1 Offsets shall not be required for temporary sources or portable equipment, if the emissions from such units do not constitute a major source or major modification to a major source.
- 303.9.2 Offsets shall not be required for an emergency engine which is used exclusively for testing, maintenance and emergency use, if the emissions from the emergency engine, excluding emergency use, do not exceed the offset limit by itself.
- 303.9.3 Offsets shall not be required for increases in carbon monoxide emissions if the applicant, using an Air Quality Model approved by the APCO, demonstrates that the increase in ambient concentration does not exceed 500 micrograms per cubic meter, 8 hour average, at or beyond the property line of the stationary source.
- 303.9.4 The requirement to provide offsets shall not apply to the following:
- a. Relocation of emissions units solely within only one air basin within the District, and the relocation does not result in any increase in potential to emit.
 - b. Replacement emissions units, provided the replacement does not constitute a major source or major modification.
 - c. Modifications necessary to comply with any regulations contained in Regulation 2 – PROHIBITIONS, or in the SIP, unless the modification will result in a major modification. This provision does not apply to changes in production rate, hours of operation, or any other change or modification not required for compliance with Regulation 2 or the SIP.
 - d. If requested by the APCO, the applicant shall demonstrate through the use of an air quality model that the emission increases from the new or modified source will not cause or contribute to a violation of an ambient air quality standard.

304 MAJOR SOURCE ADMINISTRATIVE REQUIREMENTS: The following administrative requirements shall apply to any new major source or major modification regulated by the rule. Power plants over 50 megawatts shall be subject to the additional requirements of Section 500.

- 304.1 Alternative Siting: The applicant shall prepare an analysis functionally equivalent to the requirements of Division 13 of the Public Resources Code (California Environmental Quality Act-CEQA). The District will not issue an Authority to Construct unless the APCO has concluded, based on the information included in the Alternative Siting Analysis that the benefits of the proposed source significantly outweigh the environmental and social cost imposed as a result of its location, construction, or modification.
- 304.2 Certification of Compliance: The owner or operator of the proposed new or modified source has certified that all existing major stationary sources owned or operated by such person (or by any entity controlling, controlled by, or under

common control with such person) in California which are subject to emission limitations are in compliance, or on an expeditious schedule for compliance, with all applicable emission limitations and standards.

- 304.3 Potential Visibility Impacts: The APCO shall consult with the Federal Land Manager on a proposed major stationary source or major modification that may impact visibility in any Class 1 Area, in accordance with 40 CFR 51.307 if the net emissions increase from the new or modified source exceeds 10 tons/year of PM_{2.5}, 15 tons/year of PM₁₀, or 40 tons/year of NO_x; and the location of the source, relative to the closest boundary of a specified federal Class I area is within 20 miles.

305 GENERAL PROVISIONS

- 305.1 Air Quality Models: All estimates of ambient concentrations required pursuant to this rule shall be based on applicable air quality models, databases, and other requirements specified in 40 CFR Part 51, Appendix W ("Guideline on Air Quality Models"). Where an air quality model specified in 40 CFR Part 51, Appendix W ("Guideline on Air Quality Models") is inappropriate, the model may be modified or another model substituted. Such a modification or substitution of a model may be made on a case-by-case basis or, where appropriate, on a generic basis. Written approval from the United States Environmental Protection Agency (EPA) must be obtained for any modification or substitution. In addition, use of a modified or substituted model must be subject to notice and opportunity for public comment.

- 305.2 Ambient Air Quality Standards: In no case shall emissions from the new or modified stationary source prevent or interfere with the attainment or maintenance of any applicable ambient air quality standard. The Air Pollution Control Officer (APCO) may require the use of an air quality model to estimate the effects of a new or modified stationary source. The analysis shall estimate the effects of the new or modified stationary source, and verify that the new or modified stationary source will not prevent or interfere with the attainment or maintenance of any ambient air quality standard. In making this determination the APCO shall take into account the mitigation of emissions through offsets pursuant to this rule and the impacts of transported pollutants on downwind pollutant concentrations. The APCO may impose, based on an air quality analysis, offset ratios greater than the requirements of Section 303.2.

400 APPLICATION PROCESSING

- 401 **REQUIREMENT TO SUBMIT APPLICATION:** Any person building, erecting, altering or replacing any article, machine, equipment or other contrivance, the use of which may cause, eliminate, reduce, or control the issuance of air contaminants, shall first obtain authorization for such construction from the APCO as specified in this rule. Exemptions from this requirement are listed in Rule 501, GENERAL PERMIT REQUIREMENTS. The application shall be submitted on forms supplied by the District.
- 402 **COMPLETE APPLICATION REQUIREMENT:** The APCO shall determine whether an application is complete no later than 30 days after receipt of the application, or after such longer time period that the applicant and the APCO have agreed to in writing.

If the APCO determines that the application is not complete, the applicant shall be notified in writing of the decision specifying the information required. Upon receipt of any re submittal of the application, a new 30-day period to determine completeness shall begin. Completeness of an application or a re-submitted application shall be evaluated on the basis of the information requirements set forth in District regulations as they exist on

the date on which the application or re-submitted application was received, or when the CEQA-related information which satisfies the requirements of the District's CEQA Guidelines has been received, whichever is later.

The APCO may, during the processing of the application, request an applicant to clarify, amplify, correct, or otherwise supplement the information submitted in the application.

- 403 PRELIMINARY DECISION:** Following acceptance of an application as complete, the APCO shall perform the evaluations required to determine compliance with all applicable District rules and regulations and make a preliminary written decision as to whether an Authority to Construct should be approved, conditionally approved, or denied.

The decision shall be based on the Section 300 standards in force on the date the application is deemed complete, except when a new federal requirement not yet incorporated into this Rule applies to the new or modified source.

When the District is the CEQA Lead Agency for a project, the APCO shall not issue a preliminary decision until the draft Environmental Impact Report or Negative Declaration is available for public review. The decision shall be supported by a succinct written analysis. For projects requiring offsets, the APCO shall transmit its preliminary written decision and analysis to the California Air Resources Board and the U.S. Environmental Protection Agency for a 45 day review period.

404 TIMING FOR FINAL ACTION

- 404.1** The APCO shall not take final action for any project for which an Environmental Impact Report (EIR) or a Negative Declaration is being prepared until a final EIR for that project has been certified or a Negative Declaration for that project has been approved, and the APCO has considered the information in that final EIR or Negative Declaration.

The APCO shall take final action on the application within whichever of the following periods of time is longer:

404.1.1 Within 180 days after the certification of the final EIR or approval of the Negative Declaration, or

404.1.2 Within 180 days of the date on which the application was determined complete by the APCO.

- 404.2** Except as provided in Section 103, the APCO shall provide written notice of the final action to the applicant, any commenters, the U.S. Environmental Protection Agency, and the California Air Resources Board.

- 405 AUTHORITY TO CONSTRUCT AND PERMIT TO OPERATE CONTENT:** Each Authority to Construct and/or Permit to Operate issued by the APCO shall include the following minimum terms and conditions:

- 405.1** A provision stating that the emission unit shall be operated in a manner consistent with the application used to determine compliance with this rule.

- 405.2** The following emissions limitations shall be included, if applicable:

405.2.1 BACT emission limitations if required by Section 302. Such condition(s) shall be expressed in a manner consistent with testing procedures, such as ppmv NOx, g/liter VOC, or lbs/hr.

405.2.2 A quarterly emissions limitation for each offset pollutant, if offsets are required pursuant to Section 303.

405.2.3 An emission limitation (daily, monthly, or quarterly) shall be contained in the Authority to Construct and Permit to Operate for all NSR pollutants for which offsets are not being provided pursuant to Section 303, or when required to be consistent with ambient air quality standards.

405.3 Design, Operational, or Equipment Standards: If the APCO determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of a numerical emission standard infeasible, the APCO may instead prescribe a design, operational, or equipment standard. In such cases, the District shall make its best estimate as to the emission rate that will be achieved and shall specify that rate in required submissions to the U.S. Environmental Protection Agency. Any Authority to Construct or permit issued without an enforceable numerical emission standard must contain enforceable conditions which assure that the design characteristics or equipment will be properly maintained, or that the operational conditions will be properly performed, so as to continuously achieve the assumed degree of control.

406 **PUBLICATION AND PUBLIC COMMENT:** If a proposed project is required to provide offsets pursuant to Section 303, or if a proposed project may emit increased actual lead emissions at a rate of 5 tons per year or greater, within ten calendar days following a preliminary decision, the APCO shall publish in at least one newspaper of general circulation in the District a notice stating the preliminary decision of the APCO, noting how the pertinent information can be obtained, and inviting written public comment for a 30-day period following the date of publication.

407 **PUBLIC INSPECTION:** Except as provided in Section 103, the APCO shall make available for public inspection at the District's office the information submitted by the applicant and the APCO's analysis no later than the date the notice of the preliminary decision is published. Information submitted which contains trade secrets shall be handled in accordance with Section 6254.7 of the California Government Code and relevant sections of the California Administrative Code. Further, all such information shall be transmitted no later than the date of publication to the California Air Resources Board and the U.S. Environmental Protection Agency regional office, and to any party which requests such information.

408 **DENIAL, FAILURE TO MEET STANDARDS:** The APCO shall deny any Authority to Construct or Permit to Operate if the APCO finds that the subject of the application would not comply with the standards set forth in District, state, or federal rules or regulations.

409 **DENIAL, FAILURE TO MEET CEQA:** The APCO shall deny any Authority to Construct or Permit to Operate if the APCO finds that the subject of the application would not comply with the standards set forth in CEQA.

410 **ISSUANCE, PERMIT TO OPERATE:** The APCO shall issue a Permit to Operate an emissions unit subject to the requirements of this rule after determining that all conditions specified in the Authority to Construct have been complied with or will be complied with by the dates specified on the Authority to Construct. Such applicable conditions shall be contained in the Permit to Operate. Where a new or modified stationary source is, in whole or in part, a replacement for an existing stationary source on the same property, the APCO may allow a maximum of 90 days as a shakedown period for simultaneous operation of the existing stationary source and the new source or replacement.

500 **ADDITIONAL PROVISIONS FOR POWER PLANTS:** This Section shall apply to power plants with maximum ratings equal to, or in excess of 50 megawatts proposed to be constructed in the District and for which a Notice of Intention (NOI) or Application for Certification (AFC) has been accepted by the California Energy Commission.

501 Within 14 days of receipt of a Notice of Intention, the APCO shall notify the California Air Resources Board and the California Energy Commission of the District's intent to participate in the Notice of Intention proceeding. If the District chooses to participate in the Notice of Intention proceeding, the APCO shall prepare and submit a report to the California Air Resources Board and the California Energy Commission prior to the conclusion of the non-adjudicatory hearing specified in Section 25509.5 of the California Public Resources Code. That report shall include, at a minimum:

501.1 A preliminary specific definition of Best Available Control Technology for the proposed facility;

501.2 A preliminary discussion of whether there is substantial likelihood that the requirements of this rule and all other District regulations can be satisfied by the proposed facility;

501.3 A preliminary list of conditions which the proposed facility must meet in order to comply with this rule or any other applicable District regulation.

The preliminary determinations contained in the report shall be as specific as possible within the constraints of the information contained in the Notice of Intention.

502 Upon receipt of an Application for Certification for a power plant, the APCO shall conduct a determination of compliance review. This determination shall consist of a review identical to that which would be performed if an application for an Authority to Construct had been received for the power plant. If the information contained in the Application for Certification does not meet the requirements of this rule, the APCO shall, within 20 calendar days of receipt of the Application for Certification, so inform the California Energy Commission, and the Application for Certification shall be considered incomplete and returned to the applicant for re-submittal.

503 The APCO shall consider the Application for Certification to be equivalent to an application for a permit to construct during the determination of compliance review, and shall apply all provisions of this rule which apply to applications for an Authority to Construct.

504 The APCO may request from the applicant any information necessary for the completion of the determination of compliance review. If the APCO is unable to obtain the information, the APCO may petition the presiding Commissioner of the California Energy Commission for an order directing the applicant to supply such information.

505 Within 180 days of accepting an Application for Certification as complete, the APCO shall make a preliminary decision on:

505.1 Whether the proposed power plant meets the requirements of this rule and all other applicable District regulations, and;

505.2 In the event of compliance, what permit conditions will be required including the specific Best Available Control Technology requirements and a description of required mitigation measures.

The preliminary written decision of this Section shall be treated as a preliminary decision under Section 403 of this Rule, and shall be finalized by the APCO only after being

subject to the public notice and comment requirements of Sections 406 and 407. The APCO shall not issue a determination of compliance for the power plant unless all requirements of this rule are met.

- 506** Within 240 days of the filing date, the APCO shall issue and submit to the California Energy Commission a determination of compliance or, if such a determination cannot be issued, shall so inform the California Energy Commission. A determination of compliance shall confer the same rights and privileges as an Authority to Construct only when and if the California Energy Commission approves the Application for Certification, and the California Energy Commission certificate includes all requirements of the conditions contained within the determination of compliance.
- 507** Any applicant receiving a certificate from the California Energy Commission pursuant to this Section and in compliance with all conditions of the certificate shall be issued a Permit to Operate by the APCO.

600 MONITORING AND RECORDS

- 601 RECORDKEEPING:** The following records shall be maintained for two years. Records shall be provided to the APCO upon request.
- 601.1 Emergency Engines: Records of hours of operation for maintenance purposes and for actual interruptions of electrical power. Such records shall include the date and hours of operation, as well as the reason for operation.
- 601.2 Portable and Temporary Equipment: Records of operating location(s) and corresponding dates of operation.

1. The Board shall establish a process for the review and approval of all rules and regulations that are proposed to be adopted by the Board. The process shall include the following:

a. The Board shall establish a committee to review and approve all rules and regulations that are proposed to be adopted by the Board. The committee shall be composed of members of the Board who are not the author of the rule or regulation. The committee shall have the authority to recommend to the Board the adoption, modification, or repeal of any rule or regulation.

b. The Board shall establish a process for the review and approval of all rules and regulations that are proposed to be adopted by the Board. The process shall include the following:

c. The Board shall establish a process for the review and approval of all rules and regulations that are proposed to be adopted by the Board. The process shall include the following:

d. The Board shall establish a process for the review and approval of all rules and regulations that are proposed to be adopted by the Board. The process shall include the following:

e. The Board shall establish a process for the review and approval of all rules and regulations that are proposed to be adopted by the Board. The process shall include the following:

f. The Board shall establish a process for the review and approval of all rules and regulations that are proposed to be adopted by the Board. The process shall include the following:

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11464 B Avenue, Auburn, CA 95603 • (530) 889-7130 • Fax (530) 889-7107
www.placer.ca.gov/apcd

August 21, 2002

ADVISORY NOTICE FOR GASOLINE DISPENSING FACILITIES

This advisory notice is intended for all persons who are required to *have a Permit to Operate for a retail or a non-retail gasoline dispensing facility* in Placer County. Information is provided below regarding Enhanced Vapor Recovery regulations and Air Toxics Review of new and/or existing gasoline dispensing facilities.

ENHANCED VAPOR RECOVERY

On April 1, 2001, the California Air Resources Board (ARB) adopted an "Enhanced Vapor Recovery" (EVR) program that seeks to fix existing problems with service station vapor recovery systems. This EVR Program will phase in new standards over a four (4) year period to achieve a total of 25 tons per day in statewide VOC emission reductions over the performance of existing systems. By April 1, 2005, all underground tanks will need to change to the new EVR equipment.

In the June 2002 Advisory sent out with this fiscal year's billing for your permits, the District noted that any changes that require an upgrade to EVR equipment requires an Authority to Construct. Based on clarification and information obtained from the California Air Resources Board (CARB), the District has refined the criteria for applying for and obtaining an Authority to Construct for the installation of Phase I EVR equipment.

The District is classifying the installation of Phase I EVR equipment into two categories: **major modifications** and **non-major modifications**.

A **major modification** is one in which underground excavation occurs and requires the replacement of Phase I vapor recovery equipment. All major modifications require an Authority to Construct prior to the installation of Phase I EVR replacement equipment.

A **non-major modification** occurs when replacing failed components on Phase I systems. All replacement parts must be EVR-certified parts or components. However, if Phase I EVR components or parts are not compatible, pre-EVR certified parts or components may continue to be sold and used. For example, currently there are no certified Phase I EVR components for Phase I coaxial systems, thus non-EVR components can still be used in repairs. All facilities that replace Phase I equipment as a non-major modification are required to notify the District to assure that such replacement is not considered a major modification. Additionally, facilities will be required to apply for and obtain an Authority to Construct to "capture" these changes when the EVR systems must be demonstrated to be in place by April 1, 2005.

Further information on EVR can be found at the CARB website under Programs at www.arb.ca.gov

AIR TOXICS REVIEW

Background

The Air Toxics "Hot Spots" Information and Assessment Act was enacted in September 1987, with subsequent amendments. The Air Toxics "Hot Spots" Act establishes a formal air toxics emission inventory risk quantification program that Districts manage. The goal of the Air Toxics "Hot Sports" Act is to:

- ? collect emission data indicative of routine predictable releases of toxic substances to the air;
- ? identify facilities having localized impacts;
- ? evaluate health risks from exposure to the emissions;
- ? notify nearby residents of significant risks; and
- ? reduce risk below the determined level of significance.

Those facilities that pose a potentially significant health risk are required to reduce their risks, thereby reducing the near-source exposure of Californians to toxic air pollutants. Significant risks posed by facilities require public notification and if requested, districts must make health risk assessments available for public review.

The District is evaluating both proposed and existing GDFs to determine the cancer risk that is based upon annual gasoline throughput. Listed below is the specific process for proposed and existing facilities.

For proposed facilities, the District is using an initial health risk screening that is based upon the proposed annual throughput for the facility. For those facilities proposing to pump 1.5 million gallons of gasoline or more a year (i.e. those that have a cancer risk greater than 10-in-a-million), a slightly refined risk screening analysis will be conducted by utilizing distance information from the centroid of the pump islands to the nearest commercial and residential structures. If the cancer risk remains greater than 10-in-a-million following the refined risk assessment, a gasoline throughput limitation will be placed upon the facility. This limitation will be based on a gasoline throughput that will reduce the cancer risk too less than 10-in-a-million. If the applicant chooses, a detailed health risk assessment, approved by the District, may be conducted by the applicant or risk reduction measures may be implemented to reduce emissions. These steps may result in the 10-in-a-million cancer risk threshold being exceeded at a higher annual gasoline throughput limitation.

For existing GDFs, the District is reviewing the high throughput facilities that have an initial screening of greater than 10-in-a-million cancer risk. Information regarding distances from the centroid of the pump islands to the nearest commercial and residential structures is being gathered to refine the initial screening. If the cancer risk remains greater than 10-in-a-million, then the risk analysis will be submitted to the facility for review and comment before being forwarded to the Office of Environmental Health Hazard Assessment (OEHHA) for approval.

Following OEHHA approval of the risk assessment, Public Notification is required of all persons exposed in accordance with adopted District policies, and risk reduction through gasoline throughput curtailment or improved emission controls will be required. These requirements are likely to apply to only those facilities that have a very high annual throughput and with neighbors in close proximity.

This advisory notice and other previously issued advisories can be found on our website at www.placer.ca.gov/apcd or by calling Ms. Ann Hobbs at (530) 889-7137.

June 15, 2020

VIA EMAIL ONLY

CityCouncil@roseville.ca.us

City of Roseville City Council
311 Vernon Street
Roseville, CA 95678

**RE: WRSP PCL F-31 - The Plaza at Blue Oaks (File #PL17-0368)
Response to Associations' Appeal of Approval of Mitigated Negative Declaration**

Dear Council Members:

This office represents West Roseville Project Development Company, Inc., the project owner ("Owner"), and Signature Management Company, the project developer ("Developer"), of the above-referenced project. The purpose of this letter is to provide a response to the May 26, 2020 letter from the Law Offices of Robert M. Bone, representing an unincorporated association of Roseville community residents (the "Association"), to the City Council ("Council") appealing the May 14, 2020 decision of the Planning Commission to approve the Project's Initial Study/Mitigated Negative Declaration ("IS/MND") (the "Appeal"). Owner and Developer are real parties in interest.

The Project was heard by the Planning Commission on May 14, 2020. Prior to the hearing, the Planning Commission received a total of nine letters from the public in opposition of the project and two letters in support of the project. The letters in opposition of the project cited similar concerns regarding the environmental impacts of the project. Mr. Bone submitted additional correspondence on behalf of the Association that focused on additional concerns with the overall project design. These concerns are identical to those raised in the Appeal.

At the Planning Commission hearing, Mr. Bone spoke in opposition of the project and repeated the Association's concerns as stated in his prior correspondence, including effects of the project on the environment, the removal of oak trees, and increase in traffic. After receiving testimony, the Planning Commission deliberated on the item and ultimately voted to approve the Design Review Permit, Tentative Subdivision Map, and Tree Permit, with a vote of 6 aye, 0 nay, 1 absent.

On May 26, 2020, the City received the Association's appeal of the Planning Commission's decision from the Law Office of Robert M. Bone. In its Appeal, the Association challenges the adequacy of the City's environmental review, alleging the following grounds to reject the Planning Commission's decision: inconsistency with the General Plan, Bicycle Master Plan, and Pedestrian Master Plan; conflict with the City's site design guidelines; loss of oak trees; and inadequate environmental review.

Associate Planner Kinarik Shallow and Development Services Director Mike Isom are expected to submit a memo to the Council responding to the specific issues raised by the Appeal.

Owner and Developer agree with the Planning Commission that the Initial Study adequately evaluates, discloses, and mitigates the Project's environmental impacts and a Mitigated Negative Declaration is the appropriate environmental determination for the Project. Owner and Developer also assert that all aspects of CEQA with regard to the IS/MND have been fully complied with and that an Environmental Impact Report ("EIR") is not required for the Project. Owner and Developer further assert that the Project is consistent with the General Plan, Bicycle Master Plan, Pedestrian Master Plan; City site design guidelines; and tree protection ordinances.

CEQA requires the preparation of an EIR whenever an agency proposes to approve or implement a project that "may have a significant effect on the environment." (§§ 21100, 21151.) "If there is no substantial evidence of any significant environmental impact, however, the agency may [instead] adopt a negative declaration." (City of Redlands v. County of San Bernardino, (2002) 96 Cal.App.4th 398, 405.) A *mitigated* negative declaration may be utilized by an agency when a project as initially proposed may have a significant effect on the environment but will not have a significant environmental effect because changes have been made or agreed on that mitigate such potential effects. (Cal. Code Regs. tit. 14, § 15071(e)). In evaluating a claim that an agency improperly approved a project by using a negative declaration, rather than preparing an EIR, a trial court applies the "fair argument" test. (Porterville Citizens for Responsible Hillside Development v. City of Porterville, (2007) 157 Cal.App.4th 885, 899.) "Under this test, the agency must prepare an EIR whenever substantial evidence in the record supports a fair argument that a proposed project may have a significant effect on the environment." (Gentry v. City of Murrieta, (1995) 36 Cal.App.4th 1359, 1399-1400.) In that instance, a trial court's function is to decide whether substantial evidence supports the agency's conclusion as to whether a fair argument of environmental impact could be made. (Id. at p. 1399.)

Like any petitioner challenging an agency's decision to proceed by negative declaration, the Association bears the burden of proof "to demonstrate by citation to the record the existence of substantial evidence supporting a fair argument of significant environmental impact." Gentry v. City of Murrieta (1995) 36 Cal.App.4th 1359, 1379. The Association cannot meet this burden.

CEQA and its implementing regulations provide that facts, reasonable assumptions predicated on facts, and expert opinions supported by facts may constitute substantial evidence; whereas argument, speculation, unsubstantiated opinion or narrative, clearly inaccurate or erroneous factual statements or evidence of social or economic impacts that do not result in physical impacts on the environment may not. (§§ 21080, subd. (c); 21080. 2, subd (c); 14 Cal. Code Regs., §§ 15064, subd. (f)(5), 15384.) **"[I]n the absence of a specific factual foundation in the record, dire predictions by non-experts regarding the consequences of a project do not constitute substantial evidence."** (Porterville Citizens for Responsible Hillside Development, *supra*, 157 Cal.App.4th at p. 901 (emphasis added).)

In its Appeal, the Association relies on nothing more than argument, speculation, and unsubstantiated opinion and narrative in its attempt to claim that further environmental study is

June 15, 2020

Page 3

required. Such a dearth of substantiated evidence cannot and will not rise to the level of substantial evidence required to overcome the Planning Commission's discretionary and well-supported decision as set forth in its IS/MND. As such, Owner and Developer urge the Council to adopt the Plaza at Blue Oaks Initial Study/Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program; and adopt Resolution No. 20-xxx denying the Association's Appeal from the May 14, 2020 approvals by the Planning Commission; adopting the four (4) findings of fact and approving the design review permit subject to one hundred one (101) conditions of approval; adopting the three (3) findings of fact and approving the tentative subdivision map subject to thirty-nine (39) conditions of approval; and adopting the two (2) findings of fact and approving the tree permit subject to twenty (20) conditions of approval.

Lastly, in its Appeal, the Association states that it has "commissioned an environmental report and a traffic report" that it intends to submit to the Council in support of the Association's position. As of the drafting of this correspondence, said reports have not yet been submitted to the Council and are not part of the record. Owner and Developer submit that an adequate hearing can only be held once said reports are submitted and they and the City have had sufficient time to review, analyze, and, if necessary, respond to same.

Sincerely,

IRONHORSE LAW GROUP PC

A handwritten signature in black ink, reading "Nathan Scheg". The signature is written in a cursive, flowing style.

Nathan L. Scheg, Esq.

cc: Client (via email only)

RESOLUTION NO. 20-264

DENYING THE APPEAL FROM THE MAY 14, 2020 APPROVALS BY THE PLANNING COMMISSION; ADOPTING THE PLAZA AT BLUE OAKS INITIAL STUDY/MITIGATED NEGATIVE DECLARATION AND THE MITIGATION MONITORING AND REPORTING PROGRAM; ADOPTING THE FOUR (4) FINDINGS OF FACT AND APPROVING THE DESIGN REVIEW PERMIT SUBJECT TO ONE HUNDRED ONE (101) CONDITIONS OF APPROVAL; ADOPTING THE THREE (3) FINDINGS OF FACT AND APPROVING THE TENTATIVE SUBDIVISION MAP SUBJECT TO THIRTY-NINE (39) CONDITIONS OF APPROVAL; AND ADOPTING THE TWO (2) FINDINGS OF FACT AND APPROVING THE TREE PERMIT SUBJECT TO TWENTY (20) CONDITIONS OF APPROVAL

WHEREAS, on May 14, 2020, the Planning Commission held a public hearing on the Plaza at Blue Oaks Project (Project) located on West Roseville Specific Plan Parcel F-31, at 1950 Blue Oaks Boulevard; and

WHEREAS, the Project consists of an 82,100-square-foot shopping center consisting of a 35,000-square-foot anchor grocery store, a 12-pump gas station with a 3,500-square-foot-convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet; and

WHEREAS, on May 14, 2020, the Planning Commission considered and adopted the Plaza at Blue Oaks Mitigated Negative Declaration and associated Mitigation Monitoring and Reporting Program; and

WHEREAS, on May 14, 2020, the Planning Commission voted 6-0 to approve the Design Review Permit after finding that the Project was consistent with the following four (4) Findings of Fact:

1. The project as approved preserves and accentuates the natural features of the property, such as open space, topography, trees, wetlands and water courses, provides adequate drainage for the project, and allows beneficial use to be made of the site for development.
2. The project site design as approved provides open space, access, vehicle parking, vehicle, pedestrian and bicycle circulation, pedestrian walks and links to alternative modes of transportation, loading areas, landscaping and irrigation and lighting which results in a safe, efficient, and harmonious development and which is consistent with the applicable goals, policies and objectives set forth in the General Plan, the Community Design Guidelines and the applicable specific plan and/or applicable design guidelines.
3. The building design, including the materials, colors, height, bulk, size and relief, and the arrangement of the structures on the site, as approved is harmonious with other development and buildings in the vicinity and which is consistent with the applicable goals, policies and objectives set forth in the General Plan, the Community Design Guidelines and the applicable specific plan and/or applicable design guidelines.
4. The design of the public services, as approved, including, but not limited to, trash enclosures and service equipment are located so as not to detract from the appearance of

the site, and are screened appropriately and effectively using construction materials, colors and landscaping that are harmonious with the site and the building designs.

WHEREAS, on May 14, 2020, the Planning Commission voted 6-0 to approve the Tentative Subdivision Map for the Project after finding that the Project was consistent with the following three (3) Findings of Fact:

1. The size, design, character, grading, location, orientation and configuration of lots roads and all improvements for the tentative subdivision map are consistent with the density, uses, circulation and open space systems, applicable policies and standards of the general plan or any applicable specific plan for the area, whichever is more restrictive, and the design standards of Title 18 (Subdivision Ordinance) of the Roseville Municipal Code.
2. The subdivision will result in lots which can be used or built upon. The subdivision will not create lots which are impractical for improvement or use due to the steepness of terrain or location of watercourses in the area; the size or shape of the lots or inadequate building area; inadequate frontage or access; or, some other physical condition of the area.
3. The design and density of the subdivision will not violate the existing requirements prescribed by the Regional Water Quality Control Board for the discharge of waste into the sewage system, pursuant to Division 7 of the Water Code.

WHEREAS, on May 14, 2020, the Planning Commission voted 6-0 to approve the Tree Permit for the Project after finding that the Project was consistent with the following two (2) Findings of Fact:

1. Approval of the Tree Permit will not be detrimental to the public health, safety or welfare, and approval of the Tree Permit is consistent with the provisions of Chapter 19.66.
2. Measures have been incorporated into the project or permit to mitigate impacts to remaining trees or to provide replacement for trees removed.

WHEREAS, following the Planning Commission's approval, an appeal was submitted on May 26, 2020 based on concerns that the project had an inadequate environmental review; the project was not consistent with the General Plan, Bicycle Master Plan, and Pedestrian Master Plan; the project was in conflict with the City's site design guidelines; and based on concerns with the loss of oak trees; and

WHEREAS, a review of the record shows that the Project's Initial Study provides substantial evidence to support the Mitigated Negative Declaration finding, including technical studies prepared by qualified consultants including an Environmental Noise Assessment, Health Risk Analysis, and a short-term traffic study; and the initial study analysis relies on two certified Specific Plan Environmental Impact Reports (EIRs)—the West Roseville Specific Plan EIR and the Amoruso Ranch Specific Plan EIR; and

WHEREAS, the Project was designed consistent with the goals and policies of the General Plan, Bicycle Master Plan, and Pedestrian Master Plan; and

WHEREAS, the Project was designed consistent with the City's Community Design Guidelines pertaining to site planning and building siting; and

WHEREAS, the Project retains the existing native oak trees on the site to the extent feasible and mitigates for the loss of trees through a combination of on-site plantings and payment of in-lieu fees; and

WHEREAS, after holding a hearing on July 1, 2020 and considering the entire record, staff recommends that the City Council deny the appeal of the Planning Commission's approval of the Design Review Permit, Tentative Subdivision Map, and Tree Permit because the necessary findings of facts can be made; and

WHEREAS, staff recommends that the City Council adopt the Plaza at Blue Oaks Initial Study/Mitigated Negative Declaration and the Mitigation Monitoring and Reporting Program; and

WHEREAS, staff recommends that the City Council adopt the four (4) Findings of Fact for the Design Review Permit and approve the Design Review Permit subject to one hundred one (101) conditions of approval; and

WHEREAS, staff recommends that the City Council adopt the three (3) Findings of Fact for the Tentative Subdivision Map and approve the Tentative Subdivision Map subject to thirty-nine (39) conditions of approval; and

WHEREAS, staff recommends that the City Council adopt the two (2) Findings of Fact for the Tree Permit and approve the Tree Permit subject to twenty (20) conditions of approval; and

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Roseville hereby denies the appeal of the Planning Commission's May 14, 2020 approval of the Design Review Permit, Tentative Subdivision Map, and Tree Permit; and

BE IT FURTHER RESOLVED that the Plaza at Blue Oaks Initial Study/Mitigated Negative Declaration and the Mitigation Monitoring and Reporting Program are hereby adopted; and

BE IT FURTHER RESOLVED that the four (4) Findings of Fact for the Design Review Permit are hereby adopted and the Design Review Permit is hereby approved subject to one hundred one (101) conditions of approval; and

BE IT FURTHER RESOLVED that the three (3) Findings of Fact for the Tentative Subdivision Map are hereby adopted and the Tentative Subdivision Map is hereby approved subject to thirty-nine (39) conditions of approval; and

BE IT FURTHER RESOLVED that the two (2) Findings of Fact for the Tree Permit are hereby adopted and the Tree Permit is hereby approved subject to twenty (20) conditions of approval.

PASSED AND ADOPTED by the Council of the City of Roseville this_____, 20_, by the following vote on roll call:

AYES COUNCILMEMBERS:
NOES COUNCILMEMBERS:
ABSENT COUNCILMEMBERS:

MAYOR

City Clerk

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

Notice is hereby given that, as Lead Agency, the City of Roseville, Development Services Department, Planning Division has prepared an Initial Study leading to a **Mitigated Negative Declaration** for the project referenced below. This Mitigated Negative Declaration is available for public review and comment.

Project Title/File#: WRSP PCL F-31 – The Plaza at Blue Oaks; File #PL17-0368

Project Location: 1950 Blue Oaks Boulevard, Roseville, Placer County, CA; APN 017-117-093-000

Project Owner: Joe Zawidski, Signature Management Company

Project Applicant: Joe Zawidski, West Roseville Development Company, Inc.

Project Planner: Kinarik Shallow, Associate Planner

Project Description: The proposed project is a retail center consisting of a ±35,000 square-foot anchor grocery store, a 12-pump gas station with a ±3,500 square-foot convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet. The project includes a Design Review Permit to review the site design and proposed buildings, a Tree Permit to remove several native oak trees on the westerly portion of the site, and a Tentative Subdivision Map to subdivide the parcel into eight (8) lots.

Document Review and Availability: The public review and comment period begins on April 17, 2020 and ends on May 7, 2020. The **Mitigated Negative Declaration** may be reviewed online at

<https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8774505>

Written comments on the adequacy of the Mitigated Negative Declaration may be submitted to Kinarik Shallow, Associate Planner, at kshallow@roseville.ca.us and must be received no later than 5:00 pm on May 7, 2020. Due to the currently in place Placer County Stay at Home Directive, physical correspondence will not be able to be considered during the review period.

This project will be scheduled for a public hearing before the City's Planning Commission. At this hearing, the Planning Commission will consider the Mitigated Negative Declaration and associated project entitlements. The tentative hearing date is May 14, 2020.

Greg Bitter
Planning Manager

Dated: April 15, 2020

Publish: April 17, 2020

MITIGATED NEGATIVE DECLARATION

Project Title/File Number: WRSP PCL F-31 – The Plaza at Blue Oaks; File # PL17-0368
Project Location: 1950 Blue Oaks Boulevard, Roseville, Placer County, CA; APN 017-117-093-000
Project Applicant: Joe Zawidski, Signature Management Company
Property Owner: Joe Zawidski, West Roseville Development Company, Inc.
Lead Agency Contact Person: Kinarik Shallow, Associate Planner - City of Roseville; (916) 746-1309
Date: April 15, 2020

Project Description:

The proposed project is a retail center consisting of a ±35,000 square-foot anchor grocery store, a 12-pump gas station with a ±3,500 square-foot convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet. The project includes a Design Review Permit to review the site design and proposed buildings, a Tree Permit to remove several native oak trees on the westerly portion of the site, and a Tentative Subdivision Map to subdivide the parcel into eight (8) lots.

DECLARATION

The Planning Manager has determined that the above project will not have significant effects on the environment and therefore does not require preparation of an Environmental Impact Report. The determination is based on the attached initial study and the following findings:

- A. *The project will not have the potential to degrade the quality of the environment, substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare or threatened species, reduce the number or restrict the range of rare or endangered plants or animals or eliminate important examples of the major periods of California history or prehistory.*
- B. *The project will not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.*
- C. *The project will not have impacts, which are individually limited, but cumulatively considerable.*
- D. *The project will not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly.*
- E. *No substantial evidence exists that the project may have a significant effect on the environment.*
- F. *The project incorporates all applicable mitigation measures identified in the attached initial study.*
- G. *This Mitigated Negative Declaration reflects the independent judgment of the lead agency.*

INITIAL STUDY & ENVIRONMENTAL CHECKLIST

Project Title/File Number:	WRSP PCL F-31 – The Plaza at Blue Oaks; File #PL17-0368
Project Location:	1950 Blue Oaks Boulevard, Roseville, Placer County, CA; APN 017-117-093-000
Project Description:	The proposed project is a retail center consisting of a ±35,000 square-foot anchor grocery store, a 12-pump gas station with a ±3,500 square-foot convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet. The project includes a Design Review Permit to review the site design and proposed buildings, a Tree Permit to remove several native oak trees on the westerly portion of the site, and a Tentative Subdivision Map to subdivide the parcel into eight (8) lots.
Project Applicant:	Joe Zawidski, Signature Management Company
Property Owner:	Joe Zawidski, West Roseville Development Company, Inc.
Lead Agency Contact:	Kinarik Shallow, Associate Planner; Phone (916) 746-1309

This initial study has been prepared to identify and assess the anticipated environmental impacts of the above described project application. The document relies on previous environmental documents (see Attachments) and site-specific studies prepared to address in detail the effects or impacts associated with the project. Where documents were submitted by consultants working for the applicant, City staff reviewed such documents in order to determine whether, based on their own professional judgment and expertise, staff found such documents to be credible and persuasive. Staff has only relied on documents that reflect their independent judgment, and has not accepted at face value representations made by consultants for the applicant.

This document has been prepared to satisfy the California Environmental Quality Act (CEQA), (Public Resources Code, Section 21000 et seq.) and the State CEQA Guidelines (14 CCR 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects.

The initial study is a public document used by the decision-making lead agency to determine whether a project may have a significant effect on the environment. If the lead agency finds substantial evidence that any aspect of the project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the project is adverse or beneficial, the lead agency is required to prepare an EIR. If the agency finds no substantial evidence that the project or any of its aspects may cause a significant effect on the environment, a negative declaration shall be prepared. If in the course of analysis, the agency recognizes that the project may have a significant impact on the environment, but that by incorporating specific mitigation measures to which the applicant agrees, the impact will be reduced to a less than significant effect, a mitigated negative declaration shall be prepared.

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PROJECT DESCRIPTION

Project Location

The 13.35-acre project site is located on Parcel F-31 of the West Roseville Specific Plan (WRSP), at the northeast corner of Blue Oaks Boulevard and Fiddymment Road (Figure 1). The address of the project site is 1950 Blue Oaks Boulevard.

Figure 1: Project Location



Background

The WRSP was approved by City Council in February 2004. The WRSP area includes 3,162 acres in the northwest portion of the City, west of Fiddymment Road and generally north of Pleasant Grove Boulevard. An Environmental Impact Report (EIR) was certified with the WRSP (State Clearinghouse #2002082057), which examined the impacts of Specific Plan buildout. This addressed the major cumulative impacts of developing the Specific Plan as a whole, including the subject property (Parcel F-31).

Environmental Setting

The project site is currently undeveloped and is comprised mostly of annual grasslands and several native oak trees. The site varies in grade, with a high point on the site at ± 106 feet above sea level and the low point of the site at ± 83 feet above sea level. The site generally slopes downward on the southwestern and northwestern corners of the site, where the oak trees are located, and then becomes level with the roadways. Streetlights are located along the roadway frontages and utility poles exist along Blue Oaks Boulevard. Curb and gutter improvements exist along the perimeter of the property. Sidewalks are fully constructed along Fiddymment Road,

while partial sidewalks exist along the remainder of the site. The corner of Blue Oaks Boulevard and Fiddymment Road consists of a neighborhood entry feature including hardscape elements such as pilasters, raised planters, and small accent trees. The site is adjacent to Harvey Way to the north with an undeveloped High Density Residential parcel beyond, Oak Meadow Drive to the east with Fiddymment Ranch Apartments beyond, Blue Oaks Boulevard to the south with single-family residential uses beyond, and Fiddymment Road to the west with a Community Commercial parcel beyond. Additionally, Pleasant Grove Creek is located approximately one mile north of the site.

Table 1: Adjacent Zoning and Land Use

Location	Zoning	General Plan Land Use	Actual Use of Property
Site	Community Commercial (CC)	Community Commercial (CC)	Vacant
North	Harvey Way with Attached Housing (R3) beyond	High Density Residential (HDR-24.8)	Vacant
South	Blue Oaks Boulevard with Residential Mixed Use/Special Area-Del Webb Specific Plan (RMU/SA-DW)	Low Density Residential (LDR-5)	Single-family residential
East	Oak Meadow Drive with R3 beyond	HDR-25	Apartment Complex
West	Fiddymment Road with CC beyond	CC	Medical Office

Proposed Project

The proposed project is a retail center consisting of a ±35,000 square-foot anchor grocery store, a 12-pump gas station with a ±3,500 square-foot convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet, as well as associated parking, lighting, and landscaping. The total building square footage will be approximately 82,100 square feet. The project includes a Design Review Permit to review the site design and proposed buildings, a Tree Permit to remove several native oak trees on the westerly portion of the site, and a Tentative Subdivision Map to subdivide the parcel into eight (8) lots. No building is being proposed on Lot 2 at this time, which will be located on the northeastern corner of the site and will consist of approximately 1.3 acres.

CITY OF ROSEVILLE MITIGATION ORDINANCES, GUIDELINES, AND STANDARDS

For projects that are consistent with the development density established by existing zoning, community plan, or general plan policies for which an EIR was certified, CEQA Guidelines section 15183(f) allows a lead agency to rely on previously adopted development policies or standards as mitigation for the environmental effects, when the standards have been adopted by the City, with findings based on substantial evidence, that the policies or standards will substantially mitigate environmental effects, unless substantial new information shows otherwise (CEQA Guidelines §15183(f)). The City of Roseville adopted CEQA Implementing Procedures (Implementing Procedures) which are consistent with this CEQA Guidelines section. The current version of the Implementing Procedures were adopted in April 2008, along with Findings of Fact, as Resolution 08-172. The below regulations and ordinances were found to provide uniform mitigating policies and standards, and are applicable

to development projects. The City's Mitigating Policies and Standards are referenced, where applicable, in the Initial Study Checklist.

- City of Roseville 2035 General Plan
- City of Roseville Zoning Ordinance (RMC Title 19)
- City of Roseville Improvement Standards (Resolution 02-37)
- City of Roseville Construction Standards (Resolution 01-208)
- Subdivision Ordinance (RMC Title 18)
- Noise Regulation (RMC Ch.9.24)
- Flood Damage Prevention Ordinance (RMC Ch.9.80)
- Drainage Fees (Dry Creek [RMC Ch.4.49] and Pleasant Grove Creek [RMC Ch.4.48])
- West Placer Stormwater Quality Design Manual (Resolution 16-152)
- Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch. 14.20)
- Traffic Mitigation Fee (RMC Ch.4.44)
- Highway 65 Joint Powers Authority Improvement Fee (Resolution 2008-02)
- South Placer Regional Transportation Authority Transportation and Air Quality Mitigation Fee (Resolution 09-05)
- Tree Preservation Ordinance (RMC Ch.19.66)
- Community Design Guidelines (Resolution 95-347)
- Specific Plan Design Guidelines:
 - o West Roseville Specific Plan and Design Guidelines (Resolution 04-40)

OTHER ENVIRONMENTAL DOCUMENTS RELIED UPON

- Amoruso Ranch Specific Plan Final Environmental Impact Report
- West Roseville Specific Plan Environmental Impact Report (SCH #2002082057)

Pursuant to CEQA Guidelines Section 15183, any project which is consistent with the development densities established by zoning, a Community Plan, or a General Plan for which an EIR was certified shall not require additional environmental review, except as may be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. The Amoruso Ranch Specific Plan EIR updated the City's General Plan to 2035, and updated Citywide analyses of traffic, water supply, water treatment, wastewater treatment, and waste disposal. The proposed project is consistent with the adopted land use designations examined within the environmental documents listed above. This Initial Study focuses on effects particular to the specific project site, impacts which were not analyzed within the EIR, and impacts which may require revisiting due to substantial new information. When applicable, the topical sections within the Initial Study summarize the findings within the environmental documents listed above. The analysis, supporting technical materials, and findings of the environmental document are incorporated by reference, and are available for review at the Civic Center, 311 Vernon Street, Roseville, CA.

EXPLANATION OF INITIAL STUDY CHECKLIST

The California Environmental Quality Act (CEQA) Guidelines recommend that lead agencies use an Initial Study Checklist to determine potential impacts of the proposed project on the physical environment. The Initial Study Checklist provides a list of questions concerning a comprehensive array of environmental issue areas potentially affected by this project. This section of the Initial Study incorporates a portion of Appendix G Environmental

Checklist Form, contained in the CEQA Guidelines. Within each topical section (e.g. Air Quality) a description of the setting is provided, followed by the checklist responses, thresholds used, and finally a discussion of each checklist answer.

There are four (4) possible answers to the Environmental Impacts Checklist on the following pages. Each possible answer is explained below:

- 1) A “Potentially Significant Impact” is appropriate if there is enough relevant information and reasonable inferences from the information that a fair argument based on substantial evidence can be made to support a conclusion that a substantial, or potentially substantial, adverse change may occur to any of the physical conditions within the area affected by the project. When one or more “Potentially Significant Impact” entries are made, an EIR is required.
- 2) A “Less Than Significant With Mitigation” answer is appropriate when the lead agency incorporates mitigation measures to reduce an impact from “Potentially Significant” to “Less than Significant.” For example, floodwater impacts could be reduced from a potentially-significant level to a less-than-significant level by relocating a building to an area outside of the floodway. The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level. Mitigation measures are identified as MM followed by a number.
- 3) A “Less Than significant Impact” answer is appropriate if there is evidence that one or more environmental impacts may occur, but the impacts are determined to be less than significant, or the application of development policies and standards to the project will reduce the impact(s) to a less-than-significant level. For instance, the application of the City’s Improvement Standards reduces potential erosion impacts to a less-than-significant level.
- 4) A “No Impact” answer is appropriate where it can be demonstrated that the impact does not have the potential to adversely affect the environment. For instance, a project in the center of an urbanized area with no agricultural lands on or adjacent to the project area clearly would not have an adverse effect on agricultural resources or operations. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources cited in the Initial Study. Where a “No Impact” answer is adequately supported by the information sources cited in the Initial Study, further narrative explanation is not required. A “No Impact” answer is explained when it is based on project-specific factors as well as generous standards.

All answers must take account of the whole action involved, including off- and on-site, indirect, direct, construction, and operation impacts, except as provided for under State CEQA Guidelines.

INITIAL STUDY CHECKLIST

I. Aesthetics

The project site is located in a typical urbanized setting within a commercially zoned area of the City and is adjacent to roadways on all four sides. Public views of the site are from Blue Oaks Boulevard and Fiddymont Road, both arterial roadways, and its adjacent sidewalks. Public views are also from Harvey Way and Oak Meadow Drive, which are considered primary residential streets. The site is undeveloped and contains several native oak trees with grasses and small annual plants. The project will allow construction of a commercial shopping center consisting of multiple buildings totaling approximately 82,100 square feet. Surrounding uses include an undeveloped High Density Residential parcel to the north, an apartment complex (currently under construction) to the east, a single-family subdivision to the south, and a medical office building to the west.

Except as provided in Public Resources Code Section 21099, would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

Thresholds of Significance and Regulatory Setting:

The significance of an environmental impact cannot always be determined through the use of a specific, quantifiable threshold. CEQA Guidelines Section 15064(b) affirms this by the statement “an ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting.” This is particularly true of aesthetic impacts. As an example, a proposed parking lot in a dense urban center would have markedly different visual effects than a parking lot in an open space area. For the purpose of this study, the significance thresholds are as stated in CEQA Guidelines Appendix G, as shown in a–d of the checklist below. The Findings of the Implementing Procedures indicate that compliance with the Zoning Ordinance (e.g. building height, setbacks, etc.), Subdivision Ordinance (RMC Ch. 18), Community Design Guidelines (Resolution 95-347), and applicable Specific Plan Policies and/or Specific Plan Design Guidelines will prevent significant impacts in urban settings as it relates to items a and b, below.

Discussion of Checklist Answers:

a–b) There are no designated or eligible scenic vistas or scenic highways within or adjacent to the City of Roseville.

c) The project site is in an urban setting and has street frontage on all four sides, with a future high density residential parcel to the north, a multi-family apartment complex to the east, low density residential uses to the south, and commercial uses to the west. The City of Roseville has adopted Community Design Guidelines (CDG) to establish common design elements and expectations for development within the City. The CDG includes provisions related to architectural design, site design and landscape design, to enhance the visual character of the urban environment. The CDG recommends preserving, to the extent feasible, visual resources such as native oak trees and creek or wetland resources. The site does not contain any creek or wetland resources; however, the project will require the removal of twenty-four (24) native oak trees on the project site, and therefore requires a Tree Permit. Consistent with the City's Tree Preservation ordinance (RMC Ch. 19.66), the Tree Permit would contain conditions of approval that include protective measures for the trees to remain on site, and mitigation measures that include payment of in-lieu mitigation fees to compensate for oak tree encroachment and removal. The project has been reviewed by City staff and was found to be consistent with the goals and policies of the CDG, the WRSP, and applicable zoning regulations. As such, impacts of the project related to this criterion are less than significant.

d) The project involves nighttime lighting to provide for the security and safety of project users. However, the project is already located within an urbanized setting with many existing lighting sources. Lighting for the project is conditioned to comply with City standards (i.e., Community Design Guidelines) to limit the height of light standards and to require cut-off lenses and glare shields to minimize light and glare impacts. The project will not create a new source of substantial light. None of the project elements are highly reflective, and therefore the project will not contribute to an increased source of glare. Impacts of the project are less than significant.

II. Agricultural & Forestry Resources

The State Department of Conservation oversees the Farmland Mapping and Monitoring Program, which was established to document the location, quality, and quantity of agricultural lands, and the conversion of those lands over time. The primary land use classifications on the maps generated through this program are: Urban and Built Up Land, Grazing Land, Farmland of Local Importance, Unique Farmland, Farmland of Statewide Importance, and Prime Farmland. According to the current California Department of Conservation Placer County Important Farmland Map (2012), the majority of the City of Roseville is designated as Urban and Built Up Land and most of the open space areas of the City are designated as Grazing Land. There are a few areas designated as Farmland of Local Importance and two small areas designated as Unique Farmland located on the western side of the City along Baseline Road. The current Williamson Act Contract map (2013/2014) produced by the Department of Conservation shows that there are no Williamson Act contracts within the City, and only one (on PFE Road) that is adjacent to the City. None of the land within the City is considered forest land by the Board of Forestry and Fire Protection.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

Thresholds of Significance and Regulatory Setting:

Unique Farmland, Farmland of Statewide Importance, and Prime Farmland are called out as protected farmland categories within CEQA Guidelines Appendix G. Neither the City nor the State has adopted quantified significance thresholds related to impacts to protected farmland categories or to agricultural and forestry resources. For the purpose of this study, the significance thresholds are as stated in CEQA Guidelines Appendix G, as shown in a–e of the checklist above.

Discussion of Checklist Answers:

a–e) The project site is not used for agricultural purposes, does not include agricultural zoning, is not within or adjacent to one of the areas of the City designated as a protected farmland category on the Placer County Important Farmland map, is not within or adjacent to land within a Williamson Act Contract, and is not considered forest land. Given the foregoing, the proposed project will have no impact on agricultural resources.

III. Air Quality

The City of Roseville, along with the south Placer County area, is located in the Sacramento Valley Air Basin (SVAB). The SVAB is within the Sacramento Federal Ozone Non-Attainment Area. Under the Clean Air Act, Placer County has been designated a "serious non-attainment" area for the federal 8-hour ozone standard, "non-attainment" for the state ozone standard, and a "non-attainment" area for the federal and state PM₁₀ standard.

(particulate matter less than 10 microns in diameter). Within Placer County, the Placer County Air Pollution Control District (PCAPCD) is responsible for ensuring that emission standards are not violated.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Thresholds of Significance and Regulatory Setting:

In responding to checklist items a, b, and d, project-related air emissions would have a significant effect if they would result in concentrations that either violate an ambient air quality standard or contribute to an existing air quality violation. To assist in making this determination, the PCAPCD adopted thresholds of significance, which were developed by considering both the health-based ambient air quality standards and the attainment strategies outlined in the State Implementation Plan. The PCAPCD-recommended significance threshold for reactive organic gases (ROG) and nitrogen oxides (NO_x) is 82 pounds daily during construction and 55 pounds daily during operation, and for particulate matter (PM) is 82 pounds per day during both construction and operation. For all other constituents, significance is determined based on the concentration-based limits in the Federal and State Ambient Air Quality Standards. Toxic Air Contaminants (TAC) are also of public health concern, but no thresholds or standards are provided because they are considered to have no safe level of exposure. Analysis of TAC is based on the *Air Quality and Land Use Handbook – A Community Health Perspective* (April 2005, California Air Resources Board), which lists TAC sources and recommended buffer distances from sensitive uses. For checklist item c, the PCAPCD's *CEQA Air Quality Handbook (Handbook)* recommends that the same thresholds used for the project analysis be used for the cumulative impact analysis.

With regard to checklist item d, there are no quantified significance thresholds for exposure to objectionable odors. Significance is determined after taking into account multiple factors, including screening distances from odor sources (as found in the PCAPCD CEQA Handbook), the direction and frequency of prevailing winds, the time of day when odors are present, and the nature and intensity of the odor source.

Discussion of Checklist Answers:

a-b) Analyses are not included for sulfur dioxide, lead, and other constituents because there are no mass emission thresholds; these are concentration-based limits in the Federal and State Ambient Air Quality Standards which require substantial, point-source emissions (e.g. refineries, concrete plants, etc) before exceedance will occur, and the SVAB is in attainment for these constituents. Likewise, carbon monoxide is not analyzed because the SVAB is in attainment for this constituent, and it requires high localized concentrations (called carbon monoxide “hot spots”) before the ambient air quality standard would be exceeded. “Hot spots” are typically associated with heavy traffic congestion occurring at high-volume roadway intersections. The Amoruso Ranch EIR analysis of Citywide traffic indicated that 198 out of 226 signalized intersections would operate at level of service C or better—that is, they will not experience heavy traffic congestion. It further indicated that analyses of existing CO concentrations at the most congested intersections in Roseville show that CO levels are well below federal and state ambient air quality standards. The discussions below focus on emissions of ROG, NO_x, or PM.

PCAPCD recommends that lead agencies use the California Emissions Estimator Model (CalEEMod) to quantify a project’s construction and operational emissions for criterial air pollutants (NO_x, ROG, and PM). The results are then compared to the significance thresholds established by the district, as detailed above. However, according to PCAPCD’s published screening table, general commercial projects smaller than 249,099 square feet will not result in NO_x emissions that exceed 55 lbs/day, and therefore modeling is not required. Typically, NO_x emissions are substantially higher than ROG and PM₁₀; therefore, it can be assumed that projects that do not exceed the NO_x threshold will not exceed the ROG and PM₁₀ thresholds, and will not result in a significant impact related to operational emissions. The project proposes the construction of a shopping center consisting of six buildings totaling approximately 82,100 square feet, which is well below PCAPCD’s modeled example. Thus, the project is not expected to result in construction or operational emissions that would exceed the district’s thresholds for significance.

c) The project includes the construction of a gas station consisting of twelve (12) fuel pumps and an approximate 3,500 square-foot convenience store and car wash. A gasoline facility is a source of gasoline vapors that include TACs, primarily benzene. Prior to construction and operation of the gasoline facility, the applicant is required to obtain an Authority to Construct (ATC) permit from the PCAPCD. A Health Risk Analysis is required as part of the ATC permit in order to determine the potential cancer risk that will be generated as a result of the project. The applicant provided a project-specific Health Risk Analysis (Attachment 3), prepared by Trinity Consultants in March 2020, which concluded the annual amount of gasoline dispensed from the facility will be below the significance threshold for cancer risk of 10 in one million.

The Health Risk Analysis determined that the maximum cancer residential risk associated with the project would be 4.45 cancers/million, which is below the PCAPCD’s significance threshold of 10 cancers/million. The Analysis determined that the maximum non-cancer risks at nearby homes would be a hazard index (HI) of 0.02 for maximum chronic non-cancer risk and an HI of 0.23 for maximum acute non-cancer risk, both numbers well below the PCAPCD’s significance threshold of 1.0 HI for both chronic and acute non-cancer health risks. Based on these factors, impacts are less than significant.

d) Diesel fumes from construction equipment and delivery trucks are often found to be objectionable; however, construction is temporary and diesel emissions are minimal and regulated. Typical urban projects such as residences and retail businesses generally do not result in substantial objectionable odors when operated in compliance with City Ordinances (e.g. proper trash disposal and storage). The Project is a typical urban development that lacks any characteristics that would cause the generation of substantial unpleasant odors. Thus, construction and operation of the proposed project would not result in the creation of objectionable odors affecting a substantial number of people. A review of the project surroundings indicates that there are no substantial odor-generating uses near the project site; the project location meets the recommended screening distances from odor-generators provided by the PCAPCD. Impacts related to odors are less than significant.

IV. Biological Resources

The project site is currently undeveloped and consists of annual grasses and several native oak trees. City staff determined there are no evidence of wetlands or designated open space areas on the site.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

Thresholds of Significance and Regulatory Setting:

There is no ironclad definition of significance as it relates to biological resources. Thus, the significance of impacts to biological resources is defined by the use of expert judgment supported by facts, and relies on the policies, codes, and regulations adopted by the City and by regulatory agencies which relate to biological resources (as cited and described in the Discussion of Checklist Answers section). Thresholds for assessing the significance of environmental impacts are based on the CEQA Guidelines checklist items a–f, above. Consistent with CEQA Guidelines Section 15065, a project may have a significant effect on the environment if:

The project has the potential to substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; [or] substantially reduce the number or restrict the range of an endangered, rare or threatened species . . .

Various agencies regulate impacts to the habitats and animals addressed by the CEQA Guidelines checklist. These include the United States Fish and Wildlife Service, National Oceanic and Atmospheric Administration–Fisheries, United States Army Corps of Engineers, Central Valley Regional Water Quality Control Board, and California Department of Fish and Wildlife. The primary regulations affecting biological resources are described in the sections below.

Checklist item a addresses impacts to special status species. A “special status” species is one which has been identified as having relative scarcity and/or declining populations. Special status species include those formally listed as threatened or endangered, those proposed for formal listing, candidates for federal listing, and those classified as species of special concern. Also included are those species considered to be “fully protected” by the California Department of Fish and Wildlife (California Fish and Wildlife), those granted “special animal” status for tracking and monitoring purposes, and those plant species considered to be rare, threatened, or endangered in California by the California Native Plant Society (CNPS). The primary regulatory protections for special status species are within the Federal Endangered Species Act, California Endangered Species Act, California Fish and Game Code, and the Federal Migratory Bird Treaty Act (MBTA).

Checklist item b addresses all “sensitive natural communities” that may be affected by local, state, or federal regulations/policies while checklist item c focuses specifically on one type of such a community: federally-protected wetlands. Focusing first on wetlands, there are two questions to be posed in examining wet habitats: the first is whether the wetted area meets the technical definition of a wetland, making it subject to checklist item b, and the second is whether the wetland is subject to federal jurisdiction, making it subject to checklist item c.

The 1987 Army Corps Wetlands Delineation Manual is used to determine whether an area meets the technical criteria for a wetland. A delineation verification by the Army Corps verifies the size and condition of the wetlands and other waters in question, and determines the extent of government jurisdiction as it relates to Section 404 of the Federal Clean Water Act and Section 401 of the State Clean Water Act.

The Clean Water Act protects all “navigable waters”, which are defined as traditional navigable waters that are or were used for commerce, or may be used for interstate commerce; tributaries of covered waters; and wetlands adjacent to covered waters, including tributaries. Non-navigable waters are called isolated wetlands, and are not subject to either the Federal or State Clean Water Act. Thus, isolated wetlands are not subject to federal wetland protection regulations. However, in addition to the Clean Water Act, the State also has jurisdiction over impacts to surface waters through the Porter-Cologne Water Quality Control Act (Porter-Cologne), which does not require that waters be “navigable”. For this reason, isolated wetlands are regulated by the State of California pursuant to Porter-Cologne. The City of Roseville General Plan also provides protection for wetlands, including isolated wetlands, pursuant to the General Plan Open Space and Conservation Element. Federal, State and City regulations/policies all seek to achieve no net loss of wetland acreage, values, or function.

Aside from wetlands, checklist item b also addresses other “sensitive natural communities,” which includes any habitats protected by local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. The City of Roseville General Plan Open Space and Conservation Element includes policies for the protection of riparian areas (streamside habitat) and floodplain areas; these are Vegetation and Wildlife section Policies 2 and 3. Policy 4 also directs preservation of additional area around stream corridors and floodplain if there is sensitive woodland, grassland, or other habitat which could be made part of a contiguous open space area. Other than wetlands, which were already discussed, US Fish and Wildlife and California Department of Fish and Wildlife habitat protections generally result from species protections, and are thus addressed via checklist item a.

For checklist item d, there are no regulations specific to the protection of migratory corridors. This item is addressed by an analysis of the habitats present in the vicinity and analyzing the probable effects on access to those habitats which will result from a project.

The City of Roseville Tree Preservation ordinance (RMC Ch.19.66) requires protection of native oak trees, and compensation for oak tree removal. The Findings of the Implementing Procedures indicate that compliance with the City of Roseville Tree Preservation ordinance (RMC Ch.19.66) will prevent significant impacts related to loss of native oak trees, referenced by item e, above.

Regarding checklist item f, there are no adopted Habitat Conservation Plans within the City of Roseville.

Discussion of Checklist Answers:

a) The project will require the removal of several oak trees, which could potentially provide habitat for nesting birds. Construction activities could also have the potential to disrupt offsite nesting species. A pre-construction nesting survey, **Mitigation Measure BIO-1**, is required in order to ensure that nesting birds are not harmed during construction. Ground disturbing activities shall not occur during the active nesting season, if it is necessary to conduct such activities during the nesting season, pre-construction surveys and mitigation as described in Mitigation Measure BIO-1, would be required. Compliance with Mitigation Measure BIO-1 will ensure that potential impacts to nesting birds are less than significant.

b-c) As discussed in the Environmental Setting, the project site is located in an urbanized area. The site is adjacent to paved roadways and is adjacent to residential and commercial uses. The property does not contain sensitive natural communities which are protected by federal, state or local policies, nor does it contain any wetlands; thus, the project will have no impact with regard to this criterion.

d) The City includes an interconnected network of open space corridors and preserves located throughout the City, to ensure that the movement of wildlife is not substantially impeded as the City develops. The development of the project site will not negatively impact these existing and planned open space corridors, nor is the project site located in an area that has been designated by the City, United States Fish and Wildlife, or California Department of Fish and Wildlife as vital or important for the movement of wildlife or the use of native wildlife nursery sites.

e) As defined by the City of Roseville Zoning Ordinance (Chapter 19.66, Tree Preservation), native oak trees greater than six (6") diameter at breast height are defined as protected. A Tree Permit is required for the removal of any protected tree, and for any regulated activity within the protected zone of a protected tree where the encroachment exceeds 20 percent. An arborist report including a tree inventory summary was provided by California Tree and Landscape Consulting, Inc., dated February 20, 2020 (Attachment 4). A total of 33 protected oak trees were identified on the property. Of the 33 trees, 28 trees with a total aggregate diameter of 721 inches are proposed for removal to facilitate development of the site, while five (5) trees are proposed to be retained (see Table 2 and Table 3). Eight (8) of the trees proposed for removal were identified as having failed and being in down and dead condition. These trees are identified in Table 2. The arborist's recommendations include monitoring any excavation for the retaining wall footings for the trees to remain on the site. The Tree Permit would contain conditions of approval to follow the recommendations of the Arborist Report, and mitigation measures that include payment of in-lieu mitigation fees to compensate for oak tree removal and on-site replacement plantings consisting of both native and non-native tree species. Any deviation from the approved permit would require a Tree Permit Modification, which would require approval by the City.

The above tree impacts were already anticipated and evaluated within the West Roseville Specific Plan EIR (prior EIR). The prior EIR included an evaluation of tree canopy loss within the entire Specific Plan area, and preserved the majority of the oak groves within open space. Figure 4.7-6 of the prior EIR (see Figure 3, EIR Tree Locations) shows the project site as a Community Commercial parcel, and identified the oak trees on this site as being lost due to development. The EIR estimated a total loss of nearly 6,000 inches of oak trees, and to offset this impact included a tree mitigation plan to plant nearly 7,000 oak trees within the WRSP open space. The proposed project is consistent with the prior EIR analysis, and thus does not result in new or previously undisclosed impacts to native oak tree resources. The EIR required future projects comply with the City's Tree Ordinance; this project includes a Tree Permit, consistent with the City's Tree Ordinance. Consistency with the requirements of the Tree Permit for this project will ensure that impacts are less than significant.

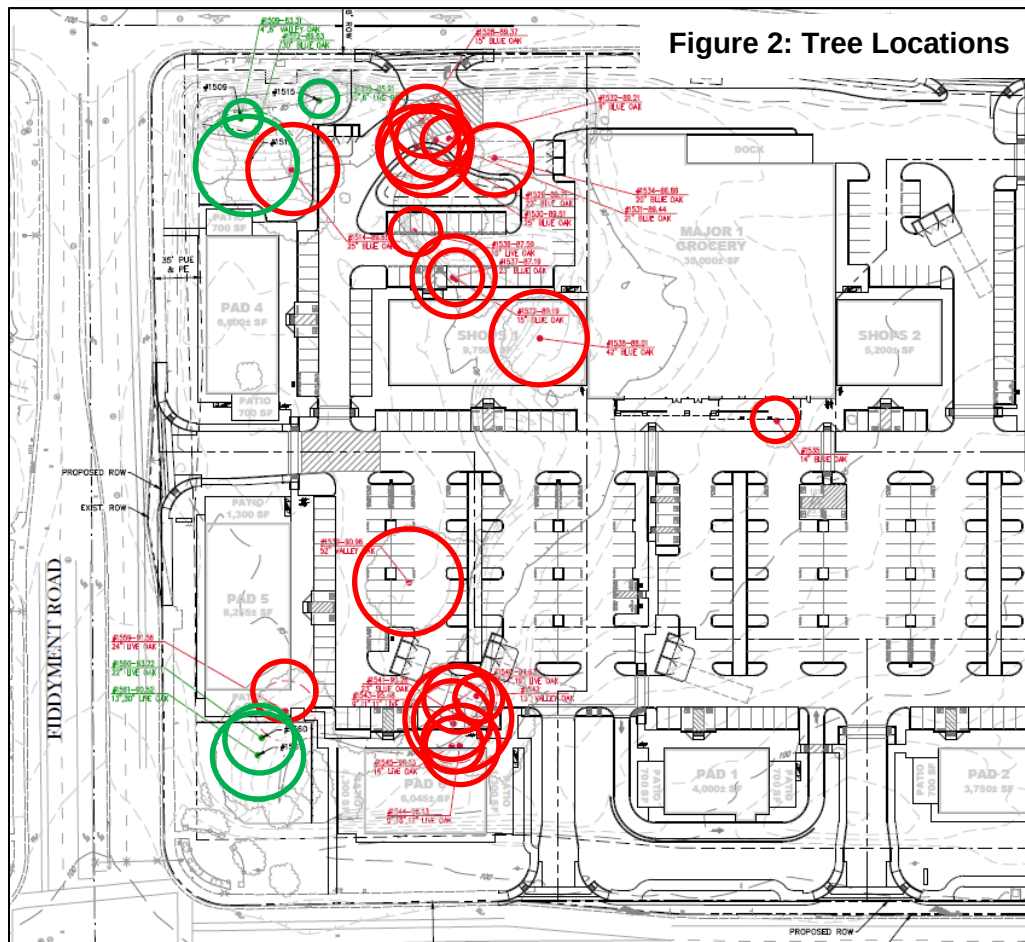


Figure 3: EIR Tree Locations

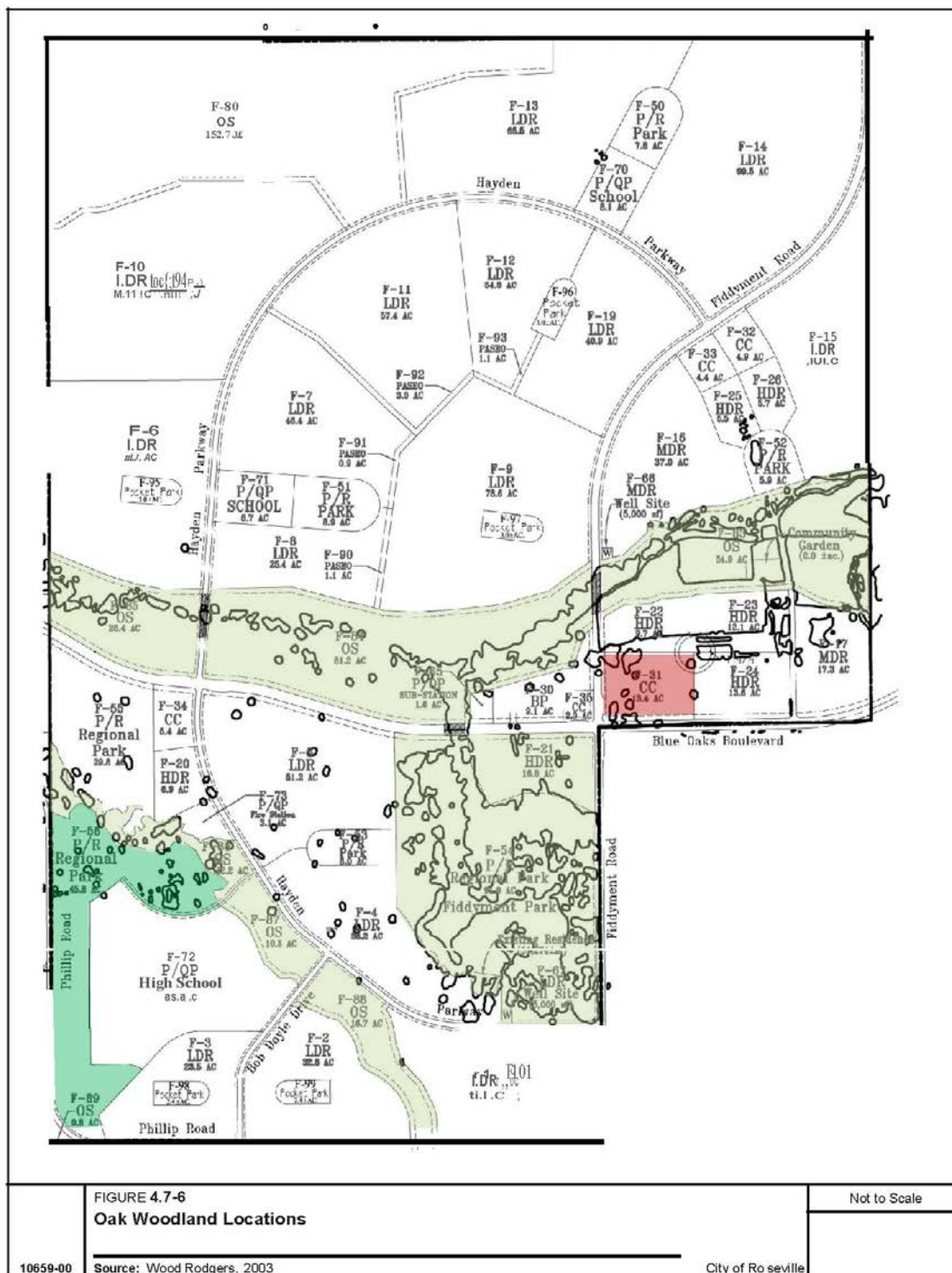


Table 2: Trees Proposed for Removal

Tree Number	Common Name	Structure Health	Dripline Radius (inches)	Total Diameter at Breast Height (DBH) (inches)
1510	Blue Oak	Failed	-	23
1513	Blue Oak	Failed	-	29
1514	Blue Oak	Poor to Fair	33	28
1521	Blue Oak	Failed	-	26
1522	Blue Oak	Fair	22	18
1523	Blue Oak	Failed	-	23
1528	Blue Oak	Poor to Fair	24	17
1529	Blue Oak	Poor to Fair	32	26
1530	Blue Oak	Poor to Fair	33	27
1531	Blue Oak	Poor to Fair	31	24
1532	Blue Oak	Poor	9	8
1533	Blue Oak	Failed	-	20
1534	Blue Oak	Poor	30	21
1535	Blue Oak	Fair	17	14
1536	Interior Live Oak	Fair	22	21
1537	Blue Oak	Fair	31	26
1538	Blue Oak	Fair	37	45
1539	Valley Oak	Poor	39	57
1540	Interior Live Oak	Poor	38	35
1541	Blue Oak	Fair	39	25
1542	Valley Oak	Poor to Fair	16	13
1543	Interior Live Oak	Poor to Fair	32	37
1544	Interior Live Oak	Poor to Fair	32	53
1545	Interior Live Oak	Poor to Fair	29	21
1559	Interior Live Oak	Poor to Fair	26	26
1562	Interior Live Oak	Failed	-	17
1563	Interior Live Oak	Failed	32	21
1564	Blue Oak	Failed	-	20
Total Mitigation Inches				721

Table 3: Trees Retained

Tree Number	Common Name	Structure Health	Dripline Radius (inches)	Total Diameter at Breast Height (DBH) (inches)
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1509	Valley Oak	Fair	17	16
1512	Blue Oak	Poor to Fair	25	24
1515	Interior Live Oak	Poor to Fair	16	17
1560	Interior Live Oak	Fair	28	25
1561	Interior Live Oak	Poor to Fair	30	40
Total Inches				122

f) There are no Habitat Conservation Plans; Natural Community Conservation Plans; or other approved local, regional, or state habitat conservation plans that apply to the project site.

V. Cultural Resources

As described within the Open Space and Conservation Element of the City of Roseville General Plan, the Roseville region was within the territory of the Nisenan (also Southern Maidu or Valley Maidu). Two large permanent Nisenan habitation sites have been identified and protected within the City's open space (in Maidu Park). Numerous smaller cultural resources, such as midden deposits and bedrock mortars, have also been recorded in the City. The gold rush which began in 1848 marked another settlement period, and evidence of Roseville's ranching and mining past are still found today. Historic features include rock walls, ditches, low terraces, and other remnants of settlement and activity. A majority of documented sites within the City are located in areas designated for open space uses.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of an historic resource pursuant to Section 15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?			X	
c) Disturb any human remains, including those interred outside of dedicated cemeteries?			X	

Thresholds of Significance and Regulatory Setting:

The significance of impacts to cultural resources is based directly on the CEQA Guidelines checklist items a–e listed above. The Archaeological, Historic, and Cultural Resources section of the City of Roseville General Plan also directs the proper evaluation of and, when feasible, protection of significant resources (Policies 1 and 2). There are also various federal and State regulations regarding the treatment and protection of cultural resources, including the National Historic Preservation Act and the Antiquities Act (which regulate items of significance in history), Section 7050.5 of the California Health and Safety Code, Section 5097.9 of the California Public

Resources Code (which regulates the treatment of human remains) and Section 21073 et seq. of the California Public Resources Code (regarding Tribal Cultural Resources). The CEQA Guidelines also contains specific sections, other than the checklist items, related to the treatment of effects on historic resources.

Pursuant to the CEQA Guidelines, if it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2 (a), (b), and (c)). A *historical resource* is a resource listed, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR) (Section 21084.1); a resource included in a local register of historical resources (Section 15064.5(a)(2)); or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (Section 15064.5 (a)(3)). Public Resources Code Section 5024.1 requires evaluation of historical resources to determine their eligibility for listing on the CRHR.

Discussion of Checklist Answers:

a–c) No cultural resources are known to exist on the project site per the WRSP EIR; however, standard mitigation measures apply which are designed to reduce impacts to cultural resources, should any be found on-site. The measure requires an immediate cessation of work, and contact with the appropriate agencies to address the resource before work can resume. This mitigation need not be applied herein, as it is already applicable and required of the project pursuant to the WRSP. The project will not result in any new impacts beyond those already discussed and disclosed in the WRSP EIR; thus, project-specific impacts are less than significant.

VI. Energy

Roseville Electric provides electrical power in the City and Pacific Gas and Electric (PG&E) provides natural gas. The City purchases wholesale electrical power from both the Western Area Power Administration (WAPA), which is generated by the federal government's Central Valley Project, which produces 100 percent hydroelectric energy sources from a system of dams, reservoirs, and power plants within central and northern California. In addition, up to 50 percent of the City's power is generated at the City-owned Roseville Energy Park (REP). The REP is a 160 megawatt natural-gas-fired power plant that uses a combined cycle gas turbine technology. The City also owns the 48 megawatt combustion-turbine Roseville Power Plant 2 (REP 2), which is used for peaking energy. The City's electric power mix varies from year-to-year, but according to the most recent Citywide energy analysis (the Amoruso Ranch Environmental Impact Report), the mix in 2013/2014 was 25% eligible renewable (geothermal, small hydroelectric, and wind), 14% hydroelectric, 48% natural gas, and 13% from other sources (power purchased by contract).

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Thresholds of Significance and Regulatory Setting:

Established in 2002, California's Renewable Portfolio Standard (RPS) currently requires that 33 percent of electricity retail sales be served by renewable energy resources by 2020, and 50 percent by 2030. The City published a Renewables Portfolio Standard Procurement Plan in June 2018, and continues to comply with the RPS reporting and requirements and standards. There are no numeric significance thresholds to define "wasteful, inefficient, or unnecessary" energy consumption, and therefore significance is based on CEQA Guidelines checklist items a and b, above, and by the use of expert judgment supported by facts, relying on the policies, codes, and regulations adopted by the City and by regulatory agencies which relate to energy. The analysis considers compliance with regulations and standards, project design as it relates to energy use (including transportation energy), whether the project will result in a substantial unplanned demand on the City's energy resources, and whether the project will impede the ability of the City to meet the RPS standards.

Discussion of Checklist Answers:

a-b) The project would consume energy both during project construction and during project operation. During construction, fossil fuels, electricity, and natural gas would be used by construction vehicles and equipment. However, the energy consumed during construction would be temporary, and would not represent a significant demand on available resources. There are no unusual project characteristics that would necessitate the use of construction equipment or methods that would be less energy-efficient or which would be wasteful.

The completed project would consume energy related to building operation, exterior lighting, landscape irrigation and maintenance, and vehicle trips to and from the use. In accordance with California Energy Code Title 24, the project would be required to meet the Building Energy Efficiency Standards. This includes standards for water and space heating and cooling equipment; insulation for doors, pipes, walls, and ceilings; and appliances, to name a few. The project would also be eligible for rebates and other financial incentives from both the electric and gas providers for the purchase of energy-efficient appliances and systems, which would further reduce the operational energy demand of the project. The project was distributed to both PG&E and Roseville Electric for comments, and was found to conform to the standards of both providers; energy supplies are available to serve the project.

The project is consistent with the existing land use designation of Community Commercial, and has therefore been assumed for development with commercial uses in citywide environmental analyses, such as in the Amoruso Ranch Specific Plan, which updated the City's General Plan. The project is therefore consistent with the current citywide assessment of energy demand, and will not result in substantial unplanned demands. In addition, based on the foregoing analysis, the project will not result in inefficient, wasteful, or unnecessary consumption of energy; impacts are less than significant.

VII. Geology and Soils

As described in the Safety Element of the City of Roseville General Plan, there are three inactive faults (Volcano Hill, Linda Creek, and an unnamed fault) in the vicinity, but there are no known active seismic faults within Placer County. The last seismic event recorded in the South Placer area occurred in 1908, and is estimated to have been at least a 4.0 on the Richter Scale. Due to the geographic location and soil characteristics within the City, the General Plan indicates that soil liquefaction, landslides, and subsidence are not a significant risk in the area.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
i) Ruptures of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)			X	
• Strong seismic ground shaking?			X	
• Seismic-related ground failure, including liquefaction?			X	
• Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located in a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				X

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to geology and soils is based directly on the CEQA Guidelines checklist items a–e listed above. Regulations applicable to this topic include the Alquist-Priolo Act, which addresses earthquake safety in building permits, and the Seismic Hazards Mapping Act, which requires the state to gather and publish data on the location and risk of seismic faults.

The Findings of the Implementing Procedures indicate that compliance with the Flood Damage Prevention Ordinance (RMC Ch.9.80) and Design/Construction Standards (Resolution 07-107) will prevent significant impacts related to checklist item b. The Ordinance and standards include permit requirements for construction and development in erosion-prone areas and ensure that grading activities will not result in significant soil erosion or loss of topsoil. The use of septic tanks or alternative waste systems is not permitted in the City of Roseville, and therefore no analysis of criterion e is necessary.

Discussion of Checklist Answers:

a) The project will not expose people or structures to potential substantial adverse effects involving seismic shaking, ground failure or landslides.

i–iii) According to United States Geological Service mapping and literature, active faults are largely considered to be those which have had movement within the last 10,000 years (within the Holocene or Historic time periods)¹ and there are no major active faults in Placer County. The California Geological Survey has prepared a map of the state which shows the earthquake shaking potential of areas throughout California based primarily on an area's distance from known active faults. The map shows that the City lies in a relatively low-intensity ground-shaking zone. Commercial, institutional, and residential buildings as well as all related infrastructure are required, in conformance with Chapter 16, *Structural Design Requirements*, Division IV, *Earthquake Design* of the California Building Code, to lessen the exposure to potentially damaging vibrations through seismic-resistant design. In compliance with the Code, all structures in the Project area would be well-built to withstand ground shaking from possible earthquakes in the region; impacts are less than significant.

iv) Landslides typically occur where soils on steep slopes become saturated or where natural or manmade conditions have taken away supporting structures and vegetation. The existing and proposed slopes of the project site are not steep enough to present a hazard during development or upon completion of the

¹ United States Geological Survey, <http://earthquake.usgs.gov/learn/glossary/?term=active%20fault>, Accessed January 2016

project. In addition, measures would be incorporated during construction to shore minor slopes and prevent potential earth movement. Therefore, impacts associated with landslides are less than significant.

b) Grading activities will result in the disruption, displacement, compaction and over-covering of soils associated with site preparation (grading and trenching for utilities). Grading activities for the project will be limited to the project site. Grading activities require a grading permit from the Engineering Division. The grading permit is reviewed for compliance with the City's Improvement Standards, including the provision of proper drainage, appropriate dust control, and erosion control measures. Grading and erosion control measures will be incorporated into the required grading plans and improvement plans. Therefore, the impacts associated with disruption, displacement, and compaction of soils associated with the project are less than significant.

c, d) A review of the Natural Resources Conservation Service Soil Survey for Placer County, accessed via the Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/>), indicates that the soils on the site are Cometa-Fiddymont complex, 1 to 5 percent slopes, Ramona sandy loam, 2 to 9 percent slopes, and Xerofluvents, frequently flooded, none of which are listed as geologically unstable or sensitive. Therefore, the project has no impacts related to this criteria.

f) No paleontological resources are known to exist on the project site per the WRSP EIR; however, standard mitigation measures apply which are designed to reduce impacts to such resources, should any be found on-site. The measure requires an immediate cessation of work, and contact with the appropriate agencies to address the resource before work can resume. With these measures in place, project-specific impacts are less than significant.

VIII. Greenhouse Gases

Greenhouse gases trap heat in the earth's atmosphere. The principal greenhouse gases (GHGs) that enter the atmosphere because of human activities are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. As explained by the United States Environmental Protection Agency², global average temperature has increased by more than 1.5 degrees Fahrenheit since the late 1800s, and most of the warming of the past half century has been caused by human emissions. The City has taken proactive steps to reduce greenhouse gas emissions, which include the introduction of General Plan policies to reduce emissions, changes to City operations, and climate action initiatives.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

² <http://www3.epa.gov/climatechange/science/overview.html>, Accessed January 2016

Thresholds of Significance and Regulatory Setting:

In Assembly Bill 32 (the California Global Warming Solutions Act), signed by Governor Schwarzenegger of California in September 2006, the legislature found that climate change resulting from global warming was a threat to California, and directed that “the State Air Resources Board design emissions reduction measures to meet the statewide emissions limits for greenhouse gases . . .”. The target established in AB 32 was to reduce emissions to 1990 levels by the year 2020. CARB subsequently prepared the *Climate Change Scoping Plan* (Scoping Plan) for California, which was approved in 2008. The Scoping Plan provides the outline for actions to reduce California's GHG emissions. CARB's updated August 2011 Scoping Plan calculated a reduction needed of 21.7% from future “Business As Usual” (BAU) conditions in the year 2020. The current Scoping Plan (adopted May 2014) indicates that statewide emissions of GHG in 1990 amounted to 431 million metric tons, and that the 2020 “Business As Usual” (BAU) scenario is estimated as 509³ million metric tons, which would require a reduction of 15.3% from 2020 BAU. In addition to this, Senate Bill 32 was signed by the Governor on September 8, 2016, to establish a reduction target of 40 percent below 1990 levels by 2030. The Air Resources Board is currently updating the Scoping Plan to reflect this target.

The Placer County Air Pollution Control District (PCAPCD) recommends that thresholds of significance for GHG be related to AB 32 reduction goals, and has adopted thresholds of significance which take into account the 2030 reduction target. The thresholds include a de minimis and a bright-line maximum threshold. Any project emitting less than 1,100 metric tons of carbon dioxide equivalents per year (MT CO₂e/yr) during construction or operation results in less than significant impacts. The PCAPCD considers any project with emissions greater than the bright-line cap of 10,000 MT CO₂e/yr to have significant impacts. For projects exceeding the de minimum threshold but below the bright-line threshold, comparison to the appropriate efficiency threshold is recommended. The significance thresholds are shown in Table 1 below.

Table 1: GHG Significance Thresholds

Bright-line Threshold 10,000 MT CO ₂ e/yr			
Residential Efficiency (MT CO ₂ e/capita ¹)		Non-Residential Efficiency (MT CO ₂ e/ksf ²)	
Urban	Rural	Urban	Rural
4.5	5.5	26.5	27.3
De Minimis Threshold 1,100 MT CO ₂ e/yr			
1. Per Capita = per person			
2. Per ksf = per 1,000 square feet of building			

Discussion of Checklist Answers:

a–b) Greenhouse gases are primarily emitted as a result of vehicle operation associated with trips to and from a project, and energy consumption from operation of the buildings. Greenhouse gases from vehicles is assessed based on the vehicle miles traveled (VMT) resulting from a project, on a Citywide basis. Residential projects, destination centers (such as a regional mall), and major employers tend to increase VMT in a study area, either by adding new residents traveling in an area, or by encouraging longer trip lengths and drawing in trips from a broader regional area. However, non-residential projects and neighborhood-serving uses (e.g. neighborhood parks) tend to lower VMT in a study area because they do not generate new trips within the study area, they divert existing trips. These trips are diverted because the new use location is closer to home, on their way to another destination (e.g. work), or is otherwise more convenient.

³ Includes Pavely and Renewables Portfolio Standard reduction

As discussed, the project would not be anticipated to increase VMT, since it is providing services in closer proximity to developed residential areas of the City. In addition, as discussed in the Transportation section of this Initial Study, the project is anticipated to result in a lower trip generation than what was assumed in the City's traffic model for this area. Therefore, the focus of this analysis is on the emissions which would result from the operation of the proposed buildings. CalEEMod Version 2016.3.2 was used to calculate the operational emissions of the project (see Attachment 5), which includes energy run to the buildings, area emissions such as landscape equipment to maintain the site, and water and wastewater energy demands. According to the CalEEMod results, the project would result in annual operational emissions of 726.45 MT CO₂e, which is below the de minimis threshold of 1,100 MT CO₂e. Therefore, the proposed project would not result in significant operational emissions of GHG.

Construction-related GHG emissions occur at one point in time and are therefore not typically expected to significantly contribute to climate change. Climate change is a cumulative effect that occurs over time, as emissions increase on a year-to-year basis due to increases in developed area and other factors; construction emissions are a one-time emission source, which end once the project is built. The CalEEMod results indicate the project would result in annual construction emissions of 338.07 CO₂e in the most active construction year, which is below the de minimis threshold of 1,100 MT CO₂e/yr. Thus, the project-generated GHG emissions would not conflict with, and are consistent with, the State goals listed in AB32 and other policies and regulations adopted by the California Air Resources Board. This impact is considered less than significant.

IX. Hazards and Hazardous Materials

There are no hazardous cleanup sites of record within 1,000 feet of the site according to both the State Water Resources Control Envirostor database (<http://geotracker.waterboards.ca.gov/>) and the Department of Toxic Substances Control Envirostor database (<http://www.envirostor.dtsc.ca.gov/public/>). The project is not located on a site where existing hazardous materials have been identified, and the project does not have the potential to expose individuals to hazardous materials.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to hazardous materials is based directly on the CEQA Guidelines checklist items a–h listed above. A material is defined as hazardous if it appears on a list of hazardous materials prepared by a federal, state or local regulatory agency, or if it has characteristics defined as hazardous by such an agency. The determination of significance based on the above criteria depends on the probable frequency and severity of consequences to people who might be exposed to the health hazard, and the degree to which Project design or existing regulations would reduce the frequency of or severity of exposure. As an example, products commonly used for household cleaning are classified as hazardous when transported in large quantities, but one would not conclude that the presence of small quantities of household cleaners at a home would pose a risk to a school located within ¼-mile.

Many federal and State agencies regulate hazards and hazardous substances, including the United States Environmental Protection Agency (US EPA), California Department of Toxic Substances Control (DTSC), Central Valley Regional Water Quality Control Board (Regional Water Board), and the California Occupational Safety and Health Administration (CalOSHA). The state has been granted primacy (primary responsibility for oversight) by the US EPA to administer and enforce hazardous waste management programs. State regulations also have detailed planning and management requirements to ensure that hazardous materials are handled, stored, and disposed of properly to reduce human health risks. California regulations pertaining to hazardous waste management are published in the California Code of Regulations (see 8 CCR, 22 CCR, and 23 CCR).

The project is not within an airport land use plan or within two miles of a public or public use airport. Therefore, no further discussion is provided for items e.

Discussion of Checklist Answers:

a-b) Standard construction activities would require the use of hazardous materials such as fuels, oils, lubricants, glues, paints and paint thinners, soaps, bleach, and solvents. These are common household and commercial materials routinely used by both businesses and average members of the public. The materials only pose a hazard if they are improperly used, stored, or transported either through upset conditions (e.g. a vehicle accident) or mishandling. In addition to construction use, the operational project would result in the use of common hazardous materials as well, including bleach, solvents, and herbicides. Regulations pertaining to the transport of materials are codified in 49 Code of Federal Regulations 171–180, and transport regulations are enforced and monitored by the California Department of Transportation and by the California Highway Patrol. Specifications for storage on a construction site are contained in various regulations and codes, including the California Code of Regulations, the Uniform Fire Code, and the California Health and Safety Code. These same codes require that all hazardous materials be used and stored in the manner specified on the material packaging. In addition, compliance with state and federal standards governing gas stations, including the PCAPCD's permitting requirements for such uses, would ensure that the project does not result in significant impacts related to hazards and hazardous materials. Existing regulations and programs are sufficient to ensure that potential impacts as a result of the use or storage of hazardous materials are reduced to less than significant levels.

c) The project is not located within a ¼-mile of an existing or proposed school, and thus there is no impact with respect to this criterion.

d) The project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5⁴; therefore, no impact will occur.

f) This project is located within an area currently receiving City emergency services and development of the site has been anticipated and incorporated into emergency response plans. As such, the project will cause a less than significant impact to the City's Emergency Response or Management Plans. Furthermore, the project will be required to comply with all local, State and federal requirements for the handling of hazardous materials, which will ensure less-than-significant impacts. These will require the following programs:

- A Risk Management and Prevention Program (RMPP) is required of uses that handle toxic and/or hazardous materials in quantities regulated by the California Health and Safety Code and/or the City.
- Businesses that handle toxic or hazardous materials are required to complete a Hazardous Materials Management Program (HMMP) pursuant to local, State, or federal requirements.

g) The California Department of Forestry and Fire Protection (CAL FIRE) is the state agency responsible for wildland fire protection and management. As part of that task, CAL FIRE maintains maps designating

⁴ <http://www.calepa.ca.gov/SiteCleanup/CorteseList/SectionA.htm>

Wildland Fire Hazard Severity zones. The City is not located within a Very High Fire Hazard Severity Zone, and is not in a CAL FIRE responsibility area; fire suppression is entirely within local responsibility. The project site is in an urban area, and therefore would not expose people to any risk from wildland fire. There would be no impact with regard to this criterion.

X. Hydrology and Water Quality

As described in the Open Space and Conservation Element of the City of Roseville General Plan, the City is located within the Pleasant Grove Creek Basin and the Dry Creek Basin. Pleasant Grove Creek and its tributaries drain most of the western and central areas of the City and Dry Creek and its tributaries drain the remainder of the City. Most major stream areas in the City are located within designated open space.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:			X	
i. result in substantial erosion or siltation on or off-site;			X	
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater systems or provide substantial additional sources of polluted runoff; or			X	
iv. impede or redirect flood flows?				X
d) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	
e) In flood hazard, tsunami, or seiches zones, risk release of pollutants due to project inundation?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to hydrology and water quality is based directly on the CEQA Guidelines checklist items a–e listed above. For checklist item a, c (i), d, and e, the Findings of the Implementing Procedures indicate that compliance with the City of Roseville Design/Construction Standards (Resolution 07-107), Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch. 14.20), and Stormwater Quality Design Manual (Resolution 16-152) will prevent significant impacts related to water quality or erosion. The standards require preparation of an erosion and sediment control plan for construction activities and includes designs to control pollutants within post-construction urban water runoff. Likewise, it is indicated that the Drainage Fees for the Dry Creek and Pleasant Grove Watersheds (RMC Ch.4.48) and City of Roseville Design/Construction Standards (Resolution 07-107) will prevent significant impacts related to checklist items c (ii) and c (iii). The ordinance and standards require the collection of drainage fees to fund improvements that mitigate potential flooding impacts, and require the design of a water drainage system that will adequately convey anticipated stormwater flows without increasing the rate or amount of surface runoff. These same ordinances and standards prevent impacts related to groundwater (items a and d), because developers are required to treat and detain all stormwater onsite using stormwater swales and other methods which slow flows and preserve infiltration. Finally, it is indicated that compliance with the Flood Damage Prevention Ordinance (RMC Ch. 9.80) will prevent significant impacts related to items c (iv) and e. The Ordinance includes standard requirements for all new construction, including regulation of development with the potential to impede or redirect flood flows, and prohibits development within flood hazard areas. Impacts from tsunamis and seiches were screened out of the analysis (item e) because the project is not located near a water body or other feature that would pose a risk of such an event.

Discussion of Checklist Answers:

a,c (i),d, e) The project will involve the disturbance of on-site soils and the construction of impervious surfaces, such as asphalt paving. Disturbing the soil can allow sediment to be mobilized by rain or wind, and cause displacement into waterways. To address this and other issues, the developer is required to receive approval of

a grading permit and/or improvement plants prior to the start of construction. The permit or plans are required to incorporate mitigation measures for dust and erosion control. In addition, the City has a National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit issued by the Central Valley Regional Water Quality Control Board which requires the City to reduce pollutants in stormwater to the maximum extent practicable. The City does this, in part, by means of the City's 2016 Design/Construction Standards, which require preparation and implementation of a Stormwater Pollution Prevention Plan. All permanent stormwater quality control measures must be designed to comply with the City's Manual for Stormwater Quality Control Standards for New Development, the City's 2016 Design/Construction Standards, Urban Stormwater Quality Management and Discharge Control Ordinance, and Stormwater Quality Design Manual. For these reasons, impacts related to water quality are less than significant.

b, d) The project does not involve the installation of groundwater wells. The City maintains wells to supplement surface water supplies during multiple dry years, but the effect of groundwater extraction on the aquifer was addressed in the Water Supply Assessment of the Amoruso Ranch Specific Plan EIR, which included a Citywide water analysis. The proposed project is consistent with the General Plan land use designation, and is thus consistent with the citywide Water Supply Assessment. Project impacts related to groundwater extraction are less than significant. Furthermore, all permanent stormwater quality control measures must be designed to comply with the Stormwater Quality Design Manual, which requires the use of bioswales and other onsite detention and infiltration methods. These standards ensure that stormwater will continue to infiltrate into the groundwater aquifer.

c (ii and iii)) The project has been reviewed by City Engineering staff for conformance with City ordinances and standards. The project includes adequate and appropriate facilities to ensure no net increase in the amount or rate of stormwater runoff from the site, and which will adequately convey stormwater flows.

c (iv) and e) The project has been reviewed by City Engineering staff for conformance with City ordinances and standards. The project is not located within either the Federal Emergency Management Agency floodplain or the City's Regulatory Floodplain (defined as the floodplain which will result from full buildout of the City). Therefore, the project will not impede or redirect flood flows, nor will it be inundated. The proposed project is located within an area of flat topography and is not near a waterbody or other feature which could cause a seiche or tsunami. There would be no impact with regard to these criterion.

XI. Land Use and Planning

The project site has a General Plan land use designation and zoning designation of Community Commercial (CC). Surrounding properties have commercial and residential land use and zoning designations, as described in the Background section of this Initial Study.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to land use is based directly on the CEQA Guidelines checklist items a–c listed above. Consistency with applicable City General Plan policies, Improvement Standards, and design standards is already required and part of the City’s processing of permits and plans, so these requirements do not appear as mitigation measures. Land use regulations applicable to the site include the City’s General Plan 2035, the Zoning Ordinance, and the NERSP. The NERSP contains general design guidelines and policies for development within the NERSP as a whole.

Discussion of Checklist Answers:

- a) The project area has been planned for development, including adequate roads, pedestrian paths, and bicycle paths to provide connections within the community. The project involves frontage improvements including new driveways, sidewalks, and pedestrian connections. As such, the project will not physically divide an established community.
- b) With the application for a Tree Permit, the project is consistent with the Zoning Ordinance requirements for the removal and mitigation of oak trees. The project would be required to comply with the City’s Improvement Standards in order to receive a grading permit. The proposed project is consistent with the General Plan and the WRSP, and does not conflict with the City’s policies and regulations adopted for the purpose of avoiding or mitigating an environmental impact.

XII. Mineral Resources

The Surface Mining and Reclamation Act (SMARA) of 1975 requires the State Geologist to classify land into Mineral Resource Zones (MRZ’s) based on the known or inferred mineral resource potential of that land. The California Division of Mines and Geology (CDMG) was historically responsible for the classification and designation of areas containing—or potentially containing—significant mineral resources, though that responsibility now lies with the California Geological Survey (CGS). CDMG published Open File Report 95-10, which provides the mineral classification map for Placer County. A detailed evaluation of mineral resources has not been conducted within the City limits, but MRZ’s have been identified. There are four broad MRZ categories (MRZ-1 through MRZ-4), and only MRZ-2 represents an area of known significant mineral resources. The City of Roseville General Plan EIR included Exhibit 4.1-3, depicting the location of MRZ’s in the City limits. There is only one small MRZ-2 designation area, located at the far eastern edge of the City.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to mineral resources is based directly on the CEQA Guidelines checklist items a and b listed above.

Discussion of Checklist Answers:

a–b) The project site is not in the area of the City known to include any mineral resources that would be of local, regional, or statewide importance; therefore, the project has no impacts on mineral resources.

XIII. Noise

The project site is currently undeveloped and is surrounded by residential and commercial uses, which typically do not generate substantial noise volumes. Both of these roadways are identified as transportation noise sources in the City's General Plan Noise Element. According to the General Plan, the project site is within the 60 dB L_{dn} noise contour for existing roadways and within the 65 dB L_{dn} noise contour for future roadways (City of Roseville 2015, Figure IX-1 and Figure IX-2).

Would the project result in:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive ground borne vibration of ground borne noise levels?			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

Thresholds of Significance and Regulatory Setting:

Standards for transportation noise and non-transportation noise affecting existing or proposed land uses are established within the City of Roseville General Plan Noise Element Table IX-1 and IX-3, and these standards are used as the thresholds to determine the significance of impacts related to items a and c. The significance of other noise impacts is based directly on the CEQA Guidelines checklist items b and c listed above. The Findings of the Implementing Procedures indicate that compliance with the City Noise Regulation (RMC Ch. 9.24) will prevent significant non-transportation noise as it relates to items a and b. The Ordinance establishes noise exposure standards that protect noise-sensitive receptors from a variety of noise sources, including non-transportation/fixed noise, amplified sound, industrial noise, and events on public property. The project is not within an airport land use plan, within two miles of a public or public use airport and there are also no private airstrips in the vicinity of the project area. Therefore, item c has been ruled out from further analysis.

Discussion of Checklist Answers:

a) The City of Roseville General Plan Noise Element includes Policy 7, which requires proposed fixed noise sources to be mitigated so as not to exceed the noise level performance standards contained within Noise Element Table IX-3. These standards are included in Table 4 below. Fixed noise sources are defined as noises that come from a specified area, while moving noise sources are from transportation facilities (roadway noise, train noise, etc.); the proposed project will generate fixed noise.

Table 4: Noise Element Table IX-3

PERFORMANCE STANDARDS FOR NON-TRANSPORTATION NOISE SOURCES OR PROJECTS AFFECTED BY NON-TRANSPORTATION NOISE SOURCES (As Measured at the Property Line of Noise-Sensitive Uses)		
Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq} , dB	50	45
Maximum level, dB	70	65
¹ For municipal power plants consisting primarily of broadband, steady state noise sources, the hourly (L_{eq}) noise standard may be increased up to 10 dB(A), but not exceed 55 dB(A) Hourly L_{eq} dB. Each of the noise levels specified above should be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). No standards have been included for interior noise levels. Standard construction practices should, with exterior noise levels identified, result in acceptable interior noise levels.		

The proposed project is a shopping center including a grocery store and a mix of retail and commercial uses. The project includes two loading dock areas adjacent to the grocery store and Junior Major buildings on the northern portion of the site, south of Harvey Way. The project also includes a gas station with an approximate 3,500 square-foot convenience store building and drive-through car wash on Pad 3, which is located on the southeastern portion of the overall site (see Figure 3). An Environmental Noise Assessment was prepared for the project by Bollard Acoustical Consultants, Inc. (BAC) and is included as Attachment 6. The assessment evaluates noise from the proposed loading dock areas and car wash portion of the gas station. It concluded that the noise generated by on-site truck circulation, loading docks, and car wash dryer operations could potentially exceed the applicable noise level limits at the nearest residential uses. As such, noise mitigation measures are required in order to comply with the General Plan noise standards, and to ensure impacts are less than significant. Each of these noise sources and related mitigation measures are addressed separately, below.

On-Site Truck Circulation Noise

Noise exposure from on-site truck circulation is expected to exceed the applicable General Plan noise standard for nighttime noise (45 dB L_{eq} and 65 dB L_{max}) at the adjacent residential use to the north, across Harvey Way. Therefore, in order to avoid exceeding General Plan noise standards, **Mitigation Measure NOI-1** is included which requires a solid noise barrier measuring a minimum of 7 feet in height between the proposed truck lane and residential development to the north. Alternatively, commercial truck deliveries shall be restricted to daytime hours (7 a.m. to 10 p.m.) if a noise barrier is not constructed as prescribed.

Loading Dock Noise

Noise exposure from loading dock activities is expected to exceed the General Plan noise standard for daytime and nighttime noise at the adjacent future High Density Residential (HDR) use to the north, across Harvey Way. The assessment concluded a solid noise barrier measuring a minimum of 6 feet in height is required in order to comply with the daytime noise standards, while a solid noise barrier measuring a minimum of 9 feet in height is required in order to comply with the nighttime noise standards. If the noise barrier is less than 9 feet in height,

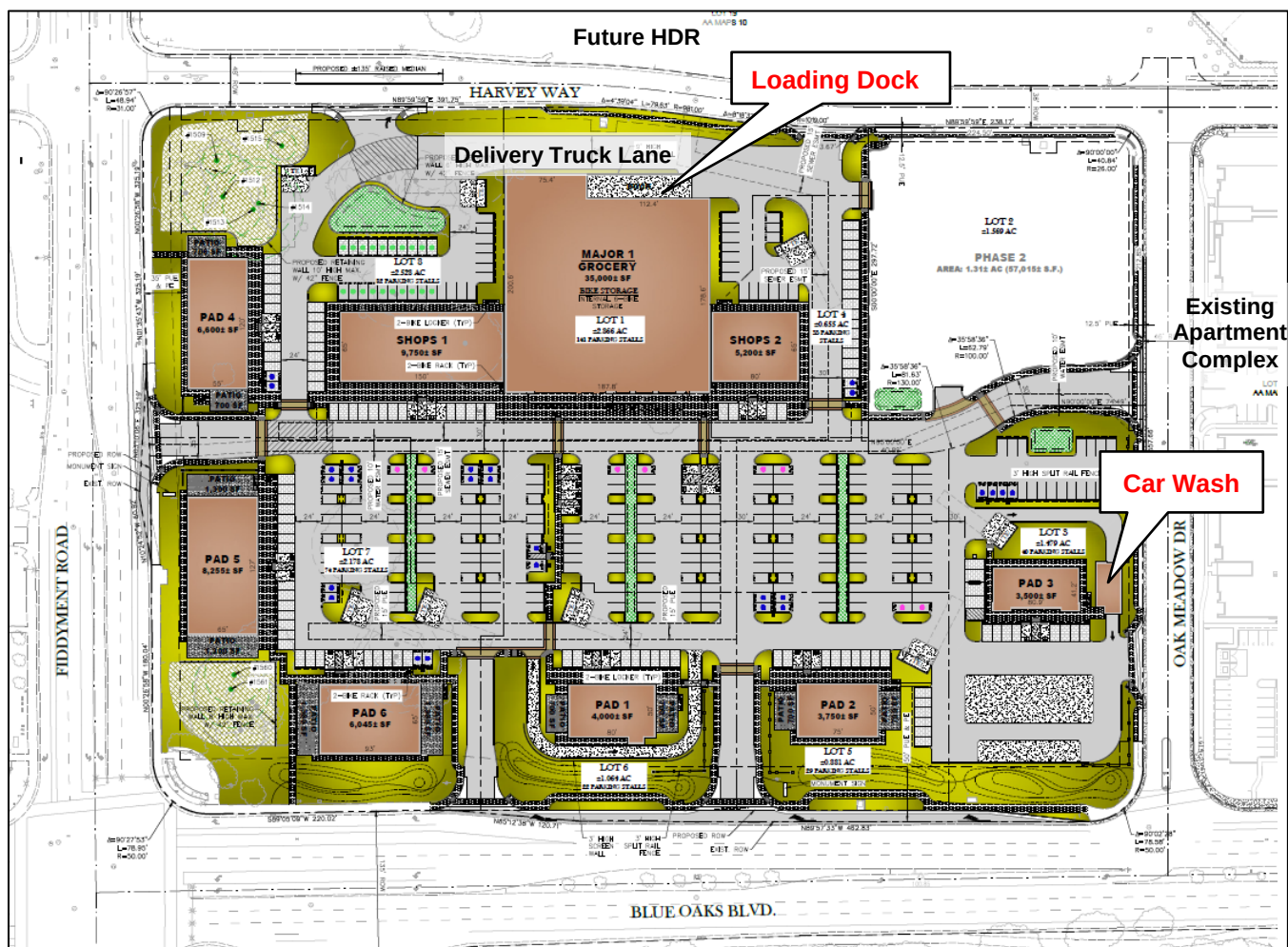
delivery activities shall be restricted to daytime hours (7 a.m. to 10 p.m.) in order to comply with the nighttime noise standards. This is reflected in Mitigation Measure NOI-1.

Car Wash Dryer Noise

The project includes a gas station facility with a car wash located at the southeastern corner of the overall site. The location of the car wash and nearest residential uses are shown on Figure 3. According to the study prepared by BAC, noise levels generated by car wash facilities are primarily due to the drying portion of the operation. As such, the effectiveness of installing car wash entrance and exit doors was considered and it was concluded that the doors would provide 14 dB of noise reduction when kept in the closed position during wash cycles. This meets the City's daytime noise level standard; however, the hourly average car wash noise levels could still exceed the City's 45 dB L_{eq} nighttime noise level standard by 3 dB at the nearest residential property line to the east. Therefore, Mitigation Measure NOI-1 also requires the installation of car wash entrance and exit doors that are kept in the closed position during wash cycles and limits the car wash operations to daytime hours (7 a.m. to 10 p.m.).

With mitigation, impacts will be less than significant.

Figure 3: Project Site Plan



b) Surrounding uses may experience short-term increases in groundborne vibration, groundborne noise, and airborne noise levels during construction. However, these increases would only occur for a short period of

time. When conducted during daytime hours, construction activities are exempt from Noise Ordinance standards, but the standards do apply to construction occurring during nighttime hours. While the noise generated may be a minor nuisance, the City Noise Regulation standards are designed to ensure that impacts are not unduly intrusive. Based on this, the impact is less than significant.

XIV. Population and Housing

The project site is located within the City's West Roseville Specific Plan (WRSP) area, is zoned for commercial uses and has a land use designation of Community Commercial. The City of Roseville General Plan Table II-4 identifies the total number of residential units and population anticipated as a result of buildout of the City, and the Specific Plan likewise includes unit allocations and population projections for the Plan Area. Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to population and housing is based directly on the CEQA Guidelines checklist items a–c listed above.

Discussion of Checklist Answers:

a) The CEQA Guidelines identify several ways in which a project could have growth-inducing impacts (Public Resources Code Section 15126.2), either directly or indirectly. Growth-inducement may be the result of fostering economic growth, fostering population growth, providing new housing, or removing barriers to growth. Growth inducement may be detrimental, beneficial, or of no impact or significance under CEQA. An impact is only deemed to occur when it directly or indirectly affects the ability of agencies to provide needed public services, or if it can be shown that the growth will significantly affect the environment in some other way. The project is consistent with the land use designation of the site. The City already has several developed commercial centers, so the presence or absence of commercial centers is not currently a constraint on City growth. Therefore, construction of this commercial center will not remove a barrier to growth or induce substantial growth. Therefore, the impact of the project is less than significant.

b) The project site is vacant. No housing exists on the project site, and there would be no impact with respect to this criterion.

XV. Public Services

Fire protection, police protection, park services, and library services are provided by the City. The project is located within the Roseville Elementary School District and the Roseville Joint Union High School District.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?			X	
d) Parks?			X	
e) Other public facilities?			X	

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to public services is based directly on the CEQA Guidelines checklist items a–e listed above. The EIR for the Amoruso Ranch Specific Plan, which updated Citywide analyses, addressed the level of public services which would need to be provided in order to serve planned growth in the community. The project is consistent with the existing land use designations. In addition, the project has been routed to the various public service agencies, both internal and external, to ensure that the project meets the agencies' design standards (where applicable) and to provide an opportunity to recommend appropriate conditions of approval.

a) Existing City codes and regulations require adequate water pressure in the water lines, and construction must comply with the Uniform Fire and Building Codes used by the City of Roseville. Additionally, the applicant is required to pay a fire service construction tax, which is used for purchasing capital facilities for the Fire Department. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

b) Sales taxes and property taxes resulting from development will add revenue to the General Fund, which provides funding for police services. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

c) Project applicants are required to pay school impact fees at a rate determined by the local school districts. School fees will be collected prior to the issuance of building permits, consistent with City requirements. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

d) Future park and recreation sites and facilities have already been identified as part of the Specific Plan process. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

e) Sales taxes and property taxes resulting from development will add revenue to the General Fund, which provides funding for the library system and other such facilities and services. In addition, the City charges fees to end-users for other services, such as garbage and greenwaste collection, in order to fund those

services. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

XVI. Recreation

There are no parks or recreation facilities immediately adjacent to the project site. The nearest recreation area is School House Park, located approximately 0.15-mile south of the site, along Fiddymment Road.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated?			X	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to recreation services is based directly on the CEQA Guidelines checklist items a–b listed above.

Discussion of Checklist Answers:

a) The WRSP EIR addressed the level of park services—including new construction, maintenance, and operations—which would need to be provided in order to serve planned growth in the community. Given that the project is consistent with the General Plan and Specific Plan, the project would not cause any unforeseen or new impacts related to the use of existing or proposed parks and recreational facilities. Existing codes, regulations, funding agreements, and facilities plans are sufficient to ensure less than significant impacts.

b) Park sites and other recreational facilities were identified within the WRSP, and the plan-level impacts of developing those facilities were addressed within the Final EIR for the Specific Plan. The project will not cause any unforeseen or new impacts related to the construction or expansion of recreational facilities.

XVII. Transportation

The project site is located at the northwest corner of Blue Oaks Boulevard and Fiddymment Road, both of which are major arterials with transit facilities in the City of Roseville. Blue Oaks Boulevard includes on-street, striped bicycle lanes and partially constructed sidewalks. Fiddymment Road includes on-street, striped bicycle lanes, attached sidewalks, and a bus turn-out for a future transit stop.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Thresholds of Significance and Regulatory Setting:

CEQA Guidelines Section 15064.3 indicates that a project's effect on automobile delay cannot be considered a significant impact, and directs transportation system analysis to focus on vehicle miles traveled (VMT), per checklist item b. However, the CEQA Guidelines also include consistency with a program, plan, or policy addressing transportation systems as an area of potential environmental effects (checklist item a). The City has adopted the following plans, ordinances, or policies applicable to this checklist item: Pedestrian Master Plan, Bicycle Master Plan, Short-Range Transit Plan, and General Plan Circulation Element. The project is evaluated for consistency with these plans and the policies contained within them, which includes an analysis of delay as a potential policy impact. The Circulation Element of the General Plan establishes Level of Service C or better as an acceptable operating condition at all signalized intersections during a.m. and p.m. peak hours. Exceptions to this policy may be made by the City Council, but a minimum of 70% of all signalized intersections must maintain LOS C. The Findings of the Implementing Procedures indicate that compliance with the Traffic Mitigation Fee (RMC Ch. 4.44) will fund roadway projects and improvements necessary to maintain the City's Level of Service standards for projects consistent with the General Plan and related Specific Plan. An existing plus project conditions (short-term) traffic impact study may be required for projects with unique trip generation or distribution characteristics, in areas of local traffic constraints, or to study the proposed project access. A cumulative plus project conditions (long-term) study is required if a project is inconsistent with the General Plan or Specific Plan and would generate more than 50 pm peak-hour trips. The guidelines for traffic study preparation are found in the City of Roseville Design and Construction Standards–Section 4.

For checklist item b, the CEQA Guidelines Section 15064.3 establishes a detailed process for evaluating the significance of transportation impacts. In accordance with this section, the analysis must focus on the generation

of VMT. Projects within one-half mile of either an existing major transit stop⁵ or a stop along an existing high quality transit corridor⁶ should be presumed to have less than significant impacts, as should any project which will decrease VMT when compared with the existing conditions. VMT may be analyzed qualitatively if existing models or methods are not available to estimate VMT for a particular project; this will generally be appropriate for discussions of construction traffic VMT.

Impacts with regard to items c and d are assessed based on the expert judgment of the City Engineer and City Fire Department, as based upon facts and consistency with the City's Design and Construction Standards.

Discussion of Checklist Answers:

a) The City of Roseville has adopted a Pedestrian Master Plan, Bicycle Master Plan, and Short-Range Transit Plan. The project was reviewed for consistency with these documents. Pedestrian facilities have already been constructed adjacent to Blue Oaks Boulevard, as well as a portion of Fiddymont Road. Bicycle facilities have also been constructed adjacent to Blue Oaks Boulevard and Fiddymont Road, and the project will not decrease the performance or safety of those facilities. The project design includes installation of sidewalks around the perimeter of the site, which would complete the pedestrian circulation system in the project vicinity. Thus, the project results in a beneficial impact related to pedestrian access and circulation. Additionally, the WRSP designates the project site as a park and ride lot. This requires the project to provide 20 parking spaces designated for commuters to leave their vehicles to meet carpools, vanpools or access transit. The project is consistent with the policies of the Pedestrian Master Plan, Bicycle Master Plan, and Short-Range Transit Plan.

A trip generation estimate was prepared by the City's Engineering Division in order to compare the project's anticipated p.m. peak hour trips to the City's modeled trips. Table 5, below, represents the anticipated trip generation for buildout of Transportation Analysis Zone 1107 with and without implementation of the project.

**Table 5: Project Trip Generation Estimate
Traffic Analysis Zone 1107**

Use	Units / Square Feet (sf)	Model Trip Rate	PM Peak Trips
2035 Build Out			
Retail	150,000 sf	2.46	369
Single-Family Residential (SFR)	131	0.69	90
Multi-Family Residential (MFR)	866	0.52	450
Existing			
Retail	0 sf	2.46	0
SFR	227	0.69	157
MFR	0	0.52	0
Proposed			
Retail	82,100 sf	2.46	202
2035 Build Out			910
Existing Plus Project			359
Total			-551

⁵ A site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. (Public Resources Code Section 21064.3)

⁶ A corridor with fixed route bus service at service intervals of 15 minutes or less during peak commute hours.

With the addition of the project's p.m. peak hour trips to the existing condition, the resulting trip generation of 359 peak trips is 551 trips less than what was anticipated for the TAZ. Therefore, a long-term traffic study was not required given the project does not exceed the number of trips anticipated in the General Plan.

Kimley-Horn prepared a short-term traffic study for the proposed project (Attachment 7) to evaluate the project's access points and localized circulation, including throat depths, tapers, storage, and driveway treatments that are necessary to ensure safe and efficient operations and to maintain the City's existing level of service. The study concluded that the signalized intersections at Blue Oaks Boulevard at Fiddymment Road and Blue Oaks Boulevard at Orchard View both operate at LOS C or better during the Existing (2018) plus Project conditions. However, the following improvements have been identified to be constructed by the project:

1. The western project driveway along Harvey Way be restricted to right-turn in/out movements with installation of a narrow-raised median along Harvey Way and the addition of appropriate signing and striping at the driveway approach. This will ensure sufficient storage capacity to accommodate the 95th percentile queue for the westbound left-turn at Harvey Way and Fiddymment Road.
2. For the site driveway along Fiddymment Road, install "KEEP CLEAR" signing and pavement marking within the driveway intersection with the upstream drive aisle to minimize the potential for driveway blockage.
3. Lengthen the deceleration lane along westbound Blue Oaks Boulevard approaching Intersection #2 by 360 feet to adequately accommodate slowing vehicles entering the site.

These improvements have been incorporated into the project plans. Given the fact that the project is consistent with the City's Traffic Model and the results of the study will be implemented by the project, impacts to traffic and level of service have been determined to be less than significant.

b) Traffic analyses focus on the number of trips traveling in specified areas during peak periods, in order to quantify impacts as specific intersections. However, there is no direct relationship between the number of trips and the amount of VMT generated by a use. Projects which substantially increase trips to a specific area may in fact decrease VMT in the City. As an example, if a new grocery store is added to an area, customers who go to that store were already going to a grocery store elsewhere, and are most likely to choose the new store because it is closer to home or on their way to another location (e.g. work). So while the store would generate substantial new trips, it would lower Citywide VMT. Unless a project includes unique characteristics, non-residential projects do not increase VMT; they divert existing trips into a similar or more efficient pathway.

The proposed project is non-residential development of a vacant property, surrounded by existing development. The project does not include any unique characteristics which would draw in regional traffic, or which would prompt longer trips. The project would locate services and employment in proximity to existing developed areas, and would therefore have a neutral or positive impact on vehicle miles traveled. Impacts are less than significant.

c-d) The project has been reviewed by the City Engineering and City Fire Department staff, and has been found to be consistent with the City's Design Standards. Furthermore, standard conditions of approval added to all City project require compliance with Fire Codes and other design standards. Compliance with existing regulations ensure that impacts are less than significant.

XVIII. Tribal Cultural Resources

As described within the Open Space and Conservation Element of the City of Roseville General Plan, the Roseville region was within the territory of the Nisenan (also Southern Maidu or Valley Maidu). Two large permanent Nisenan habitation sites have been identified and protected within the City's open space (in Maidu Park). Numerous smaller cultural resources, such as midden deposits and bedrock mortars, have also been

recorded in the City. A majority of documented sites within the City are located in areas designated for open space uses.

Would the project cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?			X	
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1 the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

Thresholds of Significance and Regulatory Setting:

In addition to archeological resources, tribal cultural resources are also given particular treatment. Tribal cultural resources are defined in Public Resources Code Section 21074, as either 1) a site, feature, place, geographically-defined cultural landscape, sacred place, or object with cultural value to a California Native American Tribe, that is listed or eligible for listing on the California Register or Historical Resources, or on a local register of historical resources or as 2) a resource determined by the lead agency, supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code section 5024.1(c), and considering the significance of the resource to a California Native American Tribe.

Discussion of Checklist Answers:

a) The WRSP EIR included a historic and cultural resources study, which concluded there were no listed or eligible sites documented in the project area. However, the WRSP EIR includes standard mitigation measures which are designed to reduce impacts to any previously undiscovered resources should any be found on site. Language included in the measure requires an immediate cessation of work, and the requirement to contact the appropriate agencies to address the resource before work can resume. The project will not result in any new

impacts beyond those already discussed and disclosed in the WRSP EIR; therefore, project-specific impacts are less than significant.

b) Notice of the proposed project was mailed to tribes which had requested such notice pursuant to Assembly Bill 52 (AB 52) on January 2, 2020. A request for consultation was received from the United Auburn Indian Community (UAIC) on January 7, 2020. City staff met with tribal representatives at the project site on February 7, 2020 and no resources were found to exist on the site. However, the UAIC recommended that a standard mitigation measure (**TCR-1**) be made a requirement of the project to reduce impacts to resources, should any be found on-site. The measure requires an immediate cessation of work, and contact with the appropriate agencies to address the resource before work can resume. This measure is already required by the prior EIR, but the standard language has been updated since the original EIR was published, and therefore the most current version of this measure is included herein as mitigation measure TCR-1.

In addition to the standard measure, the UAIC stated that oak trees in excess of 100 years in age should be considered tribal cultural resources, and that several of the largest trees on this site were likely to meet this criteria. Acting as lead agency, the City has evaluated the information provided by the UAIC to determine if it meets the definitions in Section 21074(a) of the Public Resources Code. This section states that tribal cultural resources are resources (including landscapes and features) which are:

- included or determined to be eligible for inclusion in the California Register of Historical Resources or a local register of historical resources or
- it meets the following National Register of Historic Places criteria and is determined to be significant, as supported by substantial evidence: it is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; is associated with the lives of persons important in our past; it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or has yielded, or may be likely to yield, information important in prehistory or history.

The site is not listed on either the California or National Register of Historic Places. To be eligible for either register, a site or resource must be shown to meet one of the criteria for listing *and* must be found to be significant. Native oak trees are associated with tribal cultural history, and have served and continue to serve important purposes in tribal communities, including as a food supply and to provide materials for basketry, regalia and ceremonies, household utensils, structures, tools, and weapons. While oak trees in general are associated with events and persons important to cultural heritage, a site review found no resources on the site (such as hand stones) which would indicate that these trees in particular were associated with tribal activities.

In addition, the second part of the determination of eligibility requires a finding that the resource is significant. Significance requires the resource be uncommon, unique or have other particularly important characteristics. Several of the oak trees on this site are large, but not uncommonly so; there are many oak trees of similar size in the nearby open space preserve. The oak trees on the site do not have any uncommon, unique, or particularly important characteristics which would make them a significant resource. Therefore, the City acting as lead agency finds that the oak trees on the site do not meet the legal definitions of a tribal cultural resource.

The UAIC concluded consultation on April 14, 2020 with incorporation of the TCR-1 mitigation measure. With mitigation, impacts will be less than significant.

TCR-1: Inadvertent Discoveries – If any TCRs are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find. The appropriate tribal representatives from culturally affiliated tribes shall be immediately notified. Work at the discovery location cannot resume until it is determined, in consultation with culturally affiliated tribes, that the find is not a TCR, or that the find is a TCR and all necessary

investigation and evaluation of the discovery under the requirements of the CEQA, including AB 52, has been satisfied. Preservation in place is the preferred alternative under CEQA and UAIC protocols, and every effort must be made to preserve the resources in place, including through project redesign. The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including, but not limited to, facilitating the appropriate tribal treatment of the find, as necessary.

XIX. Utilities and Service Systems

Water and sewer services will be provided by the City of Roseville. The developer will be responsible for extending new lines onto the site in order to serve the project. Storm water will be collected on-site and transferred via pipe into an off-site storm drain system. Solid waste will be collected by the City of Roseville's Refuse Department. The City of Roseville will provide electric service to the site, while natural gas will be provided by PG&E. Comcast will provide cable. The project has been reviewed by the City's Engineering Division, Environmental Utilities, Roseville Electric and PG&E. Adequate services are available for the project.

Would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider which serves the project that it has adequate capacity to serve the project's projected demand in addition of the provider's existing commitments?			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to utilities and service systems is based directly on the CEQA Guidelines checklist items a–g listed above.

Discussion of Checklist Answers:

a) The major utility infrastructure to serve this area is already installed, which includes a looped sewer line and looped water line system in the streets surrounding the site, and stormwater lines. Minor additional infrastructure will be constructed within the project site to tie the project into the major systems, but these facilities will be constructed in locations where site development is already occurring as part of the overall project; there are no additional substantial impacts specific or particular to the minor infrastructure improvements.

b) The City of Roseville 2015 Urban Water Management Plan (UWMP), adopted May 2016, estimates water demand and supply for the City through the year 2040, based on existing land use designations and population projections. In addition, the Amoroso Ranch Water Supply Assessment (AR WSA, Appendix E of the Amoroso Ranch FEIR), dated May 2016, estimates water demand and supply for ultimate General Plan buildout. The UWMP indicates that existing water supply sources are sufficient to meet all near term needs, estimating an annual water demand of 45,475 acre-feet per year (AFY) by the year 2020 and existing surface and recycled water supplies in the amount of 70,421 AFY. The AR WSA estimates a Citywide buildout demand of 64,370 AFY when including recycled water, and of 59,657 AFY of potable water. The AR WSA indicates that surface water supply is sufficient to meet demand during normal rainfall years, but is insufficient during single- and multiple-dry years. However, the City's UWMP establishes mandatory water conservation measures and the use of groundwater to offset reductions in surface water supplies. Both the UWMP and AR WSA indicate that these measures, in combination with additional purchased water sources, will ensure that supply meets projected demand. The project, which is consistent with existing land use designations, would not require new or expanded water supply entitlements.

c) The proposed project would be served by the Pleasant Grove Wastewater Treatment Plant (PGWWTP). The Central Valley Regional Water Quality Control Board (RWQCB) regulates water quality and quantity of effluent discharged from the City's wastewater treatment facilities. The Pleasant Grove WWTP has the capacity to treat 12 million gallons per day (mgd) and is currently treating 7.0 mgd. The volume of wastewater generated by the proposed project could be accommodated by the facility, because Citywide planning of sewer infrastructure is based on land use, and the project is consistent with the existing land use designations. The proposed project will not contribute to an exceedance of applicable wastewater treatment requirements. The impact would be less than significant.

d,e) The Western Placer Waste Management Authority is the regional agency handling recycling and waste disposal for Roseville and surrounding areas. The regional waste facilities include a Material Recovery Facility (MRF) and the Western Regional Sanitary Landfill (WRSL). Currently, the WRSL is permitted to accept up to 1,900 tons of municipal solid waste per day. According to the solid waste analysis of the Amoruso Ranch Specific Plan FEIR, under current projected development conditions the WRSL has a projected lifespan extending through 2058. The project is consistent with the existing land use designation, and therefore there is sufficient existing capacity to serve the proposed project. Though the project will contribute incrementally to an eventual need to find other means of waste disposal, this impact of City buildout has already been disclosed and mitigation applied as part of each Specific Plan the City has approved, including the most recent Amoruso Ranch Specific Plan. All residences and business in the City pay fees for solid waste collection, a portion of which is collected to fund eventual solid waste disposal expansion. The project will not result in any new impacts associated with major infrastructure. Environmental Utilities staff has reviewed the project for consistency with policies, codes, and regulations related to waste disposal and waste reduction regulations and policies and has found that the project design is in compliance.

XX. Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of				X

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
runoff, post-fire slope instability, or drainage changes?				

Thresholds of Significance and Regulatory Setting:

The significance of impacts related to utilities and service systems is based directly on the CEQA Guidelines checklist items a–d listed above. The California Department of Forestry and Fire Protection (CAL FIRE) is the state agency responsible for wildland fire protection and management. As part of that task, CAL FIRE maintains maps designating Wildland Fire Hazard Severity zones. The City is not located within a Very High Fire Hazard Severity Zone, and is not in a CAL FIRE responsibility area; fire suppression is entirely within local responsibility.

Discussion of Checklist Answers:

a–d) Checklist questions a–d above do not apply, because the project site is not within a Very High Fire Hazard Severity Zone and is not in a CAL FIRE responsibility area.

XXI. Mandatory Findings of Significance

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
e) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, threatened or rare species, or eliminate important examples of the major periods of California history or prehistory?			X	
f) Does the project have impacts which are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and			X	

Environmental Issue	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
the effects of probable future projects.)				
g) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Significance Criteria and Regulatory Setting:

The significance of impacts related to mandatory findings of significance is based directly on the CEQA Guidelines checklist items a–c listed above.

Discussion of Checklist Answers:

a–c) Long term environmental goals are not impacted by the proposed project. The cumulative impacts do not deviate beyond what was contemplated in the WRSP EIR, and mitigation measures have already been incorporated. With implementation of the City's Mitigating Ordinances, Guidelines, and Standards and best management practices, mitigation measures described in this chapter, and permit conditions, the proposed project will not have a significant impact on the habitat of any plant or animal species. Based on the foregoing, the proposed project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of any wildlife species, or create adverse effects on human beings.

ENVIRONMENTAL DETERMINATION:

*In reviewing the site specific information provided for this project and acting as Lead Agency, the City of Roseville, Development Services Department, Planning Division has analyzed the potential environmental impacts created by this project and determined that with mitigation the impacts are less than significant. As demonstrated in the initial study checklist, there are no "project specific significant effects which are peculiar to the project or site" that cannot be reduced to less than significant effects through mitigation (CEQA Section 15183) and therefore an EIR is **not** required. Therefore, **on the basis of the foregoing initial study:***

[X] I find that the proposed project COULD, but with mitigation agreed to by the applicant, clearly will not have a significant effect on the environment and a *MITIGATED NEGATIVE DECLARATION* has been prepared.

Initial Study Prepared by:

Kinarik Shallow

Kinarik Shallow, Associate Planner
City of Roseville, Development Services – Planning Division

Attachments:

1. West Roseville Specific Plan EIR (this document can be found online at:
<https://www.roseville.ca.us/cms/One.aspx?portalId=7964922&pageId=8775152>)
2. Mitigation Monitoring & Reporting Program
3. Health Risk Assessment
4. Arborist Report and Preliminary Tree Impact Plan
5. CalEEMod Results
6. Environmental Noise Assessment
7. Kimley-Horn Traffic Evaluation


DEVELOPMENT SERVICES DEPARTMENT – PLANNING DIVISION

311 Vernon Street, Roseville, CA 95678 (916) 774-5276

MITIGATION MONITORING AND REPORTING PROGRAM

Project Title/File Number:	WRSP PCL F-31 – The Plaza at Blue Oaks; File #PL17-0368
Project Location:	1950 Blue Oaks Boulevard, Roseville, Placer County, CA; APN 017-117-093-000
Project Description:	The proposed project is a retail center consisting of a ±35,000 square-foot anchor grocery store, a 12-pump gas station with a ±3,500 square-foot convenience store and car wash, and seven additional buildings ranging in size from approximately 3,750 square feet to 9,750 square feet. The project includes a Design Review Permit to review the site design and proposed buildings, a Tree Permit to remove several native oak trees on the westerly portion of the site, and a Tentative Subdivision Map to subdivide the parcel into eight (8) lots.
Environmental Document	Mitigated Negative Declaration
Project Applicant:	Joe Zawidski, Signature Management Company
Property Owner:	Joe Zawidski, West Roseville Development Company, Inc.
Lead Agency Contact Person:	Kinarik Shallow, Associate Planner, 916-746-1309

Section 21081.6 of the California Public Resources Code requires public agencies to "adopt a reporting and monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." This Mitigation Monitoring and Reporting Program has been adopted for the purpose of avoiding environmental impacts

MONITORING PROCESS: Existing monitoring mechanisms are in place that assist the City of Roseville in meeting the intent of CEQA. These existing monitoring mechanisms eliminate the need to develop new monitoring processes for each mitigation measure. These mechanisms include grading plan review and approval, improvement/building plan review and approval and on-site inspections by City Departments. Given that these monitoring processes are requirements of the project, they are not included in the mitigation monitoring program.

It shall be the responsibility of the project applicant/owner to provide written notification to the City using the Mitigation Verification Cover Sheet and Forms, in a timely manner, of the completion of each Mitigation Measure as identified on the following pages. The City will verify that the project is in compliance with the adopted Mitigation Monitoring and Reporting Program. Any non-compliance will be reported by the City to the applicant/owner, and it shall be the project applicant's/owner's responsibility to rectify the situation by bringing the project into compliance. The purpose of this program is to ensure diligent and good faith compliance with the Mitigation Measures which have been adopted as part of the project.

TABLE OF MITIGATION MEASURES					
Mitigation Measure	Implementation	Timing	Reviewing Party	Documents to be Submitted to City	Staff Use Only
BIO-1: Avoid nesting sites To ensure that fully protected bird and raptor species are not injured or disturbed by construction in the vicinity of nesting habitat, the project applicant shall implement the following measures: (a) When feasible, all tree removal shall occur between August 30 and February 15 to avoid the breeding season of any raptor species that could be using the area, and to discourage hawks from nesting in the vicinity of an upcoming construction area. This period may be modified with the authorization of the DFG; or (b) Prior to the beginning of mass grading, including grading for major infrastructure improvements, during the period between February 15 and August 30, all trees and potential burrowing owl habitat within 350 feet of any grading or earthmoving activity shall be surveyed for active raptor nests or burrows by a qualified biologist no more than 30 days prior to disturbance. If active raptor nests or burrows are found, and the site is within 350 feet of potential construction activity, a fence shall be erected around the tree or burrow(s) at a distance of up to 350 feet, depending on the species, from the edge of the canopy to prevent construction disturbance and intrusions on the nest area. The appropriate buffer shall be determined by the City in consultation with CDFG. (c) No construction vehicles shall be permitted within restricted areas (i.e., raptor protection zones), unless directly related to the management or protection of the legally protected species. (d) In the event that a nest is abandoned, despite efforts to minimize disturbance, and if the nestlings are still alive, the developer shall contact CDFG and, subject to CDFG approval, fund the recovery and hacking (controlled release of captive reared young) of the nestling(s). (e) If a legally protected species nest is located in a tree designated for removal, the removal shall be deferred until after August 30th, or until the adults and young of the year are no longer dependent on the nest site as determined by a qualified biologist. (f) The project applicant, in consultation with the CDFG, shall conduct a pre-construction survey within the phases of the project site that are scheduled for construction activities. The survey shall be conducted by a qualified biologist to determine if burrowing owls are occupying the project site. The survey shall be conducted no more than three weeks prior to grading of the project site. If the above survey does not identify burrowing owls on the project site, then no further mitigation would be required. However, should burrowing owls be found on the project site, the following measures shall be required: (g) The applicant shall avoid all potential burrowing owl burrows that may be disturbed by project construction during the breeding season between February 15 and August 30 (the period when nest burrows are typically occupied by adults with eggs or young). Avoidance shall include the establishment of a 350-foot diameter non-disturbance buffer zone around any occupied burrows. The buffer zone shall be delineated by highly visible temporary construction fencing. Disturbance of any occupied burrows shall only occur outside of the breeding season (August 30 through February 15). Based on approval by the CDFG, preconstruction and nonbreeding season exclusion measures may be implemented to preclude burrowing owl occupation of the project site prior to project-related disturbance (such as grading). Burrowing owls may be passively excluded from burrows in the construction area by placing one-way doors in the burrows according to current CDFG protocol. The one-way doors must be in place for a minimum of three days. All burrows that may be occupied by burrowing owls, regardless of whether they exhibit signs of occupation, must be cleared. Burrows that have been cleared through the use of the one-way doors shall then be closed or backfilled to prevent owls from entering the burrow. The one-way doors shall not be used more than two weeks before construction to ensure that owls do not recolonize the area of construction.	Results of preconstruction surveys shall be submitted prior to the issuance of a grading permit or Improvement Plans. Applicable construction restrictions shall be reflected within plans. The applicants shall prepare annual reports on the status and success of mitigation and shall submit these reports to USFWS and CDFG. The applicants shall coordinate with USFWS and CDFG to modify as necessary any mitigation plans in an effort to attain mitigation success.	<i>Pre-Construction and Construction:</i> Surveys required prior to construction. If surveys are positive for birds, then remainder of mitigation steps are required prior to construction. Add as note on Improvement Plans.	Engineering	Nesting bird surveys	
NOI-1: Commercial Noise Control	Project plans will be reviewed for compliance. The applicants shall submit site-specific acoustical	<i>Pre-Construction:</i> Prior to issuance of Improvement Plans and/or Building Permits	Engineering will review Improvement Plans for	An Acoustical Study	

For all commercial uses within 150 feet of residential uses, implement the following or equally effective measures: (a) For commercial loading docks and on-site truck circulation areas that are planned to be within 150 feet of sensitive receptors (including backyards), the following measures shall be implemented: (1) Loading docks and on-site truck circulation routes shall be designed to ensure that noise levels do not exceed 70 dB Lmax or 50 dB hourly Leq at the nearest residence. An acoustic analysis shall demonstrate that the loading area design, including any noise attenuation features (e.g., covering, sound walls, orientation) would be adequate to achieve this standard; and, (2) Deliveries shall generally be limited to the hours between 7:00 A.M. and 10:00 P.M. (b) For all commercial buildings, roof-top HVAC shall be oriented away from residential areas and systems shall not produce noise levels that exceed 50 dB at a distance of 25 feet. In addition, roof-top parapets shall block line-of-sight from noise-sensitive uses to HVAC equipment. (c) Setbacks or enhanced barriers (e.g., 8 feet tall) as needed to achieve City standards. (d) Car wash entrance and exit doors shall be kept in the closed potion during wash cycles. Car wash operations shall be limited to the hours of 7:00 A.M. and 10:00 P.M. An acoustical analysis shall be conducted to demonstrate that City noise standards would be achieved by these measures. Additional measures shall be implemented, if needed, to meet the standards.	analyses to the Chief Building Inspector for review.	Add as note on Improvement Plans and Building Plans	compliance with wall and noise requirements. <u>Building</u> will review Building Plans for compliance with HVAC requirements.		
TCR-1: Inadvertent Discoveries If any TCRs are discovered during ground disturbing construction activities, all work shall cease within 100 feet of the find. The appropriate tribal representatives from culturally affiliated tribes shall be immediately notified. Work at the discovery location cannot resume until it is determined, in consultation with culturally affiliated tribes, that the find is not a TCR, or that the find is a TCR and all necessary investigation and evaluation of the discovery under the requirements of the CEQA, including AB 52, has been satisfied. Preservation in place is the preferred alternative under CEQA and UAIC protocols, and every effort must be made to preserve the resources in place, including through project redesign. The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including, but not limited to, facilitating the appropriate tribal treatment of the find, as necessary.	This condition shall be reflected in all construction and building plans, and construction site workers shall be advised by the site manager of this measure.	<i>Construction:</i> Measure applies if resources are discovered during construction. Add as note on Improvement Plans and Building Plans.	Engineering and Building	None	



MITIGATION VERIFICATION SUBMITTAL COVER SHEET

Project Title/Planning File # _____

Project Address _____

Property Owner _____

Planning Division Contact _____

SUMMARY OF VERIFICATION MATERIALS INCLUDED IN THIS SUBMITTAL

Mitigation Measure	Supporting Attachments Included	Date Complete

I HAVE ATTACHED THE FOLLOWING REQUIRED ITEMS:

- ☐ Table of Applicable Mitigation Measures
- ☐ Mitigation Verification Form(s)
- ☐ Specific supporting documentation required by measure(s), if applicable (e.g. biologist's report)

I hereby certify under penalty of perjury under the laws of the State of California that I am the property owner or an agent of the property owner and am authorized to submit this Mitigation Verification Form. I also certify that the above-listed mitigation measures have been completed in the manner required, and that all of the information in this submittal is true and correct, to the best of my knowledge:

Signature and Date Print Name Contact Number

MITIGATION VERIFICATION FORM

Mitigation Measure _____

Description of Monitoring and Verification Work Performed. The following information is a required part of the description: dates, personnel names or titles, and the stage/phase of construction work. Additional notes sheets may be attached, if necessary, or the below may simply reference a separate attachment that provides the required information.

INSTRUCTIONS

COVER SHEET:

A Cover Sheet for the project/development is prepared by City staff, with the top portion filled out. Each time Mitigation Verification Forms(s) are being submitted, a Cover Sheet completed by the Developer, Contractor, or Designee is required. An example of a completed summary table is provided below. The signature on the Cover Sheet must be *original wet ink*.

EXAMPLE MITIGATION VERIFICATION SUBMITTAL COVER SHEET

Project Title/Planning File #	New Coffee Shop, PL15-0000
Project Address	10 Justashort Street
Property Owner	Jane Owner
Planning Division Contact	Joe Planner, Associate Planner, (916) 774-####

SUMMARY OF VERIFICATION MATERIALS INCLUDED IN THIS SUBMITTAL

Mitigation Measure	Supporting Attachments Included	Date Complete
MM-3	Copy of survey report signed by biologist	5/10/2016
MM-4	All information included in Mitigation Verification Form	5/12/2016
MM-5	E-mail from Air District approving Dust Control Plan	5/05/2016

MITIGATION VERIFICATION FORM:

A Mitigation Verification Form is provided by City staff, along with the Cover Sheet and Table of Applicable Mitigation Measures. A form is filled in and submitted for each mitigation measure by the Developer, Contractor, or Designee. The form needs only the mitigation number to be filled in, along with the Description of Monitoring and Verification Work Performed. Multiple forms may be submitted simultaneously, under one cover sheet. It is also permissible to submit a form for each part of a measure, on separate dates. For instance, in the example measure MM-4 in the table above, the actual mitigation requires informing construction workers *and* retaining a qualified archeologist if resources are uncovered. Thus, a developer may submit a form in May certifying that construction workers have been informed, and also submit a second copy of the form in July because resources were discovered and additional actions had to be undertaken.

Each mitigation measure specifies the type of supporting documentation required; this must be submitted in order for the City to accept the mitigation as complete. An example of a completed Mitigation Verification Form is provided below.

EXAMPLE MITIGATION VERIFICATION FORM

Mitigation Measure MM3

Description of Monitoring and Verification Work Performed. The following information is a required part of the description: dates, personnel names or titles, and the stage/phase of construction work. Additional notes sheets may be attached, if necessary, or the below may simply reference a separate attachment that provides the required information.

The mitigation measure text is included on the Improvement Plans General Notes page (Improvement Plan EN15-0001). On May 4, 2016, prior to any ground-disturbing activities (the pre-construction phase), a site meeting was held. At this meeting, workers on the site were informed of the potential to unearth remains, and were instructed to cease work and notify their supervisor immediately if any resources were observed.



HEALTH RISK ASSESSMENT
Signature Homes, Inc. - Plaza at Blue Oaks
Roseville, CA

Placer County Air Pollution Control District
Health Risk Assessment Submittal

Prepared By:

TRINITY CONSULTANTS
3301 C Street, Suite 400
Sacramento, CA 95816
(916) 444-6666

March 2020

Project 180506.0096



Environmental solutions delivered uncommonly well

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LIST OF ABBREVIATIONS / ACRONYMS

AB2588	Air Toxics "Hot Spots" Information and Assessment Act
AERMOD	American Meteorological Society Regulatory Model
BPIPPRIME	Building Profile Input Program PRIME
CARB	California Air Resources Board
CAS	Chemical Abstract System
GIS	Geographic Information System
HARP	Hot Spots Analysis and Reporting Program
HI	Hazard Index
NC Acute	Non-carcinogenic Acute
NC Chronic	Non-carcinogenic Chronic
HRA	Health Risk Assessment
NED	National Elevation Datasets
MEIR	Maximally Exposed Individual Resident
MEIW	Maximally Exposed Individual Worker
OEHHA	Office of Environmental Health Hazard Assessment
PM	Particulate Matter
PMI	Point of Maximum Impact
REL	Reference Exposure Level
TAC	Toxic Air Contaminants
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
ZOI	Zone of Impact
USGS	United States Geological Survey

1. EXECUTIVE SUMMARY

Signature Homes, Inc. is developing a gas pad (The Facility) in the southeast corner of the Plaza at Blue Oaks development in Roseville, California. The Facility is under the jurisdiction of the Placer County Air Pollution Control District (PCAPCD). After reviewing the relevant Committee of the California Air Pollution Control Officers Association (CAPCOA) guidance for conducting health risk assessments (HRAs) at gasoline stations, it was determined that The Facility would be unable to screen out of doing an HRA, as the estimated impacts were above a 10 in 1 million cancer risk. Therefore, Signature Homes, Inc. is submitting this refined HRA for the Facility to demonstrate that health risk impacts are below 10 in 1 million cancer risk and a hazard index of 1. This report constitutes the results of the HRA performed in accordance with the Placer County Air Pollution Control District's guidelines for preparing a health risk assessment and the Office of Environmental Health Hazard Assessment (OEHHA) developed *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments* (OEHHA HRA Guidance Manual).¹ The analysis uses the Hotspots Analysis and Reporting Program (HARP) Version 2.0 with inputs from US-EPA's AERMOD modeling program to perform the exposure/risk assessment.

The objectives of this HRA are to: (1) estimate off-site air concentrations of the substances identified in AB2588 and emitted from the facility, (2) evaluate potential exposures to the surrounding community, (3) characterize the potential health risks to individuals and the exposed population associated with those levels of exposure, and (4) determine if additional actions are required. This report presents the results of the HRA analysis. In addition to this HRA report, supplemental modeling and HRA files have been provided via an electronic data transfer system.

The results obtained from HARP provide the necessary information to generate the zones of impact (ZOIs) and identify potentially exposed populations. In addition, potential health effects were evaluated for the maximum exposed individual resident (MEIR) and the maximum exposed individual worker (MEIW) for both non-carcinogenic and carcinogenic health impacts. The results of the HRA are summarized in Table 1-1 below.

¹ Office of Environmental Health Hazard Assessment (OEHHA), *Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments*, February 2015, California Environmental Protection Agency.

Table 1-1. HRA Results Summary

Receptor Type	Cancer Risk		Chronic		Acute	
	Receptor ID	Risk (in a million)	Receptor ID	Hazard Index	Receptor ID	Hazard Index
Point of Maximum Impact	319	48.39	319	0.23	291	0.73
Maximum Exposed Individual Resident	422	4.45	422	0.02	312	0.23
Maximum Exposed Individual Worker	320	2.42	320	0.13	347	0.48

1.1. APPLICABLE REGULATIONS

In accordance with our correspondence with Emmanuel Orozco of Placer County, dated March 24, 2016, public notice and risk reduction are triggered for a cancer risk greater than or equal to 10 in 1 million and non-cancer hazard index greater than or equal to 1. The results in Table 1-1 show that the Facility does not trigger the public notice or risk reduction thresholds for cancer risk or any of the non-cancer hazard indices.

For this HRA, Trinity used HARP – Air Dispersion and Risk Tool (Version 2.0 dated 19121).

2. FACILITY INFORMATION

Table 2-1. Facility Information

Facility Name	The Plaza at Blue Oaks Plaza
Facility Address	1950 Blue Oaks Blvd Fiddymment F-31 Roseville, CA
UTM Coordinates	642,811.78 m E, 4,294,994.31 m N
Datum	UTM, NAD83, Zone Grid 10S

2.1. FACILITY OPERATIONS

The Facility is a gas station that is being installed as part of the Plaza at Blue Oaks development project, which consists of 92,450 square feet of commercial and retail development in Roseville, California. The Facility specifically contains fuel pumps and underground fuel tanks with a Phase I & II vapor recovery system. The annual throughput of the Facility will have a maximum throughput of 5.5 million gallons per year.

2.2. EMISSIONS

The emissions for this HRA are based on the 2017 Risk Assessment Procedures provided by South Coast Air Quality Management District² and the maximum annual gasoline throughput. A summary of facility-wide emissions is provided in Table 2-2.

Table 2-2. Facility Emissions Summary

Pollutant ID	Pollutant Name	lbs/yr	lbs/hr
71432	Benzene	21.74	0.00248
100414	Ethylbenzene	19.96	00.00228
91203	Naphthalene	2.31	0.00026

² South Coast Air Quality Management District, *Risk Assessment Procedures for rules 1401, 1401.1 and 212 version 8.1*, September 1, 2017

3. SOURCE AND EMISSION INVENTORY INFORMATION

3.1. RELEASE INFORMATION

Emission source locations and elevations are provided in Table 3-1. Tables 3-2 and 3-3 identify the release information for the point sources and volume sources at the facility, respectively.

Table 3-1. Emission Source Modeling Locations

Model ID	Description	X (m)	Y (m)	Elevation	Emission Rate (g/s)
VENT	Loading	642,809.3	4,294,992.7	32.98	1
VENT2	Breathing	642,809.3	4,294,992.7	32.98	1
SPILL	Loading Spill Emissions	642,809.3	4,294,992.7	32.98	1
REFUEL	Refueling Emissions	642,809.3	4,294,992.7	32.98	1

Table 3-2. Emission Source Modeling Parameters – Point Sources

Model ID	Description	Stack Height (m)	Temp (F)	Stack Velocity (m/s)	Stack Diameter (ft)
VENT	Loading	3.66	60	0	2
VENT2	Breathing	3.66	60	0	2

Table 3-3. Emission Source Modeling Parameters – Volume Sources

Model ID	Description	Release Height (m)	Init. Lat. Dimension (m)	Init. Vert. Dimension (ft)
REFUEL	Loading Spill Emissions	1	3.02	1.86
SPILL	Refueling Emissions	0	3.02	1.86

4. EMISSION QUANTIFICATION

The emission factors and weight percent values from South Coast Air Quality Management District Risk Assessment Procedures were used to determine emission rates and potential health impacts. Using a maximum yearly throughput of 5.5 million gallons per year and the emission factors listed in Table 4-1, the estimated yearly emissions from the project are summarized in Tables 4-2 below.

Table 4-1. SCAQMD Risk Assessment Procedure Emission Factors

Pollutant	Source	Pollutant Emission Factor (lb Pollutant/1,000 gal)
Benzene	VENT	6.83E-04
	VENT2	1.09E-04
	SPILL	1.70E-03
	REFUEL	1.46E-03
Ethylbenzene	VENT	1.61E-04
	VENT2	2.57E-05
	SPILL	3.10E-03
	REFUEL	3.42E-04
Naphthalene	VENT	6.00E-07
	VENT2	9.60E-08
	SPILL	4.18E-04
	REFUEL	1.28E-06

Table 4-2. Yearly and Hourly Project Emissions

Pollutant	Source	Throughput (gal)	Emission Rate (lb/yr)	Emission Rate (lb/hr)
Benzene	VENT	5,500,000	3.76	8.58E-04
	VENT2	5,500,000	0.60	1.37E-04
	SPILL	5,500,000	9.35	2.13E-03
	REFUEL	5,500,000	8.03	1.83E-03
Ethylbenzene	VENT	5,500,000	0.89	2.02E-04
	VENT2	5,500,000	0.14	3.23E-05
	SPILL	5,500,000	17.1	3.89E-03
	REFUEL	5,500,000	1.88	4.29E-04
Naphthalene	VENT	5,500,000	0.003	7.53E-07
	VENT2	5,500,000	0.001	1.21E-07
	SPILL	5,500,000	2.30	5.25E-04
	REFUEL	5,500,000	0.007	1.61E-06

5. AIR DISPERSION INFORMATION

5.1.1. Spatial Averaging

Spatial averaging was not used to determine risk values for receptors. Instead, the most conservative, representative value for each receptor was chosen. This methodology results in a higher risk values than spatial averaging and is therefore a more conservative approach.

5.1.2. Meteorological and Elevation Data

Five years of pre-processed meteorological data supplied by the California Air Resources Board (CARB) for 2009 through 2013 were used for this model.³ The surface station data are from Sacramento International Airport (WBAN 23232) and the upper air data are from Oakland International Airport (WBAN 23230). Terrain data were obtained from the Multi-Resolution Land Characteristics Consortium (MRLC) in the form of National Elevation Dataset (NED) files at 1/3 arc second resolution.⁴

5.1.3. Model Options

Air dispersion modeling is performed with US-EPA AERMOD through the EPA approved BREEZE user interface. All modeling exercises were conducted using the previous version of EPA AERMOD (v18081). Air dispersion modeling was prepared prior to the release of v19191. No differences are expected between AERMOD versions. Modeling was performed utilizing all regulatory defaults as defined by EPA. Selected outputs were for the 1st high 1-hr and 1st high period values.

The following modeling input files are included electronically in Appendix D.

- Surface Met Data File (*.sfc)
- Profile Met Data File (*.pfl)
- National Elevation Database File (*.ned)
- AERMAP Source File (*.aermap.src)
- AERMAP Receptor File (*.aermap.rec)
- BPIP Input File (*.bpip.inp)
- AERMOD Input File (*.aermod.inp)

The following modeling output files are included electronically in Appendix D.

- AERMAP Output File (*.aermap.out)
- BPIP Summary File (*.bpip.sum)
- BPIP Output File (*.bpip.out)
- AERMOD Output File (*.aermod.out)
- AERMOD Error File (*.aermod.err)
- Plotfiles (*.plt and *.txt)

Building downwash was not included as CAPCOA guidelines for industry-wide risk assessments of gasoline stations states “Results of the modeling indicated that the placement of the buildings and their subsequent potential to create downwash have very little effect on the resultant risks from the vent pipes.”

³ <https://www.arb.ca.gov/toxics/harp/metfiles2.htm>

⁴ <https://www.mrlc.gov/viewerjs/>

5.1.4. Receptor Placement

The following receptor placements were used for this HRA.

- **Nearby Residences and Workers (Discrete Grid)** - The modeling discrete receptor grid uses a variable density receptor grid with 10 m spacing out to 150 m from the center of the facility, and 25m spacing out to 500m from the center of the facility. Given the nature of the facility emissions and the nearby workplaces and residences, a high density receptor approach was used to ensure the worst case Residential and Worker impacts were captured in the modeling exercise. Residential and workplace receptors were identified using a joining of modeled HRA impacts with satellite imagery. The MEI receptors were conservatively matched to grid receptors with the maximum impacts on parcels identified as residences and workplaces.
- **Sensitive Receptors** - No sensitive receptors were identified within the Zone of Influence (ZOI) of the facility.
- **Census Block Receptors** - AB2588 also requires an estimates of the number of impacted individuals in residences and off-site workplaces within the ZOI. Census data is used to determine affected populations within geographic areas defined by census tracts. A census tract centroid (geographical center) is identified as a receptor location, which represents exposure to the population within that census tract. For this HRA, affected populations were estimated based on census data obtained from the built-in HARP 2.0 2010 Census Database. Figure B-2 shows the impacted census tracts for this HRA within the ZOI. Census tract information was obtained directly from HARP 2.0 by inputting the facility center point and requesting receptors out to a radius of 300 meters. All census block receptors with a population of 0 were excluded from the Cancer Burden analysis. Only one census block receptor was identified within the ZOI and is listed in Table 5-1 below.

Table 5-1. Census Block Receptor

Track No.	Block No.	X (m)	Y (m)	Elev. (m)	Population
21039	1002	642,710	4,294,813	31.25	48

- **Onsite Receptors** – No onsite receptors were identified.

5.1.5. Receptors Evaluated for Multipathway Analysis

A summary of receptor pathways chosen for the analysis is shown in Table 5-2 below.

Table 5-2. Receptor Pathways Evaluated

Pathway	Residential Receptors	Worker Receptors
Inhalation	Y	Y
Soil	Y	Y
Dermal	Y	Y
Mother's Milk	Y	
Homegrown Crop		
Chicken		
Egg		

5.1.6. Multipathway and Exposure Parameters

Only default HARP2 values were used for the pathways identified in Section 5.1.6 of this report.

5.1.7. Health Values and HARP Version Used in Risk Analysis

For this HRA, Trinity used the last version of HARP – Air Dispersion and Risk Tool (Version 2.0 dated 19121). This version of HARP utilized a health.mdb file updated on May 1, 2019.

6. SUMMARY OF RESULTS

Summary results are presented in Tables A-1 through A-4. The content contained within each table is listed below:

- Table A-1. Summary of Maximum Cancer Health Risk Impacts
- Table A-2. Summary of Maximum Chronic Non-cancer Health Risk Impacts
- Table A-3. Summary of Maximum Acute Non-cancer Health Risk Impacts
- Table A-4. Census Block Receptors and Impacts

6.1.1. Risk Driver Tables

Tables A-5 through A-7 show the driving devices and pollutants for each MEIR, MEIW, and PMI for cancer, non-cancer chronic, and non-cancer acute impacts.

7. MAPS AND AERIAL PHOTOS REQUIRED BY DISTRICT

Figures B-1 through B-6 included in Appendix B include the required imagery and isopleths and are summarized below:

- > Figure B-1. Facility Location
- > Figure B-2. Census Receptor
- > Figure B-3. 1 in 1 million resident cancer risk isopleth
- > Figure B-4. 1 in 1 million worker cancer risk isopleth
- > Figure B-5. Acute non-cancer HI of 0.1 risk isopleth
- > Figure B-6. Chronic non-cancer HI of 0.1 risk isopleth

8. REQUIRED FILES

The following files are provided electronically.

- Written HRA report (*.pdf)
- HARP 2 Facility and Emissions Database (*.mdb)
- Project Summary Report (ProjectSummaryReport.txt)
- Ground Level Concentration Files (*.txt)
- Health Database (*.mdb)
- Air Dispersion Files
 - o Surface Met Data File (*.sfc)
 - o Profile Met Data File (*.pfl)
 - o National Elevation Database File (*.ned)
 - o AERMAP Source File (*.aermap.src)
 - o AERMAP Receptor File (*.aermap.rec)
 - o BPIP Input File (*.bpip.inp)
 - o AERMOD Input File (*.aermod.inp)
 - o AERMAP Output File (*.aermap.out)
 - o BPIP Summary File (*.bpip.sum)
 - o BPIP Output File (*.bpip.out)
 - o AERMOD Output File (*.aermod.out)
 - o AERMOD Error File (*.aermod.err)
 - o Plotfiles (*.plt and *.txt)
- Risk Analysis Files
 - o Input file with risk scenario and site specific information (*.HRAInput.hra)
 - o Supplemental input file with health values (*.PolDB.csv)
 - o Supplemental input file with GLCs (*.GLCList.csv)
 - o Output log file (*.output.txt)
 - o Output file with cancer risk details (*.CancerRisk.csv)
 - o Output file with chronic non-cancer risk details (*.NCChronicRisk.csv)
 - o Output file with acute non-cancer risk details (*.NCAcuteRisk.csv)
 - o Pathway Receptor Information (*.PathwayRec.csv)

Appendix A: TABLES

Table A-1. Summary of Maximum Cancer Health Risk Impacts

Receptor type	Cancer Risk (in a million)	Significance Threshold	Receptor Number	UTME (m)	UTMN (m)
PMI	29.35	N/A	320	642,799.3	4,295,012.7
MEIR	2.84	≥10	423	642,839.3	4,294,922.7
MEIW	1.50	≥10	321	642,799.3	4,295,022.7

Table A-2. Summary of Maximum Chronic Non-cancer Health Risk Impacts

Receptor type	Chronic Non-Cancer HI	Significance Threshold	Receptor Number	UTME (m)	UTMN (m)
PMI	1.28E-01	N/A	320	642,799.3	4,295,012.7
MEIR	1.25E-02	≥1	423	642,839.3	4,294,922.7
MEIW	7.20E-02	≥1	321	642,799.3	4,295,022.7

Table A-3. Summary of Maximum Acute Non-cancer Health Risk Impacts

Receptor type	Acute Non-Cancer HI	Significance Threshold	Receptor Number	UTME (m)	UTMN (m)
PMI	7.34E-01	N/A	292	642,789.3	4,294,992.7
MEIR	2.35E-01	≥1	313	642,799.3	4,294,912.7
MEIW	4.95E-01	≥1	348	642,809.3	4,295,022.7

Table A-4. Census Block Receptors and Impacts

Track:	Block:	X (m)	Y (m)	Population:	AERMOD Description	Excess Cancer Risk	Burden
21039	1002	642,710.00	4,294,813.00	48	Track: 21039, Block: 1002, Population: 48	5.19E-07	2.49E-05
						Total:	2.49E-05

Table A-5. PMI Risk Drivers

Receptor Type	Receptor Number	UTME (m)	UTMN (m)	Driving Pollutant	Driving Source
PMI - Cancer	320	642,799.3	4,295,012.7	Benzene	SPILL
PMI - NC Chronic	320	642,799.3	4,295,012.7	Benzene	SPILL
PMI - NC Acute	292	642,789.3	4,294,992.7	Benzene	SPILL

Table A-6. MEIR Risk Drivers

Receptor Type	Receptor Number	UTME (m)	UTMN (m)	Driving Pollutant	Driving Source
MEIR - Cancer	423	642,839.3	4,294,922.7	Benzene	SPILL
MEIR - NC Chronic	423	642,839.3	4,294,922.7	Benzene	SPILL
MEIR - NC Acute	312	642,809.3	4,295,022.7	Benzene	SPILL

Table A-7. MEIW Risk Drivers

Receptor Type	Receptor Number	UTME (m)	UTMN (m)	Driving Pollutant	Driving Source
MEIW - Cancer	321	642,799.3	4,295,022.7	Benzene	SPILL
MEIW - NC Chronic	321	642,799.3	4,295,022.7	Benzene	SPILL
MEIW - NC Acute	348	642,809.3	4,295,022.7	Benzene	SPILL

Table A-8. Pollutant Health Values¹

Pollutant ID	Pollutant Abbreviation	Inhalation Cancer Potency Factor (mg/kg*d)	Inhalation Chronic REL (µg/m ³)	Inhalation Chronic 8- hour REL (µg/m ³)	Inhalation Acute REL (µg/m ³)	Inhalation Unit Risk (µg/m ³)
71432	Benzene	0.1	3	3	27	2.90E-05
100414	Ethyl Benzene	0.0087	2,000			2.50E-06
91203	Naphthalene	0.12	9			3.40E-05

1. Oral Cancer Slope Factors and Oral Chronic RELs are not listed because none of the pollutants have health values for those pathways

Appendix B: FIGURES

Figure B-1. Facility Location

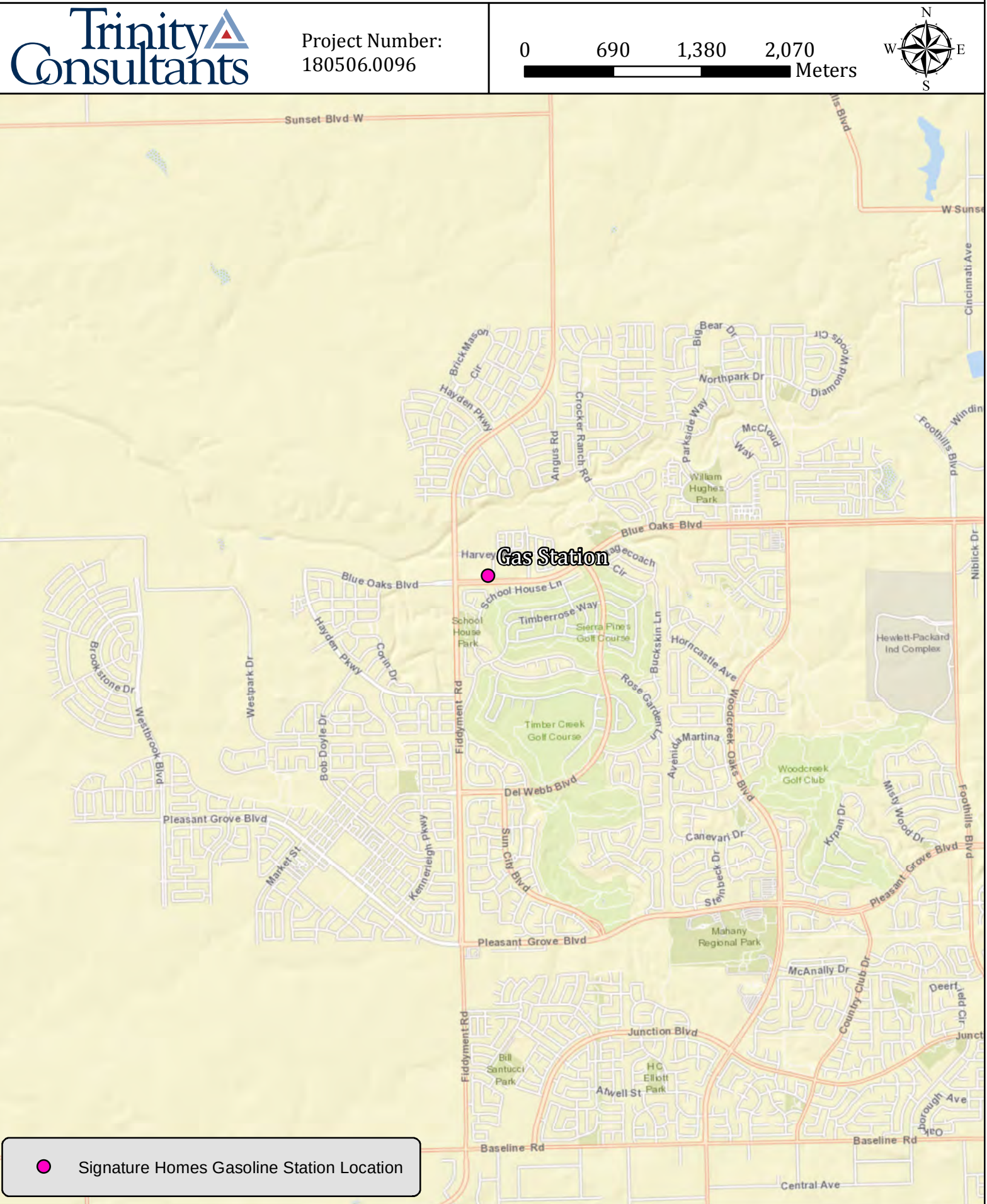


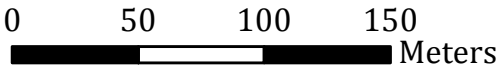
Figure B-2. Census Receptor



Figure B-3. Resident Cancer Risk



Project Number:
180506.0096



PMI - Cancer Risk - 29.35
Gas Station

MEIR - Cancer Risk - 2.84

Resident Cancer Risk Isopleth
1 in 10⁶

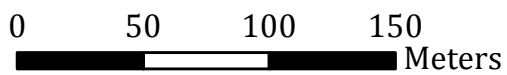
	1 - 3
	3 - 5
	5 - 7
	7 - 10
	10 - 40

Signature Homes Gasoline Station Location

Figure B-4. Worker Cancer Risk

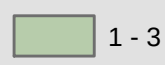


Project Number:
180506.0096



Worker Cancer Risk

1 in 10⁶



1 - 3

Signature Homes Gasoline Station Location

Figure B-5. Acute Hazard Index

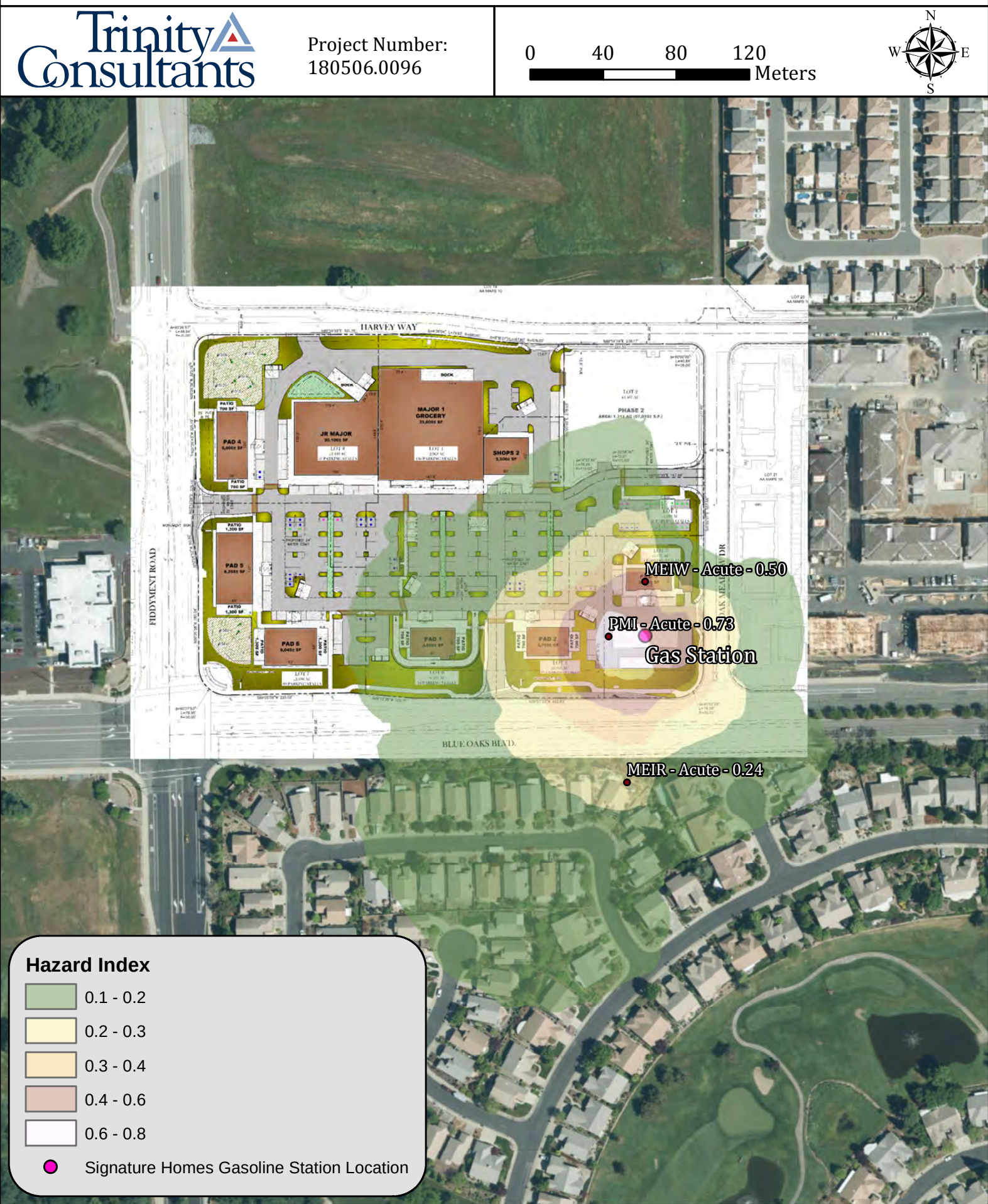
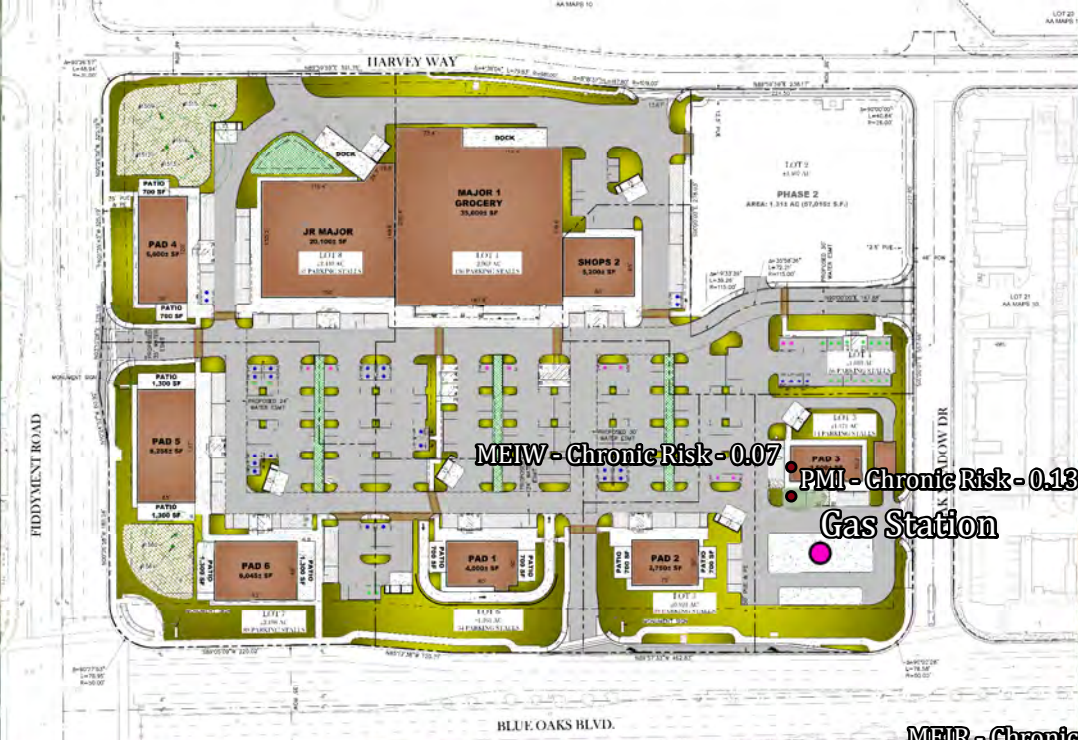
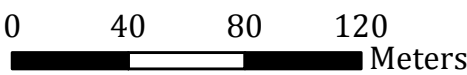


Figure B-6. Chronic Hazard Index



Project Number:
180506.0096



Hazard Index

0.1 - 0.2

Signature Homes Gasoline Station Location

Appendix C: MODELING FILES - ELECTRONIC COPY



California Tree and Landscape Consulting, Inc.

February 20, 2020

Joseph Zawidski
Signature Homes, Inc.
4670 Willow Road, Suite 200
Pleasanton, California 94588

Via Email: jzawidski@hotmail.com

PROPERTY TRANSITION ARBORIST REPORT

RE: Arborist Report and Tree Inventory for Fiddymment Farms, Unit 17 Project Site
City of Roseville, California

Executive Summary:

Signature Homes, Inc. contacted California Tree and Landscape Consulting, Inc. to document the trees on the property for a better understanding of the existing resource and any potential improvement obstacles that may arise. Signature Homes, Inc. requested an arborist report and tree inventory updates and impact assessment for the property located at Fiddymment Farms, Unit 17, suitable for submittal to the City of Roseville. This is an Updated Arborist Report and Tree Inventory for the filing of plans to develop the property.

Ed Stirtz, ISA Certified Arborist WE0510A, visited the property on February 17, 2020, to provide updated species identification, measurements of DBH and canopy, field condition notes, recommended actions, ratings, and approximate locations for the trees. A total of 26 trees were evaluated on this property, of which 26 are protected trees according to the City of Roseville's Municipal Code. Chapter 19.66, Tree Preservation, defines a "Protected Tree" as any native oak tree equal to or greater than 6 inches diameter at breast height (DBH) measured as a total of a single trunk or multiple trunks. The purpose of this field reconnaissance effort was to identify, inventory, and comment upon the current structure and vigor of the "protected trees" located within and/or overhanging the project site.

The vegetation on site includes those native oak trees as identified in the inventory and three to five other substandard size oak trees 1" to 2" diameter range.

TABLE 1

Tree Species	Trees on this Site	Protected Trees on the Site	Proposed for Removal for Development	Total Proposed for Retention
Blue Oak	13	13	11	2
Interior Live Oak	10	10	7	3
Valley Oak	3	3	2	1
TOTALS	26	26	20	6



ASSIGNMENT

Perform an examination of the site to document the presence and condition of trees protected by the City of Roseville. The “study area” for this effort includes the area as depicted on “The Plaza at Blue Oaks” preliminary tree impact plan prepared by TSD Engineering, Inc., dated February 5, 2020. (All trees protected by the City are included in the inventory.) Prepare a report of findings.

METHODS

Appendix 2 and Tables 1, 2 and 3 in this report are the detailed inventory and recommendations for the trees. The following terms and Table A – Ratings Descriptions will further explain our findings.

Species of trees is listed by our local common name and botanical name by genus and species.

DBH (diameter breast high) is normally measured at 4’6” (54” above the average ground, height but if that varies then the location where it is measured is noted here. A steel diameter tape was used to measure the trees.

Canopy radius is measured in feet. It is the farthest extent of the crown composed of leaves and small twigs measured by a Stanley digital distance meter. This measurement often defines the Critical Root Zone (CRZ) or Protection Zone (PZ), which is a circular area around a tree with a radius equal to this measurement.

Actions listed are recommendations to improve health or structure of the tree. Trees in public spaces require maintenance. If a tree is to remain and be preserved, then the tree may need some form of work to reduce the likelihood of failure and increase the longevity of the tree. Preservation requirements and actions based on a proposed development plan are not included here.

Arborist Rating is subjective to condition and is based on both the health and structure of the tree. All of the trees were rated for condition, per the recognized national standard as set up by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture (ISA) on a numeric scale of 5 (being the highest) to 0 (the worst condition, dead). The rating was done in the field at the time of the measuring and inspection.

Table A – Ratings Descriptions

No problem(s)	5	excellent
No apparent problem(s)	4	good
<u>Minor problem(s)</u>	<u>3</u>	<u>fair</u>
Major problem(s)	2	poor
Extreme problem(s)	1	hazardous, non-correctable
Dead	0	dead

Rating #0: This indicates a tree that has no significant sign of life.

Rating #1: The problems are extreme. This rating is assigned to a tree that has structural and/or health problems that no amount of work or effort can change. The issues may or may not be considered a dangerous situation.

Rating #2: The tree has major problems. If the option is taken to preserve the tree, its condition could be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, fertilization, etc. If the recommended actions are completed correctly, hazard can be reduced and the rating can be elevated to a 3. If no action is taken the tree is considered a liability and should be removed.

Rating #3: The tree is in fair condition. There are some minor structural or health problems that pose no immediate danger. When the recommended actions in an arborist report are completed correctly the defect(s) can be minimized or eliminated.

Rating #4: The tree is in good condition and there are no apparent problems that a Certified Arborist can see from a visual ground inspection. If potential structural or health problems are tended to at this stage future hazard can be reduced and more serious health problems can be averted.

Rating #5: No problems found from a visual ground inspection. Structurally, these trees have properly spaced branches and near perfect characteristics for the species. Highly rated trees are not common in natural or developed landscapes. No tree is ever perfect especially with the unpredictability of nature, but with this highest rating, the condition should be considered excellent.

Notes indicate the health, structure and environment of the tree and explain why the tree should be removed or preserved. Additional notes may indicate if problems are minor, extreme or correctible.

Remove is the recommendation that the tree be removed. The recommendation will normally be based either on poor structure or poor health and is indicated as follows:

Yes H – Tree is unhealthy

Yes S – Tree is structurally unsound

OBSERVATIONS AND CONCLUSIONS

The site is a partially developed commercial site in northwest Roseville. The east side of the site has been rough graded and has annual grasses and a single oak (#1535). The western portion of the site has two patches of oak trees, which are both well below the surrounding grade and on two sides of both patches are City arterial streets.

Development impacts to the two trees proposed to be retained in the south patch will sustain moderate impacts and are anticipated to adjust to the proposed site changes. The trees to be retained in the north patch will be subjected to some amount of summer irrigation runoff. It is difficult to say with any certainty if this will prove detrimental to the trees. It may, and it may be that the trees adjust and adapt to the presence of additional summer moisture.

Below is a summary of tree condition by Arborist Rating and Species.

TABLE 2

# Trees	Common Name	DBH	Canopy Radius	Arborist Rating	Defects Found	Retain/ Remove?
1	Blue Oak	28	33	1 Extreme Structure or Health Problems	Old callusing trunk, west side, 9' above grade with interior decay; slightly out of balance east; above average amount of deadwood.	1 Remove
1	Interior Live Oak	35	38	1 Extreme Structure or Health Problems	Old callusing basal trunk wound, north side; moderate to significant decay; out of balance north; slightly above average amount of deadwood.	1 Remove
1	Valley Oak	57	39	1 Extreme Structure or Health Problems	Numerous large scaffold failures, with resulting decay; scaffold limb failure, north side, resulting in a large callusing wound reaching from 2'-20' above grade, with moderate interior decay; above average amount of deadwood.	1 Remove

# Trees	Common Name	DBH	Canopy Radius	Arborist Rating	Defects Found	Retain/Remove?
1	Blue Oak	24	25	2 Major Structure or Health Problems	Measured 2' above grade. Old callusing trunk wound, south side, at point of limb failure, with interior decay; above average amount of deadwood.	1 Retain
11	Blue Oak	8-45	9-39	3 Fair - Minor Problems	See Tree Inventory.	11 Retain
9	Interior Live Oak	17-53	16-32	3 Fair - Minor Problems	See Tree Inventory.	9 Retain
2	Valley Oak	13-16	16-17	3 Fair - Minor Problems	Out of balance northwest.	1 Retain
26 TOTAL						3 Remove 23 Retain

RECOMMENDED REMOVALS

At this time, 3 trees (totaling 120 aggregate diameter inches) have been recommended for removal from the proposed project area due to the nature and extent of defects, compromised health, and/or structural instability noted at the time of field inventory efforts. If these trees were retained within the proposed project area, it is our opinion that they may be hazardous depending upon their proximity to planned development activities. For reference, the trees which have been recommended for removal due to the severity of noted defects, compromised health, and/or structural instability are highlighted in green within the accompanying Tree Inventory Summary and are briefly summarized as follows:

TABLE 3

Tag #	Protected By Code	Common Name	Species	Multi-Stems (inches)	DBH (inches)	Measured At	Measured Canopy Radius (feet)	Arborist Rating
1514	Yes	Blue Oak	<i>(Quercus douglasii)</i>		28	54	33	1 Extreme Structure or Health Problems
1539	Yes	Valley Oak	<i>(Quercus lobata)</i>		57	54	39	1 Extreme Structure or Health Problems
1540	Yes	Interior Live Oak	<i>(Quercus wislizeni)</i>	14,21	35	54	38	1 Extreme Structure or Health Problems

Trees numbered 1510, 1513, 1521, 1523, 1533, 1562, 1563 and 1564 were all identified as having failed and being in down and dead condition. Some of these trees were identified as down in previous updates and all have been removed from the improvement plans.

CONSTRUCTION REMOVALS

At this time, 20 trees (totaling 535 aggregate diameter inches) have been recommended for construction removal from the proposed project area. Those trees are briefly summarized as follows:

Tree #	Common Name	Species	Multi-Stems (inches)	Total DBH (inches)	DLR (feet)	Structure	Vigor
1522	Blue Oak	(<i>Quercus douglasii</i>)		18	22	Fair	Fair
1528	Blue Oak	(<i>Quercus douglasii</i>)		17	24	Poor to fair	Poor to fair
1529	Blue Oak	(<i>Quercus douglasii</i>)		26	32	Poor to fair	Fair
1530	Blue Oak	(<i>Quercus douglasii</i>)		27	33	Poor to fair	Fair
1531	Blue Oak	(<i>Quercus douglasii</i>)		24	31	Poor to fair	Fair
1532	Blue Oak	(<i>Quercus douglasii</i>)		8	9	Poor	Fair
1534	Blue Oak	(<i>Quercus douglasii</i>)		21	30	Poor	Fair
1535	Blue Oak	(<i>Quercus douglasii</i>)		14	17	Fair	Fair
1536	Interior Live Oak	(<i>Quercus wislizeni</i>)		21	22	Fair	Fair
1537	Blue Oak	(<i>Quercus douglasii</i>)		26	31	Fair	Fair
1538	Blue Oak	(<i>Quercus douglasii</i>)		45	37	Fair	Fair
1539	Valley Oak	(<i>Quercus lobata</i>)		57	39	Poor	Fair
1540	Interior Live Oak	(<i>Quercus wislizeni</i>)	14,21	35	38	Poor	Fair
1541	Blue Oak	(<i>Quercus douglasii</i>)		25	39	Fair	Fair
1542	Valley Oak	(<i>Quercus lobata</i>)		13	16	Poor to fair	Fair
1543	Interior Live Oak	(<i>Quercus wislizeni</i>)	12,12,13	37	32	Poor to fair	Fair
1544	Interior Live Oak	(<i>Quercus wislizeni</i>)	12,20,21	53	32	Poor to fair	Fair
1545	Interior Live Oak	(<i>Quercus wislizeni</i>)		21	29	Poor to fair	Fair
1559	Interior Live Oak	(<i>Quercus wislizeni</i>)		26	26	Poor to fair	Fair
1563	Interior Live Oak	(<i>Quercus wislizeni</i>)		21	32	Poor	Fair

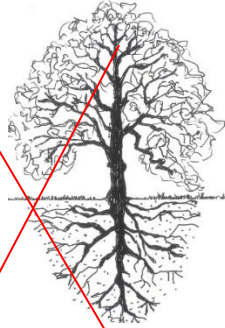
DISCUSSION

Trees need to be protected from normal construction practices if they are to remain healthy and viable on the site. Our recommendations are based on experience, and County ordinance requirements, so as to enhance tree longevity. This requires their root zones remain intact and viable, despite heavy equipment being on site, and the need to install foundations, driveways, underground utilities, and landscape irrigation systems. Simply walking and driving on soil has serious consequences for tree health.

Following is a summary of Impacts to trees during construction and Tree Protection measures that should be incorporated into the site plans in order to protect the trees. Once the plans are approved, they become the document that all contractors will follow. ***The plans become the contract between the owner and the contractor, so that only items spelled out in the plans can be expected to be followed. Hence, all protection measures, such as fence locations, mulch requirements and root pruning specifications must be shown on the plans.***

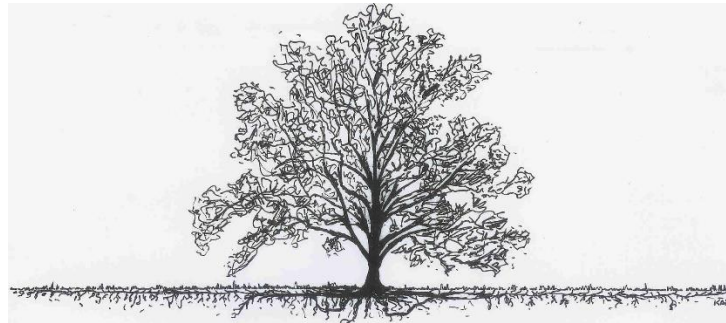
Root Structure

The majority of a tree's roots are contained in a radius from the main trunk outward approximately two to three times the canopy of the tree. These roots are located in the top 6" to 3' of soil. It is a common misconception that a tree underground resembles the canopy (see Drawing A below). The correct root structure of a tree is in Drawing B. All plants' roots need both water and air for survival. Surface roots are a common phenomenon with trees grown in compacted soil. Poor canopy development or canopy decline in mature trees is often the result of inadequate root space and/or soil compaction.



Drawing A

Common misconception of where tree roots are assumed to be located



Drawing B

The reality of where roots are generally located

Structural Issues

Limited space for canopy development produces poor structure in trees. The largest tree in a given area, which is 'shading' the other trees is considered Dominant. The 'shaded' trees are considered Suppressed. The following picture illustrates this point. Suppressed trees are more likely to become a potential hazard due to their poor structure.

Dominant Tree

Growth is upright

Canopy is balanced by limbs and foliage equally



Suppressed Tree

Canopy weight all to one side

Limbs and foliage grow away from dominant tree

Co-dominant leaders are another common structural problem in trees.

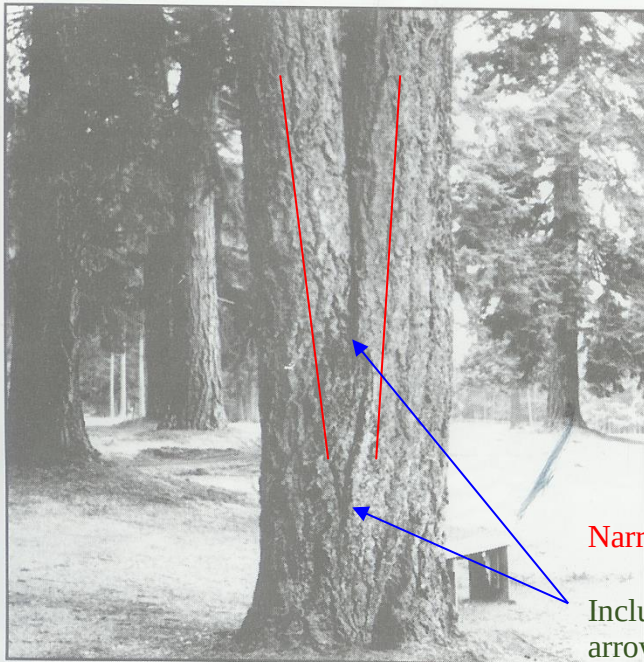


Figure 6. Codominant stems are inherently weak because the stems are of similar diameter.

The tree in this picture has a co-dominant leader at about 3' and included bark up to 7 or 8'. Included bark occurs when two or more limbs have a narrow angle of attachment resulting in bark between the stems – instead of cell to cell structure. This is considered a critical defect in trees and is the cause of many failures.

Narrow Angle

Included Bark between the arrows

Photo from Evaluation of Hazard Trees in Urban Areas by Nelda P. Matheny and James R. Clark, 1994 International Society of Arboriculture

Pruning Mature Trees for Risk Reduction

There are few good reasons to prune mature trees. Removal of deadwood, directional pruning, removal of decayed or damaged wood, and end-weight reduction as a method of mitigation for structural faults are the only reasons a mature tree should be pruned. Live wood over 3" should not be pruned unless absolutely necessary. Pruning cuts should be clean and correctly placed. Pruning should be done in accordance with the American National Standards Institute (ANSI) A300 standards. It is far better to use more small cuts than a few large cuts as small pruning wounds reduce risk while large wounds increase risk.

Pruning causes an open wound in the tree. Trees do not "heal" they compartmentalize. Any wound made today will always remain, but a healthy tree, in the absence of decay in the wound, will 'cover it' with callus tissue. Large, old pruning wounds with advanced decay are a likely failure point. Mature trees with large wounds are a high failure risk.

Overweight limbs are a common structural fault in suppressed trees. There are two remedial actions for overweight limbs (1) prune the limb to reduce the extension of the canopy, or (2) cable the limb to reduce movement. Cables do not hold weight they only stabilize the limb and require annual inspection.



Photo of another tree – not at this site.

Normal limb structure

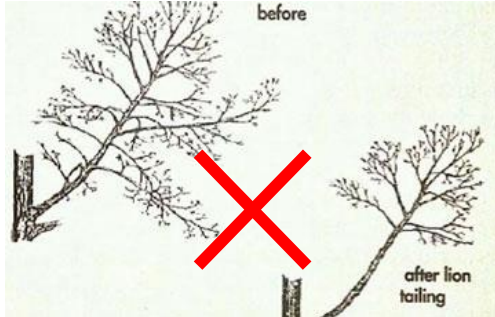
Over weight, reaching limb with main stem diameter small compared with amount of foliage present



Photo of another tree – not at this site

Lion's – Tailing is the pruning practice of removal of “an excessive number of inner and/or lower lateral branches from parent branches. Lion's tailing is not an acceptable pruning practice” ANSI A300 (part 1) 4.23. It increases the risk of failure.

Pruning – Cutting back trees changes their natural structure, while leaving trees in their natural form enhances longevity.



Arborist Classifications

There are different types of Arborists:

Tree Removal and/or Pruning Companies. These companies may be licensed by the State of California to do business, but they do not necessarily know anything about trees;

Arborists. Arborist is a broad term. It is intended to mean someone with specialized knowledge of trees but is often used to imply knowledge that is not there.

ISA Certified Arborist: An International Society of Arboriculture Certified Arborist is someone who has been trained and tested to have specialized knowledge of trees. You can look up certified arborists at the International Society of Arboriculture website: isa-arbor.org.

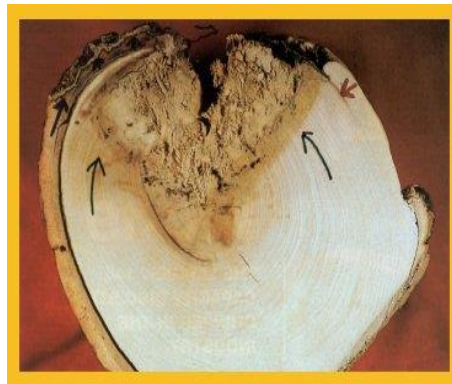
Consulting Arborist: An American Society of Consulting Arborists Registered Consulting Arborist is someone who has been trained and tested to have specialized knowledge of trees and trained and tested to provide high quality reports and documentation. You can look up registered consulting arborists at the American Society of Consulting Arborists website: <https://www.asca-consultants.org/>

Decay in Trees

Decay (in General): Fungi cause all decay of living trees. Decay is considered a disease because cell walls are altered, wood strength is affected, and living sapwood cells may be killed. Fungi decay wood by secreting enzymes. Different types of fungi cause different types of decay through the secretion of different chemical enzymes. Some decays, such as white rot, cause less wood strength loss than others because they first attack the lignin (causes cell walls to thicken and reduces susceptibility to decay and pest damage) secondarily the cellulose (another structural component in a cell walls). Others, such as soft rot, attack the cellulose chain and cause substantial losses in wood strength even in the initial stages of decay. Brown rot causes wood to become brittle and fractures easily with tension. Identification of internal decay in a tree is difficult because visible evidence may not be present.



According to Evaluation of Hazard Trees in Urban Areas (Matheny, 1994) decay is a critical factor in the stability of the tree. As decay progresses in the trunk, the stem becomes a hollow tube or cylinder rather than a solid rod. This change is not readily apparent to the casual observer. Trees require only a small amount of bark and wood to transport water, minerals and sugars. Interior heartwood can be eliminated (or degraded) to a great degree without compromising the transport process. Therefore, trees can contain significant amounts of decay without showing decline symptoms in the crown.



additional cells. The weakest of the vertical wall. Accordingly, decay progression inward at large are more than one pruning cut trunk of the tree, the likelihood of decay progression and the associated structural loss of integrity of the internal wood is high.

Compartmentalization of decay in trees is a biological process in which the cellular tissue around wounds is changed to inhibit fungal growth and provide a barrier against the spread of decay agents into the barrier zones is the formation of while a tree may be able to limit pruning cuts, in the event that there located vertically along the main

Oak Tree Impacts

Our native oak trees are easily damaged or killed by having the soil within the Critical Root Zone (CRZ) disturbed or compacted. All of the work initially performed around protected trees that will be saved should be done by people rather than by wheeled or track type tractors. Oaks are fragile giants that can take little change in soil grade, compaction, or warm season watering. Don't be fooled into believing that warm season watering has no adverse effects on native oaks. Decline and eventual death can take as long as 5-20 years with poor care and inappropriate watering. Oaks can live hundreds of years if treated properly during construction, as well as later with proper pruning, and the appropriate landscape/irrigation design.

RECOMMENTATIONS: SUMMARY OF TREE PROTECTION MEASURES

Hire a Project Arborist to help ensure protection measures are incorporated into the site plans and followed. The Project Arborist should, in cooperation with the Engineers and/or Architects:

- Identify the Root Protection Zones on the final construction drawings, prior to bidding the project.
- Show the placement of tree protection fences, as well as areas to be irrigated, fertilized and mulched on the final construction drawings.
- Clearly show trees for removal on the plans and mark them clearly on site. A Contractor who is a Certified Arborist should perform tree and stump removal. All stumps within the root zone of trees to be preserved shall be ground out using a stump router or left in place. **No trunk within the root zone of other trees shall be removed using a backhoe or other piece of grading equipment.**
- Prior to any grading, or other work on the site that will come within 50' of any tree to be preserved:
 1. Irrigate (if needed) and place a 3" layer of chip mulch over the protected root zone of all trees that will be impacted.
 2. Erect Tree Protection Fences. Place boards against trees located within 3' of construction zones, even if fenced off.
 3. Remove lower foliage that may interfere with equipment PRIOR to having grading or other equipment on site. The Project Arborist should approve the extent of foliage elevation, and oversee the pruning, performed by a contractor who is an ISA Certified Arborist.
- For cuts, expose roots by hand digging, potholing or using an air spade and then cut roots cleanly prior to further grading outside the tree protection zones.
- For fills, if a cut is required first, follow as for cuts.
- Where possible, specify geotextile fabric in lieu of compacting and root cutting, prior to placing fills on the soil surface. Any proposed retaining wall or fill soil shall be discussed with the engineer and arborist in order to reduce impacts to trees to be preserved.
- Clearly designate an area on the site outside the drip line of all trees where construction materials may be stored, and parking can take place. No materials or parking shall take place within the root zones of protected trees.
- Design utility and irrigation trenches to minimize disturbance to tree roots. Where possible, dig trenches with a hydraulic or air spade, placing pipes underneath the roots, or bore the deeper trenches underneath the roots.
- Include on the plans an Arborist inspection schedule to monitor the site during (and after) construction to ensure protection measures are followed and make recommendations for care of the trees on site, as needed.

General Tree protection measures are included as Appendix 3. These measures need to be included on the Site, Grading, Utility and Landscape Plans. A final report of recommendations specific to the plan can be completed as part of, and in conjunction with, the actual plans. This will require the arborist working directly with the engineer and architect for the project. If the above recommendations are followed, the amount of time required by the arborist for the final report should be minim this will require the arborist working directly

with the engineer and architect for the project. If the above recommendations are followed, the amount of time required by the arborist for the final report should be minimal.

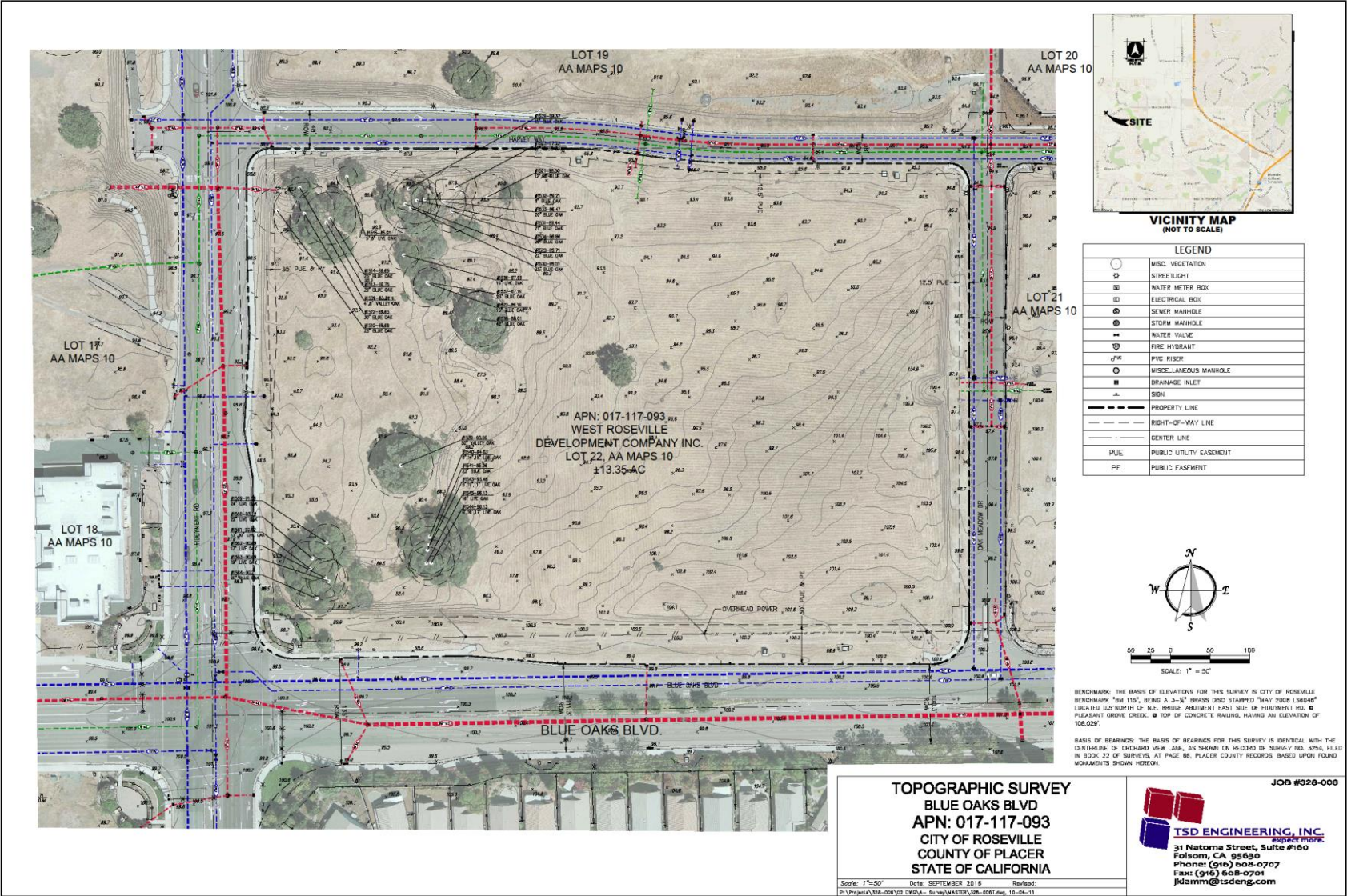
Report Prepared by:



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International Society of Arboriculture
Certified Arborist WE-0510A
ISA Tree Risk Assessment Qualified
Member, American Society of Consulting Arborists

Enc.: Appendix 1 – Map of The Property Showing Tree Locations
Appendix 2 – Tree Information Collected
Appendix 3 – General Practices for Tree Protection

APPENDIX 1 – MAP OF THE PROPERTY SHOWING TREE LOCATIONS



APPENDIX 2 – TREE INFORMATION COLLECTED

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1509	Valley Oak	(Quercus lobata)		16	17	Fair	Fair	Fair	Dormant	Fair	Fair	3 Fair - Minor Problems		No encroachment depicted.	None at this time.	
1512	Blue Oak	(Quercus douglasii)		24	25	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	2 Major Structure or Health Problems	AKA Tree 931 Measured 2' above grade. Old callusing trunk wound, south side, at point of limb failure, with interior decay; above average amount of deadwood.	Minor to negligible encroachment for retaining wall construction south side.	Perform decay detection and provide further recommendations. If retained, any excavation for retaining wall footings shall be monitored by the project arborist. May require root pruning. Will require canopy pruning.	
1514	Blue Oak	(Quercus douglasii)		28	33	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	1 Extreme Structure or Health Problems	AKA Tree 929 Old callusing trunk, west side, 9' above grade with interior decay; slightly out of balance to the east; above average amount of deadwood.	Arborist's tree removal.	Recommend removal due to nature and extent of noted defects	
1515	Interior Live Oak	(Quercus wislizeni)		17	16	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	Measured 1.5' above grade; trunk forks 2' above grade into codominant stems which then graft 6'-9' above grade; slightly above average amount of deadwood.	Minor to negligible encroachment for retaining wall construction south side.	Excavation for retaining wall footings shall be monitored by the project arborist. Root pruning may be necessary.	

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1522	Blue Oak	<i>(Quercus douglasii)</i>		18	22	Fair	Fair	Fair	Dormant	Fair	Fair	3 Fair - Minor Problems	AKA Tree 917 Above average amount of deadwood.	Tree removal.	None at this time.	18
1528	Blue Oak	<i>(Quercus douglasii)</i>		17	24	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Poor to fair	3 Fair - Minor Problems	AKA Tree 927 Out of balance to the south; above average amount of deadwood; poor bud formation.	Tree removal.	None at this time.	17
1529	Blue Oak	<i>(Quercus douglasii)</i>		26	32	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 926 Out of balance to the west; above average amount of deadwood; sprout growth on the larger wood.	Tree removal.	None at this time.	26
1530	Blue Oak	<i>(Quercus douglasii)</i>		27	33	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 925 Slightly out of balance to the south; above average amount of deadwood.	Tree removal.	None at this time.	27
1531	Blue Oak	<i>(Quercus douglasii)</i>		24	31	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 924 Out of balance to the east; above average amount of deadwood.	Tree removal.	None at this time.	24
1532	Blue Oak	<i>(Quercus douglasii)</i>		8	9	Poor	Poor to fair	Poor to fair	Dormant	Poor	Fair	3 Fair - Minor Problems	Past partial root system failure, partially on grade.	Tree removal.	None at this time.	8
1534	Blue Oak	<i>(Quercus douglasii)</i>		21	30	Poor	Poor	Poor	Dormant	Poor	Fair	3 Fair - Minor Problems	AKA Tree 922 Tree suffered a partial root system failure in the past and is lying on grade to the south; above average amount of deadwood.	Tree removal.	None at this time.	21

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1535	Blue Oak	(Quercus douglasii)		14	17	Fair	Fair	Fair	Dormant	Fair	Fair	3 Fair - Minor Problems	AKA Tree 919 Out of balance to the east; slightly above average amount of deadwood.	Tree removal.	None at this time.	14
1536	Interior Live Oak	(Quercus wislizeni)		21	22	Fair	Fair	Poor to fair	Fair	Fair	Fair	3 Fair - Minor Problems	AKA Tree 918 Old callusing lower trunk wounds, north side, with minor decay; slightly above average amount of deadwood.	Tree removal.	None at this time.	21
1537	Blue Oak	(Quercus douglasii)		26	31	Fair	Poor	Poor to fair	Dormant	Fair	Fair	3 Fair - Minor Problems	AKA Tree 916 Out of balance to the west; inherently weak primary crotch; slightly above average amount of deadwood.	Tree removal.	None at this time.	26
1538	Blue Oak	(Quercus douglasii)		45	37	Fair	Fair	Fair	Dormant	Fair	Fair	3 Fair - Minor Problems	AKA Tree 915 Root crown and some buttresses exposed from bank erosion on the northwest side; above average amount of deadwood.	Tree removal.	None at this time.	45

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1539	Valley Oak	(Quercus lobata)		57	39	Fair	Poor	Poor to fair	Dormant	Poor	Fair	1 Extreme Structure or Health Problems	AKA Tree 913 Numerous large scaffold failures, with resulting decay; scaffold limb failure, north side, resulting in a large callusing wound reaching from 2'-20' above grade, with moderate interior decay; above average amount of deadwood.	Arborist's tree removal.	Recommend removal due to nature and extent of noted defects	57
1540	Interior Live Oak	(Quercus wislizeni)	14,21	35	38	Poor	Poor	Poor to fair	Fair	Poor	Fair	1 Extreme Structure or Health Problems	AKA Tree 911Old callusing basal trunk wound, north side; moderate to significant decay; out of balance to the north; slightly above average amount of deadwood.	Arborist's tree removal.	Recommend removal due to nature and extent of noted defects	35
1541	Blue Oak	(Quercus douglasii)		25	39	Poor to fair	Poor to fair	Fair	Fair	Fair	Fair	3 Fair - Minor Problems	AKA Tree 910 Buttress roots exposed due to bank erosion; out of balance east; slightly above average amount of deadwood.	Tree removal.	Clean out crown and perform weight/size reduction pruning.	25
1542	Valley Oak	(Quercus lobata)		13	16	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	3 Fair - Minor Problems	Out of balance northwest.	Tree removal.	None at this time.	13

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1543	Interior Live Oak	(Quercus wislizeni)	12,12,13	37	32	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 909 Out of balance south; old callusing wounds in various locations on the scaffold branches, with minor decay evident.	Tree removal.	Clean out crown and perform weight/size reduction pruning.	37
1544	Interior Live Oak	(Quercus wislizeni)	12,20,21	53	32	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 908 Old callusing basal trunk wound, west side, with minor decay; out of balance east; slightly above average amount of deadwood.	Tree removal.	None at this time.	53
1545	Interior Live Oak	(Quercus wislizeni)		21	29	Poor to fair	Fair	Poor to fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 907 Old callusing basal trunk wound, north side, with minor decay; out of balance south; slightly above average amount of deadwood.	Tree removal.	None at this time.	21
1559	Interior Live Oak	(Quercus wislizeni)		26	26	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 902 Old callusing wounds, various locations, with no obvious decay; above average amount of deadwood.	Tree removal.	None at this time.	26

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1560	Interior Live Oak	(Quercus wislizeni)		25	28	Fair	Fair	Fair	Fair	Fair	Fair	3 Fair - Minor Problems	AKA Tree 901	Moderate to significant encroachment from retaining wall construction 14' north of trunk.	Excavation for retaining wall footings shall be monitored by the project arborist. Root pruning may be necessary.	
1561	Interior Live Oak	(Quercus wislizeni)		40	30	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 903 Measured 2' above grade; callusing on the south side; suspect interior decay; out of balance south; slightly above average amount of deadwood.	Minor to moderate encroachment from retaining wall construction 126'4" north of trunk.	Excavation for retaining wall footings shall be monitored by the project arborist. Root pruning may be necessary.	
1563	Interior Live Oak	(Quercus wislizeni)		21	32	Poor	Poor	Fair	Fair	Poor	Fair	3 Fair - Minor Problems	AKA Tree 905 Partial failure of the root system has left the tree growing prone on grade toward the south; terminal 15' is dead.	Tree removal.	None at this time.	21

TOTAL INVENTORIED TREES = 26 trees (685 aggregate diameter inches)
TOTAL RECOMMENDED REMOVALS = 3 trees (120 aggregate diameter inches)
PRECAUTIONARY TREES HIGHLIGHTED FOR REFERENCE
TOTAL CONSTRUCTION REMOVALS = 20 Trees (535 aggregate diameter inches)

APPENDIX 3 – GENERAL PRACTICES FOR TREE PROTECTION

Definitions

Root zone: The roots of trees grow fairly close to the surface of the soil, and spread out in a radial direction from the trunk of tree. A general rule of thumb is that they spread 2 to 3 times the radius of the canopy, or 1 to 1 ½ times the height of the tree. It is generally accepted that disturbance to root zones should be kept as far as possible from the trunk of a tree.

Inner Bark: The bark on large valley oaks and coast live oaks is quite thick, usually 1" to 2". If the bark is knocked off a tree, the inner bark, or cambial region, is exposed or removed. The cambial zone is the area of tissue responsible for adding new layers to the tree each year, so by removing it, the tree can only grow new tissue from the edges of the wound. In addition, the wood of the tree is exposed to decay fungi, so the trunk present at the time of the injury becomes susceptible to decay. Tree protection measures require that no activities occur which can knock the bark off the trees.

Methods Used in Tree Protection:

No matter how detailed Tree Protection Measures are in the initial Arborist Report, they will not accomplish their stated purpose unless they are applied to individual trees and a Project Arborist is hired to oversee the construction. The Project Arborist should have the ability to enforce the Protection Measures. The Project Arborist should be hired as soon as possible to assist in design and to become familiar with the project. He must be able to read and understand the project drawings and interpret the specifications. He should also have the ability to cooperate with the contractor, incorporating the contractor's ideas on how to accomplish the protection measures, wherever possible. It is advisable for the Project Arborist to be present at the Pre-Bid tour of the site, to answer questions the contractors may have about Tree Protection Measures. This also lets the contractors know how important tree preservation is to the developer.

Root Protection Zone (RPZ): Since in most construction projects it is not possible to protect the entire root zone of a tree, a Root Protection Zone is established for each tree to be preserved. The minimum Root Protection Zone is the area underneath the tree's canopy (out to the dripline, or edge of the canopy), plus 10'. The Project Arborist must approve work within the RPZ.

Irrigate, Fertilize, Mulch: Prior to grading on the site near any tree, the area within the Tree Protection fence should be fertilized with 4 pounds of nitrogen per 1000 square feet, and the fertilizer irrigated in. The irrigation should percolate at least 24 inches into the soil. This should be done no less than 2 weeks prior to grading or other root disturbing activities. After irrigating, cover the RPZ with at least 12" of leaf and twig mulch. Such mulch can be obtained from chipping or grinding the limbs of any trees removed on the site. Acceptable mulches can be obtained from nurseries or other commercial sources. Fibrous or shredded redwood or cedar bark mulch shall not be used anywhere on site.

Fence: Fence around the Root Protection Zone and restrict activity therein to prevent soil compaction by vehicles, foot traffic or material storage. The fenced area shall be off limits to all construction equipment, unless there is express written notification provided by the Project Arborist, and impacts are discussed and mitigated prior to work commencing.

No storage or cleaning of equipment or materials, or parking of any equipment can take place within the fenced off area, known as the RPZ.

The fence should be highly visible, and stout enough to keep vehicles and other equipment out. I recommend the fence be made of orange plastic protective fencing, kept in place by t-posts set no farther apart than 6'.

In areas of intense impact, a 6' chain link fence is preferred.

In areas with many trees, the RPZ can be fenced as one unit, rather than separately for each tree.

Where tree trunks are within 3' of the construction area, place 2" by 4" boards vertically against the tree trunks, even if fenced off. Hold the boards in place with wire. Do not nail them directly to the tree.

The purpose of the boards is to protect the trunk, should any equipment stray into the RPZ.

Elevate Foliage: Where indicated, remove lower foliage from a tree to prevent limb breakage by equipment. Low foliage can usually be removed without harming the tree, unless more than 25% of the foliage is removed. Branches need to be removed at the anatomically correct location in order to prevent decay organisms from entering the trunk. For this reason, a contractor who is an ISA Certified Arborist should perform all pruning on protected trees.¹

Expose and Cut Roots: Breaking roots with a backhoe, or crushing them with a grader, causes significant injury, which may subject the roots to decay. Ripping roots may cause them to splinter toward the base of the tree, creating much more injury than a clean cut would make. At any location where the root zone of a tree will be impacted by a trench or a cut (including a cut required for a fill and compaction), the roots shall be exposed with either a backhoe digging radially to the trunk, by hand digging, or by a hydraulic air spade, and then cut cleanly with a sharp instrument, such as chainsaw with a carbide chain. Once the roots are severed, the area behind the cut should be moistened and mulched. A root protection fence should also be erected to protect the remaining roots, if it is not already in place. Further grading or backhoe work required outside the established RPZ can then continue without further protection measures.

Protect Roots in Deeper Trenches: The location of utilities on the site can be very detrimental to trees. Design the project to use as few trenches as possible, and to keep them away from the major trees to be protected. Wherever possible, in areas where trenches will be very deep, consider boring under the roots of the trees, rather than digging the trench through the roots. This technique can be quite useful for utility trenches and pipelines.

Protect Roots in Small Trenches: After all construction is complete on a site, it is not unusual for the landscape contractor to come in and sever a large number of "preserved" roots during the installation of irrigation systems. The Project Arborist must therefore approve the landscape and irrigation plans. The irrigation system needs to be designed so the main lines are located outside the root zone of major trees, and the secondary lines are either laid on the surface (drip systems), or carefully dug with a hydraulic or air spade, and the flexible pipe fed underneath the major roots.

Design the irrigation system so it can slowly apply water (no more than ¼" to ½" of water per hour) over a longer period of time. This allows deep soaking of root zones. The system also needs to accommodate infrequent irrigation settings of once or twice a month, rather than several times a week.

Monitoring Tree Health During and After Construction: The Project Arborist should visit the site at least twice a month during construction to be certain the tree protection measures are being followed, to monitor the health of impacted trees, and make recommendations as to irrigation or other needs. After construction is

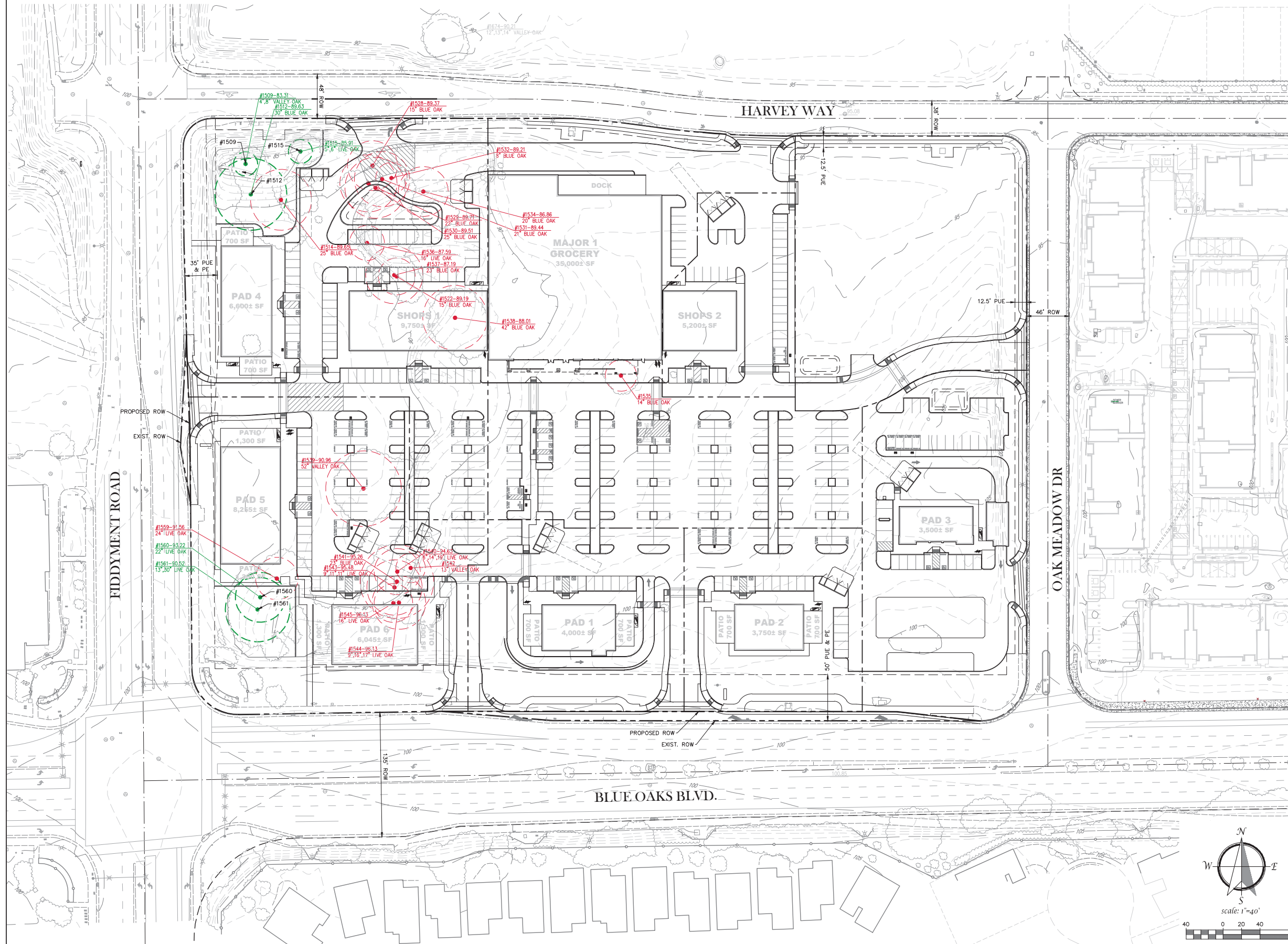
¹ International Society of Arboriculture (ISA), maintains a program of Certifying individuals. Each Certified Arborist has a number and must maintain continuing education credits to remain Certified.

complete, the arborist should monitor the site monthly for one year and make recommendations for care where needed. If longer term monitoring is required, the arborist should report this to the developer and the planning agency overseeing the project.

PRELIMINARY TREE IMPACT PLAN - ALT 4

THE PLAZA AT BLUE OAKS

1950 BLUE OAKS BLVD
FIDDYMENT F-31
ROSEVILLE, CA



PRELIMINARY
TREE IMPACT PLAN
MARCH 16, 2020

TSD ENGINEERING, INC.
expect more.
785 Orchard Drive, Suite #110
Folsom, CA 95630
Phone: (916) 608-0707
Fax: (916) 608-0701

SP-4

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Plaza at Blue Oaks
Placer-Sacramento County, Annual

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Supermarket	35.00	1000sqft	0.80	35,000.00	0
Regional Shopping Center	43.60	1000sqft	1.00	43,600.00	0
Convenience Market With Gas Pumps	12.00	Pump	0.04	1,694.10	0
Parking Lot	109.00	1000sqft	2.50	109,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	74
Climate Zone	2			Operational Year	2021
Utility Company	Roseville Electric				
CO2 Intensity (lb/MW hr)	531.85	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Start of construction and operational year are estimates. CO2 intensity factor adjusted to reflect R.E.'s anticipated progress towards statewide RPS goals.

Land Use -

Architectural Coating - Low VOC paint.

Vehicle Trips - Non-residential project not anticipated to increase vmt so no mobile analysis is required.

Area Coating - Low VOC.

Energy Use -

Sequestration - based on landscape plan.

Mobile Land Use Mitigation -

Mobile Commute Mitigation - designated park-n-ride site (20 spaces).

Area Mitigation -

Energy Mitigation -

Water Mitigation -

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Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	50.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	50.00
tblArchitecturalCoating	EF_Parking	100.00	50.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	50
tblAreaCoating	Area_EF_Nonresidential_Interior	100	50
tblAreaCoating	Area_EF_Parking	100	50
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblProjectCharacteristics	CO2IntensityFactor	793.8	531.85
tblSequestration	NumberOfNewTrees	0.00	373.00
tblVehicleTrips	ST_TR	204.47	0.00
tblVehicleTrips	ST_TR	49.97	0.00
tblVehicleTrips	ST_TR	177.59	0.00
tblVehicleTrips	SU_TR	166.88	0.00
tblVehicleTrips	SU_TR	25.24	0.00
tblVehicleTrips	SU_TR	166.44	0.00
tblVehicleTrips	WD_TR	542.60	0.00
tblVehicleTrips	WD_TR	42.70	0.00
tblVehicleTrips	WD_TR	102.24	0.00

2.0 Emissions Summary

Plaza at Blue Oaks - Placer-Sacramento County, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1221	1.1780	0.8762	1.7600e-003	0.0943	0.0585	0.1527	0.0445	0.0546	0.0991	0.0000	154.9667	154.9667	0.0327	0.0000	155.7850
2021	0.4045	1.9469	1.7883	3.8100e-003	0.0689	0.0909	0.1598	0.0188	0.0855	0.1042	0.0000	336.6221	336.6221	0.0581	0.0000	338.0752
Maximum	0.4045	1.9469	1.7883	3.8100e-003	0.0943	0.0909	0.1598	0.0445	0.0855	0.1042	0.0000	336.6221	336.6221	0.0581	0.0000	338.0752

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1221	1.1780	0.8762	1.7600e-003	0.0943	0.0585	0.1527	0.0445	0.0546	0.0991	0.0000	154.9665	154.9665	0.0327	0.0000	155.7848
2021	0.4045	1.9469	1.7883	3.8100e-003	0.0689	0.0909	0.1598	0.0188	0.0855	0.1042	0.0000	336.6219	336.6219	0.0581	0.0000	338.0749
Maximum	0.4045	1.9469	1.7883	3.8100e-003	0.0943	0.0909	0.1598	0.0445	0.0855	0.1042	0.0000	336.6219	336.6219	0.0581	0.0000	338.0749

[illegible]

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-1-2020	11-30-2020	1.0056	1.0056
2	12-1-2020	2-28-2021	0.7721	0.7721
3	3-1-2021	5-31-2021	0.7616	0.7616
4	6-1-2021	8-31-2021	0.7610	0.7610
5	9-1-2021	9-30-2021	0.1484	0.1484
		Highest	1.0056	1.0056

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3402	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8000e-003
Energy	0.0102	0.0929	0.0780	5.6000e-004		7.0600e-003	7.0600e-003		7.0600e-003	7.0600e-003	0.0000	578.9382	578.9382	0.0280	7.2400e-003	581.7968
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	49.3633	0.0000	49.3633	2.9173	0.0000	122.2956
Water						0.0000	0.0000		0.0000	0.0000	2.4332	11.8603	14.2935	0.2506	6.0300e-003	22.3557
Total	0.3504	0.0929	0.0799	5.6000e-004	0.0000	7.0700e-003	7.0700e-003	0.0000	7.0700e-003	7.0700e-003	51.7965	590.8021	642.5986	3.1959	0.0133	726.4519

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.3167	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8000e-003
Energy	0.0102	0.0929	0.0780	5.6000e-004		7.0600e-003	7.0600e-003		7.0600e-003	7.0600e-003	0.0000	578.9382	578.9382	0.0280	7.2400e-003	581.7968
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	49.3633	0.0000	49.3633	2.9173	0.0000	122.2956
Water						0.0000	0.0000		0.0000	0.0000	2.4332	11.8603	14.2935	0.2506	6.0300e-003	22.3557
Total	0.3270	0.0929	0.0799	5.6000e-004	0.0000	7.0700e-003	7.0700e-003	0.0000	7.0700e-003	7.0700e-003	51.7965	590.8021	642.5986	3.1959	0.0133	726.4519

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2.3 Vegetation**Vegetation**

	CO2e
Category	MT
New Trees	264.0840
Total	264.0840

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/1/2020	9/28/2020	5	20	
2	Site Preparation	Site Preparation	9/29/2020	10/5/2020	5	5	
3	Grading	Grading	10/6/2020	10/15/2020	5	8	
4	Building Construction	Building Construction	10/16/2020	9/2/2021	5	230	
5	Paving	Paving	9/3/2021	9/28/2021	5	18	
6	Architectural Coating	Architectural Coating	9/29/2021	10/22/2021	5	18	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 4****Acres of Paving: 2.5**

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Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 120,441; Non-Residential Outdoor: 40,147; Striped Parking Area: 6,540 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	71.00	31.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386

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3.2 Demolition - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.6000e-004	3.8900e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0167	1.0167	3.0000e-005	0.0000	1.0173
Total	5.2000e-004	3.6000e-004	3.8900e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0167	1.0167	3.0000e-005	0.0000	1.0173

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385

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3.2 Demolition - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.6000e-004	3.8900e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0167	1.0167	3.0000e-005	0.0000	1.0173
Total	5.2000e-004	3.6000e-004	3.8900e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0167	1.0167	3.0000e-005	0.0000	1.0173

3.3 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4253
Total	0.0102	0.1060	0.0538	1.0000e-004	0.0452	5.4900e-003	0.0507	0.0248	5.0500e-003	0.0299	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4253

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3.3 Site Preparation - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.1000e-004	1.1700e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3050	0.3050	1.0000e-005	0.0000	0.3052
Total	1.6000e-004	1.1000e-004	1.1700e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3050	0.3050	1.0000e-005	0.0000	0.3052

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0102	0.1060	0.0538	1.0000e-004		5.4900e-003	5.4900e-003		5.0500e-003	5.0500e-003	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4252
Total	0.0102	0.1060	0.0538	1.0000e-004	0.0452	5.4900e-003	0.0507	0.0248	5.0500e-003	0.0299	0.0000	8.3577	8.3577	2.7000e-003	0.0000	8.4252

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3.3 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.1000e-004	1.1700e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3050	0.3050	1.0000e-005	0.0000	0.3052
Total	1.6000e-004	1.1000e-004	1.1700e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3050	0.3050	1.0000e-005	0.0000	0.3052

3.4 Grading - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	9.7200e-003	0.1055	0.0642	1.2000e-004	0.0262	5.0900e-003	0.0313	0.0135	4.6900e-003	0.0182	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078

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3.4 Grading - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.5600e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4067	0.4067	1.0000e-005	0.0000	0.4069
Total	2.1000e-004	1.5000e-004	1.5600e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4067	0.4067	1.0000e-005	0.0000	0.4069

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.7200e-003	0.1055	0.0642	1.2000e-004		5.0900e-003	5.0900e-003		4.6900e-003	4.6900e-003	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078
Total	9.7200e-003	0.1055	0.0642	1.2000e-004	0.0262	5.0900e-003	0.0313	0.0135	4.6900e-003	0.0182	0.0000	10.4235	10.4235	3.3700e-003	0.0000	10.5078

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3.4 Grading - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.5600e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4067	0.4067	1.0000e-005	0.0000	0.4069
Total	2.1000e-004	1.5000e-004	1.5600e-003	0.0000	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4067	0.4067	1.0000e-005	0.0000	0.4069

3.5 Building Construction - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0583	0.5276	0.4633	7.4000e-004		0.0307	0.0307		0.0289	0.0289	0.0000	63.6928	63.6928	0.0155	0.0000	64.0812
Total	0.0583	0.5276	0.4633	7.4000e-004		0.0307	0.0307		0.0289	0.0289	0.0000	63.6928	63.6928	0.0155	0.0000	64.0812

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3.5 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1400e-003	0.1014	0.0200	2.5000e-004	5.5700e-003	4.4000e-004	6.0100e-003	1.6100e-003	4.2000e-004	2.0300e-003	0.0000	23.5320	23.5320	1.1500e-003	0.0000	23.5608
Worker	6.7700e-003	4.7300e-003	0.0507	1.5000e-004	0.0153	1.0000e-004	0.0154	4.0800e-003	9.0000e-005	4.1700e-003	0.0000	13.2338	13.2338	3.3000e-004	0.0000	13.2420
Total	9.9100e-003	0.1061	0.0707	4.0000e-004	0.0209	5.4000e-004	0.0214	5.6900e-003	5.1000e-004	6.2000e-003	0.0000	36.7658	36.7658	1.4800e-003	0.0000	36.8028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0583	0.5276	0.4633	7.4000e-004		0.0307	0.0307		0.0289	0.0289	0.0000	63.6927	63.6927	0.0155	0.0000	64.0811
Total	0.0583	0.5276	0.4633	7.4000e-004		0.0307	0.0307		0.0289	0.0289	0.0000	63.6927	63.6927	0.0155	0.0000	64.0811

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3.5 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.1400e-003	0.1014	0.0200	2.5000e-004	5.5700e-003	4.4000e-004	6.0100e-003	1.6100e-003	4.2000e-004	2.0300e-003	0.0000	23.5320	23.5320	1.1500e-003	0.0000	23.5608
Worker	6.7700e-003	4.7300e-003	0.0507	1.5000e-004	0.0153	1.0000e-004	0.0154	4.0800e-003	9.0000e-005	4.1700e-003	0.0000	13.2338	13.2338	3.3000e-004	0.0000	13.2420
Total	9.9100e-003	0.1061	0.0707	4.0000e-004	0.0209	5.4000e-004	0.0214	5.6900e-003	5.1000e-004	6.2000e-003	0.0000	36.7658	36.7658	1.4800e-003	0.0000	36.8028

3.5 Building Construction - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1663	1.5253	1.4503	2.3600e-003		0.0839	0.0839		0.0789	0.0789	0.0000	202.6826	202.6826	0.0489	0.0000	203.9051
Total	0.1663	1.5253	1.4503	2.3600e-003		0.0839	0.0839		0.0789	0.0789	0.0000	202.6826	202.6826	0.0489	0.0000	203.9051

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3.5 Building Construction - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.3700e-003	0.2961	0.0566	7.8000e-004	0.0177	6.8000e-004	0.0184	5.1300e-003	6.5000e-004	5.7700e-003	0.0000	74.2807	74.2807	3.4600e-003	0.0000	74.3672
Worker	0.0200	0.0135	0.1475	4.5000e-004	0.0488	3.2000e-004	0.0491	0.0130	2.9000e-004	0.0133	0.0000	40.6263	40.6263	9.3000e-004	0.0000	40.6495
Total	0.0284	0.3096	0.2041	1.2300e-003	0.0665	1.0000e-003	0.0675	0.0181	9.4000e-004	0.0191	0.0000	114.9069	114.9069	4.3900e-003	0.0000	115.0167

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1663	1.5253	1.4503	2.3600e-003		0.0839	0.0839		0.0789	0.0789	0.0000	202.6824	202.6824	0.0489	0.0000	203.9048
Total	0.1663	1.5253	1.4503	2.3600e-003		0.0839	0.0839		0.0789	0.0789	0.0000	202.6824	202.6824	0.0489	0.0000	203.9048

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3.5 Building Construction - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.3700e-003	0.2961	0.0566	7.8000e-004	0.0177	6.8000e-004	0.0184	5.1300e-003	6.5000e-004	5.7700e-003	0.0000	74.2807	74.2807	3.4600e-003	0.0000	74.3672
Worker	0.0200	0.0135	0.1475	4.5000e-004	0.0488	3.2000e-004	0.0491	0.0130	2.9000e-004	0.0133	0.0000	40.6263	40.6263	9.3000e-004	0.0000	40.6495
Total	0.0284	0.3096	0.2041	1.2300e-003	0.0665	1.0000e-003	0.0675	0.0181	9.4000e-004	0.0191	0.0000	114.9069	114.9069	4.3900e-003	0.0000	115.0167

3.6 Paving - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493
Paving	3.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0131	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493

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3.6 Paving - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.9000e-004	4.2700e-003	1.0000e-005	1.4100e-003	1.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	3.8000e-004	0.0000	1.1771	1.1771	3.0000e-005	0.0000	1.1778
Total	5.8000e-004	3.9000e-004	4.2700e-003	1.0000e-005	1.4100e-003	1.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	3.8000e-004	0.0000	1.1771	1.1771	3.0000e-005	0.0000	1.1778

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493
Paving	3.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0131	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493

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3.6 Paving - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-004	3.9000e-004	4.2700e-003	1.0000e-005	1.4100e-003	1.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	3.8000e-004	0.0000	1.1771	1.1771	3.0000e-005	0.0000	1.1778
Total	5.8000e-004	3.9000e-004	4.2700e-003	1.0000e-005	1.4100e-003	1.0000e-005	1.4200e-003	3.8000e-004	1.0000e-005	3.8000e-004	0.0000	1.1771	1.1771	3.0000e-005	0.0000	1.1778

3.7 Architectural Coating - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1937					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	0.1956	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019

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3.7 Architectural Coating - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.7000e-004	2.9900e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8240	0.8240	2.0000e-005	0.0000	0.8244
Total	4.1000e-004	2.7000e-004	2.9900e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8240	0.8240	2.0000e-005	0.0000	0.8244

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1937					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9700e-003	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019
Total	0.1956	0.0137	0.0164	3.0000e-005		8.5000e-004	8.5000e-004		8.5000e-004	8.5000e-004	0.0000	2.2979	2.2979	1.6000e-004	0.0000	2.3019

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3.7 Architectural Coating - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	2.7000e-004	2.9900e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8240	0.8240	2.0000e-005	0.0000	0.8244
Total	4.1000e-004	2.7000e-004	2.9900e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8240	0.8240	2.0000e-005	0.0000	0.8244

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Provide Riade Sharing Program

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
Supermarket	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Convenience Market With Gas	9.50	7.30	7.30	0.80	80.20	19.00	14	21	65
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11
Supermarket	9.50	7.30	7.30	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Plaza at Blue Oaks - Placer-Sacramento County, Annual

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.494811	0.040252	0.220236	0.128508	0.023782	0.006284	0.029295	0.046215	0.001446	0.001205	0.005961	0.000773	0.001232
Parking Lot	0.494811	0.040252	0.220236	0.128508	0.023782	0.006284	0.029295	0.046215	0.001446	0.001205	0.005961	0.000773	0.001232
Regional Shopping Center	0.494811	0.040252	0.220236	0.128508	0.023782	0.006284	0.029295	0.046215	0.001446	0.001205	0.005961	0.000773	0.001232
Supermarket	0.494811	0.040252	0.220236	0.128508	0.023782	0.006284	0.029295	0.046215	0.001446	0.001205	0.005961	0.000773	0.001232

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	477.7982	477.7982	0.0261	5.3900e-003	480.0558
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	477.7982	477.7982	0.0261	5.3900e-003	480.0558
NaturalGas Mitigated	0.0102	0.0929	0.0780	5.6000e-004		7.0600e-003	7.0600e-003		7.0600e-003	7.0600e-003	0.0000	101.1399	101.1399	1.9400e-003	1.8500e-003	101.7410
NaturalGas Unmitigated	0.0102	0.0929	0.0780	5.6000e-004		7.0600e-003	7.0600e-003		7.0600e-003	7.0600e-003	0.0000	101.1399	101.1399	1.9400e-003	1.8500e-003	101.7410

Plaza at Blue Oaks - Placer-Sacramento County, Annual

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	19821	1.1000e-004	9.7000e-004	8.2000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0577	1.0577	2.0000e-005	2.0000e-005	1.0640
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	510120	2.7500e-003	0.0250	0.0210	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2220	27.2220	5.2000e-004	5.0000e-004	27.3837
Supermarket	1.36535e+006	7.3600e-003	0.0669	0.0562	4.0000e-004		5.0900e-003	5.0900e-003		5.0900e-003	5.0900e-003	0.0000	72.8603	72.8603	1.4000e-003	1.3400e-003	73.2933
Total		0.0102	0.0929	0.0780	5.6000e-004		7.0600e-003	7.0600e-003		7.0600e-003	7.0600e-003	0.0000	101.1400	101.1400	1.9400e-003	1.8600e-003	101.7410

Plaza at Blue Oaks - Placer-Sacramento County, Annual

5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Convenience Market With Gas Pumps	19821	1.1000e-004	9.7000e-004	8.2000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0577	1.0577	2.0000e-005	2.0000e-005	1.0640
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	510120	2.7500e-003	0.0250	0.0210	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2220	27.2220	5.2000e-004	5.0000e-004	27.3837
Supermarket	1.36535e+006	7.3600e-003	0.0669	0.0562	4.0000e-004		5.0900e-003	5.0900e-003		5.0900e-003	5.0900e-003	0.0000	72.8603	72.8603	1.4000e-003	1.3400e-003	73.2933
Total		0.0102	0.0929	0.0780	5.6000e-004		7.0600e-003	7.0600e-003		7.0600e-003	7.0600e-003	0.0000	101.1400	101.1400	1.9400e-003	1.8600e-003	101.7410

Plaza at Blue Oaks - Placer-Sacramento County, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	19973.4	4.8185	2.6000e-004	5.0000e-005	4.8412
Parking Lot	38150	9.2034	5.0000e-004	1.0000e-004	9.2469
Regional Shopping Center	514044	124.0096	6.7600e-003	1.4000e-003	124.5955
Supermarket	1.4084e+006	339.7668	0.0185	3.8300e-003	341.3722
Total		477.7982	0.0261	5.3800e-003	480.0558

Plaza at Blue Oaks - Placer-Sacramento County, Annual

5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	19973.4	4.8185	2.6000e-004	5.0000e-005	4.8412
Parking Lot	38150	9.2034	5.0000e-004	1.0000e-004	9.2469
Regional Shopping Center	514044	124.0096	6.7600e-003	1.4000e-003	124.5955
Supermarket	1.4084e+006	339.7668	0.0185	3.8300e-003	341.3722
Total		477.7982	0.0261	5.3800e-003	480.0558

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

Use Low VOC Cleaning Supplies

Plaza at Blue Oaks - Placer-Sacramento County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3167	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8000e-003
Unmitigated	0.3402	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0194					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3206					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8000e-003
Total	0.3402	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8000e-003

Plaza at Blue Oaks - Placer-Sacramento County, Annual

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0194					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2972					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8000e-003
Total	0.3167	2.0000e-005	1.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.8000e-003

7.0 Water Detail**7.1 Mitigation Measures Water**

Use Water Efficient Landscaping

Plaza at Blue Oaks - Placer-Sacramento County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.2935	0.2506	6.0300e-003	22.3557
Unmitigated	14.2935	0.2506	6.0300e-003	22.3557

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.125486 / 0.0769109	0.2686	4.1000e-003	1.0000e-004	0.4006
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.22956 / 1.97941	6.9117	0.1056	2.5500e-003	10.3109
Supermarket	4.31439 / 0.133435	7.1133	0.1409	3.3800e-003	11.6442
Total		14.2935	0.2506	6.0300e-003	22.3557

Plaza at Blue Oaks - Placer-Sacramento County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.125486 / 0.0769109	0.2686	4.1000e-003	1.0000e-004	0.4006
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.22956 / 1.97941	6.9117	0.1056	2.5500e-003	10.3109
Supermarket	4.31439 / 0.133435	7.1133	0.1409	3.3800e-003	11.6442
Total		14.2935	0.2506	6.0300e-003	22.3557

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Plaza at Blue Oaks - Placer-Sacramento County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	49.3633	2.9173	0.0000	122.2956
Unmitigated	49.3633	2.9173	0.0000	122.2956

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	45.78	9.2929	0.5492	0.0000	23.0228
Supermarket	197.4	40.0704	2.3681	0.0000	99.2728
Total		49.3634	2.9173	0.0000	122.2956

Plaza at Blue Oaks - Placer-Sacramento County, Annual

8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	45.78	9.2929	0.5492	0.0000	23.0228
Supermarket	197.4	40.0704	2.3681	0.0000	99.2728
Total		49.3634	2.9173	0.0000	122.2956

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

Plaza at Blue Oaks - Placer-Sacramento County, Annual

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	264.0840	0.0000	0.0000	264.0840

11.2 Net New Trees**Species Class**

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	373	264.0840	0.0000	0.0000	264.0840
Total		264.0840	0.0000	0.0000	264.0840

Environmental Noise Assessment

The Plaza at Blue Oaks Commercial Development

Roseville, California

BAC Job # 2018-026

Prepared For:

Signature Homes, Inc.

Attn: Mr. Stephen M. Hicks
4670 Willow Road, Suite 200
Pleasanton, CA 94588

Prepared By:

Bollard Acoustical Consultants, Inc.



Paul Bollard, President

April 2, 2018



Introduction

The proposed Plaza at Blue Oaks Commercial Development (project) is located on the east side of Fiddymment Road, between Blue Oaks Boulevard and Harvey Way in Roseville, California. The development proposes to include a shopping center, ARCO AM/PM facility with car wash, and other commercial uses on three parcels totaling approximately 13 acres. The project site is located adjacent to existing single-family residential uses (south), existing commercial uses (west), and future medium and high-density residential uses (north and east). The project area is shown on Figure 1. The overall project site plan and ARCO AM/PM facility site plan are shown on Figures 2 and 3, respectively.

Due to the proximity of the proposed commercial development to the adjacent existing and future residential uses, the City of Roseville has requested an environmental noise assessment to ensure that the applicable noise standards are satisfied. In response to this request, the project applicant has retained Bollard Acoustical Consultants, Inc. (BAC) to prepare this noise analysis. Specifically, the purposes of this analysis are to quantify noise levels associated with the proposed on-site commercial-related activities (i.e., on-site truck circulation, loading dock activities, and car wash operations), to assess the state of compliance of those noise levels with the applicable City of Roseville noise standards, and if necessary, to recommend measures to reduce those noise levels to acceptable limits at the nearest noise-sensitive uses.

Noise Fundamentals and Terminology

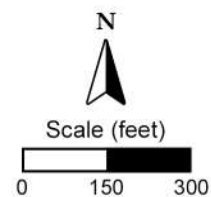
Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard, and thus are called sound. Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) correspond closely to human perception of relative loudness. Appendix A contains definitions of Acoustical Terminology. Figure 4 shows common noise levels associated with various sources.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels in decibels.



Legend

- Project Border
- # Long-Term Noise Measurement Locations

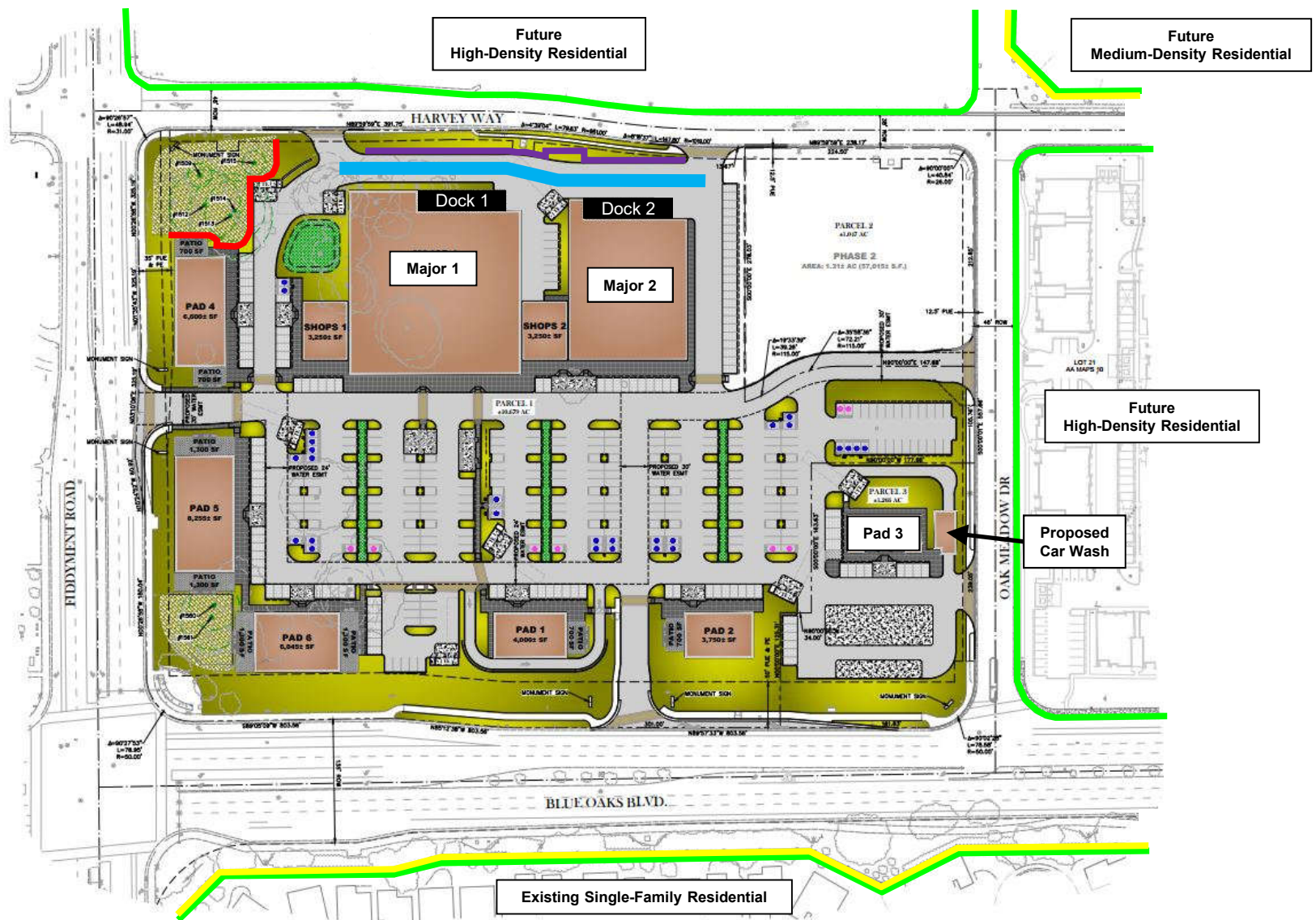


The Plaza at Blue Oaks Development
Roseville, California

Project Area

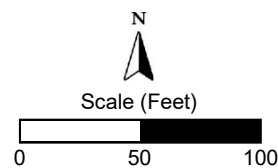
Figure 1





Legend

- Parcel Boundaries
- Existing 6-Foot Tall Solid Noise Barriers
- Proposed Delivery Truck Lane
- Proposed 11-Foot Tall Retaining Wall
- On-Site Truck Circulation & Loading Dock Noise Mitigation - Solid Noise Barrier

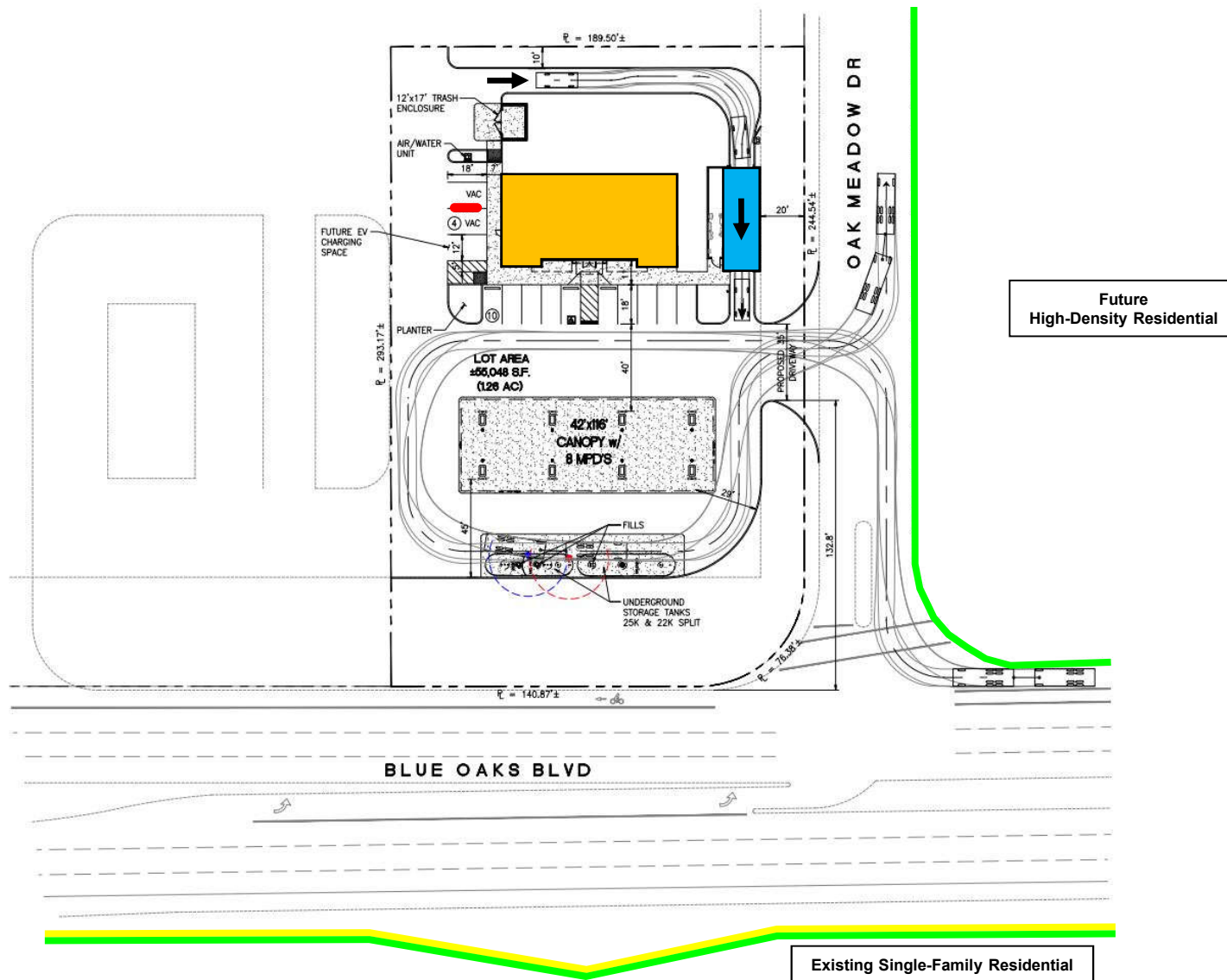


The Plaza at Blue Oaks Development
Roseville, California

Overall Project Site Plan

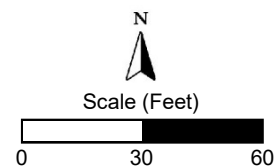
Figure 2





Legend

- Parcel Boundaries
- Existing 6-Foot Tall Solid Noise Barrier
- Proposed ARCO AM/PM Minimart
- Proposed Car Wash Tunnel
- Proposed Vacuum Systems

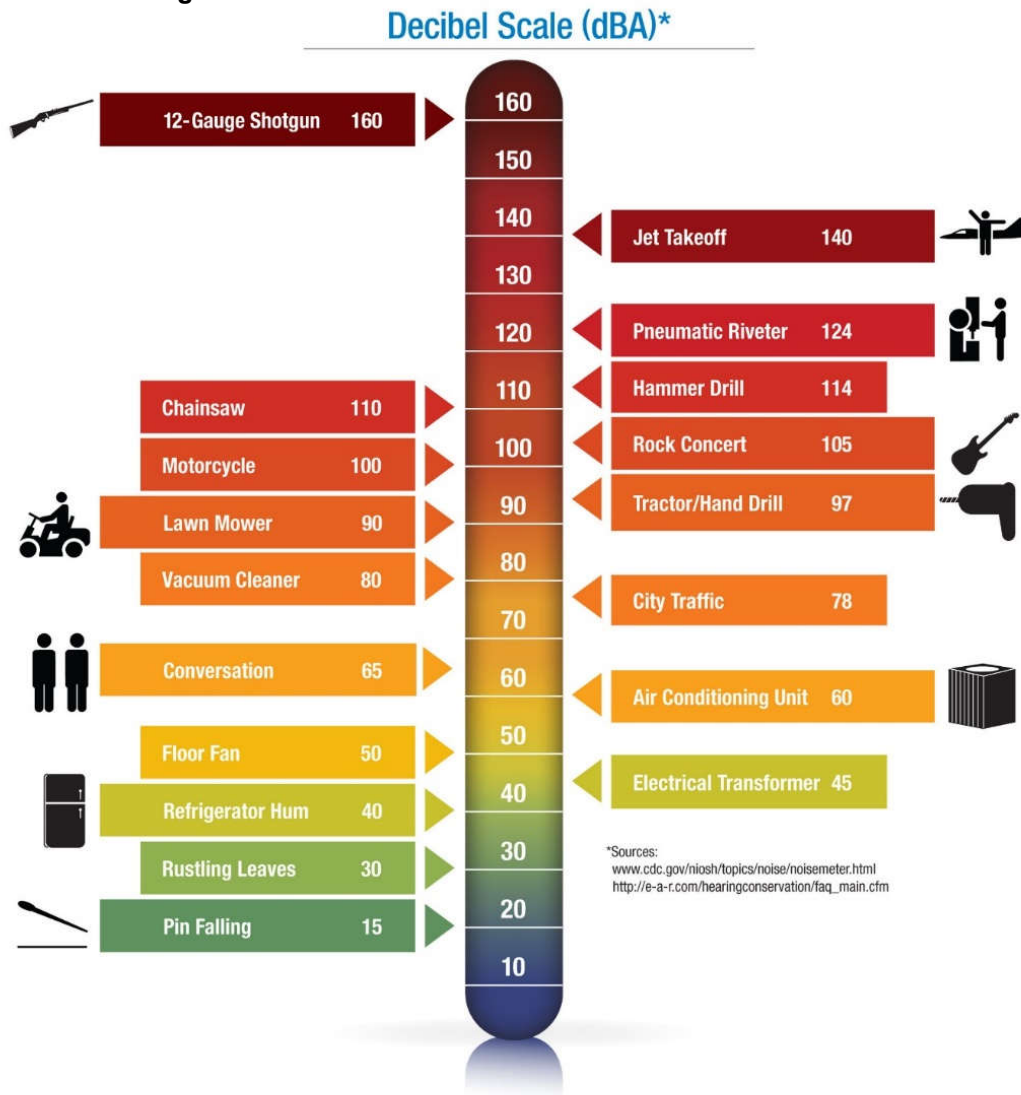


The Plaza at Blue Oaks Development
Roseville, California

Project Site Plan – ARCO AM/PM Facility

Figure 3



Figure 4. Noise levels associated with common noise sources.

Community noise is commonly described in terms of the “ambient” noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}) over a given time period (usually one hour). The L_{eq} is the foundation of the Day-Night Average Level noise descriptor, L_{dn} , and shows very good correlation with community response to noise.

The Day-Night Average Level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10 p.m. to 7 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. L_{dn} -based noise standards are commonly used to assess noise impacts associated with traffic, railroad and aircraft noise sources.

Criteria for Acceptable Noise Exposure

City of Roseville General Plan Noise Element 2035

The Noise Element of the City of Roseville General Plan establishes non-transportation noise exposure limits as summarized below in Table 1 (Table IX-3 of the Noise Element). These limits are applicable to non-transportation noise sources (i.e., on-site truck movements, loading docks, and car wash operations) affecting existing noise-sensitive land uses.

Table 1 Performance Standards For Non-Transportation Noise Sources or Projects Affected by Non-Transportation Noise Sources (As Measured at the Property Line of the Noise-Sensitive Uses) City of Roseville General Plan Noise Element		
Noise Level Descriptor	Daytime (7 a.m. - 10 p.m.)	Nighttime (10 p.m. - 7 a.m.)
Hourly L_{eq} , dB	50	45
Maximum Level (L_{max}), dB	70	65
Notes: -Each of the noise limits specified above should be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. Such noises are generally considered by residents to be particularly annoying and are a primary source of noise complaints. -These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). -No Standards have been included for interior noise levels. Standard construction practices should, with exterior noise levels identified, result in acceptable interior noise levels. Source: City of Roseville General Plan Noise Element 2035, Table IX-3		

Noise Standards Applied to the Project

The nearest noise-sensitive land uses to the project site are existing and future residential developments located north, south, and east of the project site. Because the hours of operation of the future commercial uses are not known at this time, it was assumed that each of the evaluated noise sources could potentially occur during any hour within a 24-hour period. In reality, it is likely that the majority of the future commercial uses would not operate during nighttime hours (10 p.m. to 7 a.m.). Based on this conservative assumption, the City of Roseville daytime and nighttime noise level standards for noise-sensitive (residential) land uses shown in Table 1 were applied to the project noise sources.

Existing Ambient Noise Environment

The existing ambient noise level environment in the immediate project vicinity is primarily defined by traffic on Fiddymont Road and Blue Oaks Boulevard. To quantify the existing ambient noise environment in the project vicinity, BAC conducted a continuous (24-hour) noise level measurements at two (2) locations on the project site from February 14-15, 2018. The noise measurement locations are shown on Figure 1, identified as Sites 1 and 2.

Larson-Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used to complete the noise level measurements. The meters were calibrated before use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

The results of the measurements are shown numerically and graphically in Appendices B and C, and are summarized below in Table 2. Photographs of the measurement sites are provided in Appendix D.

Table 2 Summary of Long-Term Ambient Noise Monitoring Results¹ The Plaza at Blue Oaks Commercial Development – Roseville, California February 14-15, 2018								
Site	Date	L _{dn} , dB	Average Measured Hourly Noise Levels (dB)					
			Daytime (7 a.m. to 10 p.m.)			Nighttime (10 p.m. to 7 a.m.)		
			L _{eq}	L ₅₀	L _{max}	L _{eq}	L ₅₀	L _{max}
1	2/15	56	50-55 (54)	49-55 (52)	61-73 (66)	42-53 (48)	38-50 (43)	56-71 (63)
2	2/14 – 2/15	57	50-57 (55)	47-56 (52)	64-77 (69)	45-56 (49)	39-54 (44)	59-72 (66)
Notes: ¹ Long-term ambient noise monitoring locations are shown on Figure 1, identified as Sites 1 and 2. Source: Bollard Acoustical Consultants, Inc. (2018)								

The Table 2 data indicate that measured average noise levels at the project site during daytime and nighttime hours were 54-55 dB L_{eq} and 48-49 dB L_{eq}, respectively. Maximum noise levels at the project site during daytime and nighttime hours were 66-69 dB L_{max} and 63-66 dB L_{max}, respectively.

Project Noise Generation

Noise generated by project-related activities were quantified through a combination of use of reference noise level measurements and application of accepted noise modeling techniques. Primary stationary noise sources associated with the proposed development include on-site truck circulation and loading dock activities from deliveries to businesses in buildings Major 1 and 2 at the northern end of the site, and car wash operations from the ARCO AM/PM facility located at the southeastern end of the site. Predicted noise levels resulting from each source are evaluated in the following sections. The predicted project noise levels take into account existing 6-foot tall noise barriers located adjacent to the residential developments to the northeast and south of the project site. Figure 2 shows the locations of the proposed noise sources, buildings, and existing noise barriers adjacent to the project site.

Evaluation of On-Site Truck Circulation Noise Levels

The project proposes a truck lane to be used for primary for deliveries to the businesses located in buildings Major 1 (grocery store) and Major 2. The locations of the proposed delivery truck lane and nearest residential uses are identified on Figure 2.

To quantify on-site truck circulation noise exposure at the nearest residential uses, BAC utilized file data for comparable commercial centers. For a conservative assessment of daily on-site truck circulation noise levels, it was assumed that 1-2 heavy trucks and 4 medium duty trucks/vans would deliver products to the stores at buildings Major 1 and 2 during a typical day. For the purposes of predicting hourly average noise levels for comparison against the city's hourly average (L_{eq}) noise standard, it was assumed that 1 heavy truck and 2 medium duty trucks could have store deliveries during the same hour.

BAC file data indicate that heavy truck passbys produce an average Sound Exposure Level (SEL) of approximately 90 dB at a distance of 50 feet, with medium duty trucks (including side step vans), producing a SEL of approximately 76 dB. In addition, the file data also indicate a single event maximum sound level for slow-moving heavy-duty trucks and medium-duty trucks of 75 dB and 70 dB L_{max} (respectively), at a reference distance of 50 feet. Based on these levels, assuming 1 semi-trailer delivery and 2 medium duty truck deliveries during any given hour, and assuming standard sound wave spreading loss (-4.5 dB per doubling of distance from a moving point source), on-site truck circulation noise exposure at the property lines of the nearest residential uses was calculated and the results of those calculations relative to the city's noise standards are presented in Tables 3 and 4.

The predicted on-site truck circulation noise levels at the nearest residential use to the northeast take into consideration the shielding provided by the existing 6-foot tall noise barrier along the development boundary, as indicated in Figure 2. To account for the screening provided by the existing barrier, an offset of -7 dB was conservatively applied to calculated noise levels at this land use.

Table 3 Predicted On-Site Truck Circulation Noise Levels vs. City Hourly L_{eq} Noise Standards The Plaza at Blue Oaks Commercial Development – Roseville, California				
Property Line	Distance from Passby Route (ft)	Predicted Combined Truck Passby Noise Level, L_{eq} (dB) ¹	Compliance with City Standard?	
			Daytime	Nighttime
North	100	50	Yes	No
East	350	42	Yes	Yes
Northeast	365	35	Yes	Yes
City of Roseville Noise Level Standards, Hourly L_{eq} (dB):			50	45
Notes: ¹ Predicted combined truck (heavy and medium) circulation noise levels at the residential use to the northeast take into consideration the shielding provided by the existing 6-foot tall noise barrier along the development boundary, and have been conservatively adjusted by -7 dB to account for this screening. Source: Bollard Acoustical Consultants, Inc. (2018)				

Table 4 Predicted On-Site Truck Circulation Noise Levels vs. City Maximum L_{max} Noise Standards The Plaza at Blue Oaks Commercial Development – Roseville, California					
Property Line	Distance from Passby Route, (ft)	Predicted Truck Passby Noise Level, L_{max} (dB) ¹		Compliance with City Standard?	
		Heavy-Truck (HT)	Medium Truck (MT)	Daytime (HT/MT)	Nighttime (HT/MT)
North	100	70	65	Yes/Yes	No/Yes
East	350	62	57	Yes/Yes	Yes/Yes
Northeast	365	55	50	Yes/Yes	Yes/Yes
City of Roseville Noise Level Standards, Maximum L_{max} (dB):				70	65
Notes: ¹ Predicted truck circulation noise levels at the residential use to the northeast take into consideration the shielding provided by the existing 6-foot tall noise barrier along the development boundary, and have been conservatively adjusted by -7 dB to account for this screening. Source: Bollard Acoustical Consultants, Inc. (2018)					

As indicated in Table 3, predicted combined truck passby noise levels at the property lines of the nearest residential uses would satisfy the City of Roseville 50 dB L_{eq} daytime noise level standard. The Table 3 data also shows that predicted combined truck passby noise levels would satisfy the City of Roseville 45 dB L_{eq} nighttime noise level standard at the nearest residential uses to the east and northeast. However, the predicted combined truck passby noise level of 50 dB L_{eq} at the nearest proposed residential uses to the north would exceed the City of Roseville 45 dB L_{eq} nighttime noise level standard. As a result, additional consideration of on-site truck circulation noise mitigation measures would be necessary in order to satisfy the

City of Roseville 45 dB L_{eq} nighttime noise level standard at the nearest residential use to the north.

The Table 4 data indicate that predicted heavy and medium-truck passby noise levels at the property lines of the nearest residential uses would satisfy the City of Roseville 70 dB L_{max} daytime noise level standard. In addition, predicted medium-truck passby noise levels would also satisfy the city's nighttime noise level standard at the nearest residential uses. However, the Table 4 data indicates that heavy-truck passby noise levels are predicted to exceed the city's nighttime noise level standard by 5 dB at the property line of the nearest residential use to the north. As a result, additional consideration of heavy-truck passby noise mitigation measures would be necessary in order to satisfy the City of Roseville 65 dB L_{max} nighttime noise level standard at the nearest residential use to the north.

On-Site Truck Circulation Noise Mitigation Measures

Noise exposure from on-site truck circulation is expected to satisfy the applicable City of Roseville daytime noise level standards of 50 dB L_{eq} and 70 dB L_{max} at the nearest residential uses. However, should truck deliveries occur during nighttime hours (10 p.m. to 7 a.m.), truck passby noise levels are predicted to exceed the City of Roseville 45 dB L_{eq} and 65 dB L_{max} nighttime noise level standards at the nearest residential use to the north.

To mitigate on-site truck circulation noise exposure to a state of compliance with the City of Roseville nighttime noise level standards of 45 dB L_{eq} and 65 dB L_{max} at the nearest residential use to the north, the effectiveness of a solid noise barrier between the proposed truck lane and residential development to the north was evaluated. The results from the barrier analysis are provided in Appendices E-1 and E-2, and are summarized in Table 5 relative to the applicable City of Roseville noise standards.

Table 5 Predicted On-Site Truck Circulation Noise Barrier Effectiveness vs. City Standards The Plaza at Blue Oaks Commercial Development – Roseville, California			
Barrier Height (ft) ¹	Resulting Source Noise Level at Residential Use to North, dB ²		Compliance with Nighttime Standards? (Combined/HT)
	Combined Truck Passby, L_{eq}	HT Truck Passby, L_{max}	
6	46	66	No/No
7	45	65	Yes/Yes
City of Roseville Nighttime Noise Level Standards, L_{eq}/L_{max} (dB):			45 / 65
Notes: ¹ Figure 2 shows the location of the recommended noise barrier. ² Complete results of the barrier analysis are provided in Appendices E-1 and E-2. Source: Bollard Acoustical Consultants, Inc. (2018)			

The Table 5 data show that the construction of a solid noise barrier measuring a minimum of 7-feet in height at the location shown on Figure 2 would be required to satisfy the applicable City of Roseville nighttime noise criteria at the adjacent residential use to the north. Figure 2 shows the location of the noise barrier. Alternatively, truck deliveries would need to be restricted to daytime hours (7 a.m. to 10 p.m.) if a noise barrier is not constructed as indicated above.

Evaluation of Loading Dock Noise Levels

The project proposes two commercial delivery loading docks on the northern end of the project site, identified as Docks 1 and 2 on Figure 2. To predict noise levels generated by loading dock activity at the project site, BAC once again utilized file data for comparable commercial centers. BAC file data indicate a commercial loading dock noise level of 55 dB L_{eq} and 70 dB L_{max} at a distance of 100 feet for typical operations. Assuming standard sound wave spreading loss (-6 dB per doubling of distance from a stationary source), loading dock noise exposure at the nearest residential property lines was calculated and the results of those calculations relative to the city's noise standards are presented in Tables 6 and 7.

Table 6 Predicted Loading Dock Noise Levels vs. City Hourly L_{eq} Noise Standards The Plaza at Blue Oaks Commercial Development – Roseville, California						
Property Line	Distance from Loading Docks (ft)		Predicted Hourly Noise Level, L_{eq} (dB) ¹		Compliance with City Standard?	
	Dock 1	Dock 2	Dock 1	Dock 2	Daytime (Dock 1/Dock2)	Nighttime (Dock 1/Dock 2)
North	125	120	53	53	No/No	No/No
East	560	400	40	43	Yes/Yes	Yes/Yes
Northeast	590	430	33	35	Yes/Yes	Yes/Yes
City of Roseville Noise Level Standard, Hourly L_{eq} (dB):					50	45
Notes: ¹ Predicted loading dock noise levels at the residential use to the northeast take into consideration the shielding provided by the existing 6-foot tall noise barrier along the development boundary, and have been conservatively adjusted by -7 dB to account for this screening. Source: Bollard Acoustical Consultants, Inc. (2018)						

Table 7 Predicted Loading Dock Noise Levels vs. City Maximum L_{max} Noise Standards The Plaza at Blue Oaks Commercial Development – Roseville, California						
Property Line	Distance from Loading Docks (ft)		Predicted Maximum Noise Level, L_{max} (dB) ¹		Compliance with City Standard?	
	Dock 1	Dock 2	Dock 1	Dock 2	Daytime (Dock 1/Dock2)	Nighttime (Dock 1/Dock 2)
North	125	120	68	68	Yes/Yes	No/No
East	560	400	55	58	Yes/Yes	Yes/Yes
Northeast	590	430	48	50	Yes/Yes	Yes/Yes
City of Roseville Noise Level Standard, Maximum L_{max} (dB):					70	65
Notes: ¹ Predicted loading dock noise levels at the residential use to the northeast take into consideration the shielding provided by the existing 6-foot tall noise barrier along the development boundary, and have been conservatively adjusted by -7 dB to account for this screening. Source: Bollard Acoustical Consultants, Inc. (2018)						

As indicated in Table 6, predicted loading dock noise levels at the property lines of the nearest residential uses to the east and southeast would satisfy the City of Roseville 50 and 45 dB L_{eq} daytime and nighttime noise level standards (respectively). However, at the adjacent residential use to the north, loading dock noise levels are expected to exceed the applicable City of Roseville daytime and nighttime noise level criteria. As a result, additional consideration of loading dock noise mitigation measures would be necessary in order to satisfy the City of Roseville 50 and 45 dB L_{eq} daytime and nighttime noise level standards at the nearest residential use to the north.

The Table 7 data indicate that predicted loading dock noise levels at the property lines of the nearest residential uses would satisfy the City of Roseville 70 dB L_{max} daytime noise level standard. In addition, predicted loading dock noise exposure is also expected to satisfy the city's nighttime maximum noise level standard at the nearest residential uses to the east and northeast. However, the Table 7 data indicates that loading dock noise levels are predicted to exceed the city's 65 dB L_{max} nighttime noise level standard at the property line of the adjacent residential use to the north. As a result, additional consideration of loading dock noise mitigation measures would be necessary in order to satisfy the City of Roseville 65 dB L_{max} nighttime noise level standard at the nearest residential use to the north.

Loading Dock Noise Mitigation Measures

Noise exposure from loading dock activities is expected to satisfy the applicable City of Roseville daytime and nighttime hourly and maximum noise level standards at the nearest residential uses to the east and southeast. In addition, predicted loading dock noise exposure will also satisfy the city's daytime 70 dB L_{max} noise level standard at the nearest residential use to the north. However, noise levels from loading dock activities are predicted to exceed the City

of Roseville 50 and 45 dB L_{eq} daytime and nighttime noise standards (respectively), and 65 dB L_{max} nighttime noise level standard at the nearest proposed residential uses to the north.

To mitigate loading dock noise exposure to a state of compliance with the applicable City of Roseville noise level criteria at the adjacent residential use to the north, the effectiveness of a solid noise barrier at the location indicated on Figure 2 was evaluated. The results from the barrier analysis are provided in Appendices E-3 through E-6, and are summarized below in Table 8 relative to the applicable City of Roseville noise standards.

Table 8 Predicted Loading Dock Noise Barrier Effectiveness vs. City Standards The Plaza at Blue Oaks Commercial Development – Roseville, California				
Barrier Height (ft) ¹	Resulting Source Noise Level at Residential Use to North, dB ²		Compliance with City Standards?	
	Loading Docks 1 & 2		Daytime (L_{eq}/L_{max})	Nighttime (L_{eq}/L_{max})
	L_{eq}	L_{max}		
6	48	63	Yes/Yes	No/No
7	47	62	Yes/Yes	No/Yes
8	46	61	Yes/Yes	No/Yes
9	45	61	Yes/Yes	Yes/Yes
City of Roseville Noise Level Standards, L_{eq}/L_{max} (dB):			50 / 70	45 / 65
Notes: ¹ Figure 2 shows the location of the noise barrier. ² Complete results of the barrier analysis are provided in Appendices E-3 through E-6. Source: Bollard Acoustical Consultants, Inc. (2018)				

The Table 8 data shows varies noise barrier heights required to satisfy the City of Roseville noise criteria at the adjacent residential use to the north. As shown in Table 8, loading dock activities would need to be restricted to daytime hours (7 a.m. to 10 p.m.) if a noise barrier less than 9-feet in height is constructed at the location shown on Figure 2.

Based on the proposed location of Loading Dock 2, it is expected that the residential use to the north will receive partial shielding from the recommended noise barrier. Due to the reduced level of shielding from the noise barrier, it is recommended that delivery activities at Loading Dock 2 be limited to daytime hours (7 a.m. to 10 p.m.). The restriction of activities at Loading Dock 2 during nighttime hours (10 p.m. to 7 a.m.) will minimize the potential for an exceedance of the City of Roseville nighttime noise level standards at the adjacent residential use to the north.

Evaluation of Car Wash Dryer Noise Levels

The project proposes an ARCO AM/PM facility with a car wash located at the southeastern end of the commercial development. The location of the car wash and nearest residential uses are shown on Figure 3.

Based on the experience of Bollard Acoustical Consultants, noise levels generated by car wash facilities are primarily due to the drying portion of the operation. According to information obtained from the equipment supplier, the proposed car wash will utilize a Ryko 3-Fan Slimline Dryer Model #6050-D. The manufacturer's specifications, provided as Appendix F, indicate that the reference sound level varies relative to the tunnel entrance, exit, and off-axis positions. Figure 3 illustrates the location of the proposed car wash tunnel, and the direction vehicles will move through the tunnel (north to south). Based on the manufacturer reference noise data sheet (Appendix F), and the proposed orientation of the car wash, the worst-case dryer noise exposure at the future high-density residential development to the east will occur at a position 90 degrees off-axis from the car wash tunnel entrance, and 45 degrees off-axis from the tunnel exit. Because the car wash tunnel exit is proposed to be south-facing, the existing residential development to the south will receive direct (0 degrees off-axis) dryer noise exposure.

When the car wash is at its worst-case maximum capacity, the dryers are anticipated to operate for no more than 15 minutes during that hour. The reference noise levels provided in Appendix F represent maximum (L_{max}) dryer noise levels. Because the dryers would be in operation for no more than 15 minutes during any hour, average (L_{eq}) noise levels would be approximately 6 dB less than maximum noise levels. Assuming standard spherical spreading loss (-6 dB per doubling of distance), and 15 minutes of operation during worst-case hour, car wash dryer noise exposure at the nearest residential uses was calculated and the results of those calculations relative to the city's noise standards are presented in Tables 9 and 10.

The predicted car wash dryer noise levels at the existing residential development to the south take into consideration the shielding provided by the existing 6-foot tall noise barrier along the development boundary, as indicated in Figures 2 and 3. To account for the screening provided by the existing barrier, an offset of -7 dB was conservatively applied to calculated noise levels at this land use.

Table 9
Predicted Car Wash Dyer Noise Levels vs. City Hourly L_{eq} Noise Standards
The Plaza at Blue Oaks Commercial Development – Roseville, California

Property Line	Reference Noise Level	Distance to Property Line (ft) ¹	Predicted Noise Level, L_{eq} (dB) ^{2,3}	Compliance with City Standard?	
				Daytime	Nighttime
East	65 dB at 30 feet (entrance, 90° off-axis)	65	52	No	No
East	76 dB at 40 feet (exit, 45° off-axis)	100	62	No	No
South	74 dB at 70 feet (exit, in line)	320	48	Yes	No
City of Roseville Noise Level Standards, Hourly L_{eq} (dB):				50	45

Notes:

- ¹ Distances from car wash dryer equipment to nearest property lines were scaled using the provided site plans.
² The predicted equipment noise levels at the residential use to the south take into consideration the shielding provided by an existing 6-foot tall solid noise barrier along the development boundary, and have been conservatively adjusted by -7 dB to account for this shielding.
³ Hourly average L_{eq} based on 15 minutes of dryer operation during a worst-case hour.

Source: Bollard Acoustical Consultants, Inc. (2018)

Table 10
Predicted Car Wash Dryer Noise Levels vs. City Maximum L_{max} Noise Standards
The Plaza at Blue Oaks Commercial Development – Roseville, California

Property Line	Reference Noise Level	Distance to Property Line (ft) ¹	Predicted Noise Level, L_{max} (dB) ^{2,3}	Compliance with City Standard?	
				Daytime	Nighttime
East	65 dB at 30 feet (entrance, 90° off-axis)	65	58	Yes	Yes
East	76 dB at 40 feet (exit, 45° off-axis)	100	68	Yes	No
South	74 dB at 70 feet (exit, in line)	320	54	Yes	Yes
City of Roseville Noise Level Standards, Maximum L_{max} (dB):				70	65

Notes:

- ¹ Distances from car wash dryer equipment to nearest property lines were scaled using the provided site plans.
² The predicted equipment noise levels at the residential use to the south take into consideration the shielding provided by an existing 6-foot tall solid noise barrier along the development boundary, and have been conservatively adjusted by -7 dB to account for this shielding.

Source: Bollard Acoustical Consultants, Inc. (2018)

The Table 9 data indicate that predicted car wash dryer hourly average noise levels at the nearest residential property line to the south would satisfy the City of Roseville 50 dB L_{eq} daytime noise level standard, but exceed the city's 45 dB L_{eq} nighttime criteria. Further, predicted car wash dryer (entrance and exit) noise levels would also exceed the City of Roseville daytime and nighttime noise level criteria at the adjacent residential property line to the east.

As indicated in Table 10, predicted car wash dryer noise levels at the property lines of the nearest residential uses to the east and south would satisfy the City of Roseville 70 dB L_{max} daytime noise level standard. In addition, predicted car wash dryer noise exposure is also expected to satisfy the city's 65 dB L_{max} nighttime noise level standard at the nearest residential use to the south. However, the Table 10 data indicates that car wash dryer (exit) noise levels are predicted to exceed the city's 65 dB L_{max} nighttime noise level standard at the property line of the adjacent residential use to the east.

Car Wash Dryer Noise Mitigation Measures

Car wash dryer noise exposure at the nearest residential property lines is predicted to exceed the City of Roseville daytime and nighttime noise criteria. To mitigate these identified exceedances, the effectiveness of installing car wash entrance and exit doors was considered. Specifically, equipment manufacturer BayWatch offers tunnel doors that provide approximately 14 dB of dryer noise reduction when doors are in the closed position (air tight seal) during wash cycles. The equipment manufacturer reference noise data sheet is provided in Appendix G. Assuming an offset of -14 dB from the reference noise levels shown in Tables 9 and 10 to account for the tunnel doors being in the closed position during the drying cycle of the car wash (air-tight seal), dryer noise levels were predicted at the property lines of the adjacent residential uses. The results of this analysis are summarized in Table 11.

Table 11 Predicted Car Wash Dryer Noise Levels – Mitigated The Plaza at Blue Oaks Commercial Development – Roseville, California					
Property Line	Reference Noise Level	Distance to Property Line (ft)	Offset, dB	Predicted Noise Levels (dB) ¹	
				L _{eq} ²	L _{max}
East	65 dB at 30 feet (entrance, 90° off-axis)	65	-14	38	44
East	76 dB at 40 feet (exit, 45° off-axis)	100	-14	48	54
South	74 dB at 70 feet (exit, in line)	320	-14	34	40
Notes: ¹ Predicted dryer noise levels take into consideration the noise reduction provided by closed entrance and exit doors during drying cycle (air-tight seal), and have been offset by -14 dB to account for this noise reduction. ² Hourly average L _{eq} based on 15 minutes of dryer operation during a worst-case hour. Source: Bollard Acoustical Consultants, Inc. (2018)					

Provided the project incorporates the recommended car wash entrance and exit doors, and that the doors are kept in the closed position with an air tight seal during wash cycles, car wash noise exposure at the adjacent residential property lines to the east and south would satisfy the City of Roseville daytime noise level standards. However, even after implementation of the recommended car wash doors, hourly average car wash noise levels could still exceed the city's 45 dB L_{eq} nighttime noise level standard by 3 dB at the residential property line to the east. Thus, if the recommended car wash entry and exit doors provide 14 dB of noise reduction, car wash operations should be limited to daytime hours (7 a.m. to 10 p.m.). However, should the applicant opt for nighttime car wash operations (10 p.m. to 7 a.m.), the recommended tunnel entrance and exit doors would need to provide a minimum noise level reduction of 17 dB.

Evaluation of Car Wash Vacuum Noise Levels

Based on the site plans, the project proposes two (2) vacuum units on the eastern side of the ARCO AM/PM facility building (see Figure 3). According to information obtained from the equipment distributor, the project proposes two JE Adams Super Vac (3-motor) Model #9200 series vacuum units. The manufacturer's specifications are provided as Appendix H. For the purposes of this analysis, it was assumed that the two vacuums would be in operation concurrently and continuously for the duration of an hour (worst-case hour). Because the vacuums were assumed to be in continuous operation for a full hour, hourly average (L_{eq}) and maximum (L_{max}) noise levels would be equivalent. Based upon the manufacturer's data, the proposed location of the vacuum units, and assuming the continuous use of the vacuums for a given hour, vacuum noise exposure at the nearest residential property lines was calculated and the results of those calculations are presented below in Table 12.

The predicted vacuum noise levels at the residential use to the south take into consideration the shielding provided by an existing 6-foot noise barrier along the development boundary, and have been conservatively adjusted by -7 dB to account for this shielding. In addition, because the proposed intervening ARCO AM/PM building would break line of sight of the vacuum units, predicted vacuum noise levels at the adjacent residential use the east were conservatively adjusted by -10 dB to account for this screening.

Table 12				
Predicted Vacuum Noise Levels ¹				
The Plaza at Blue Oaks Commercial Development – Roseville, California				
Property Line	Reference Noise Level ²	Distance to Property Line (feet)	Offset (dB) ³	Predicted Vacuum Noise Levels, L _{eq} / L _{max} (dB) ⁴
East	65 dBA at 40 feet	205	-10	41
South		330	-7	40
City of Roseville Daytime Noise Level Standards, L _{eq} /L _{max} (dB):				50 / 70
City of Roseville Nighttime Noise Level Standards, L _{eq} /L _{max} (dB):				45 / 65
Notes:				
1 The proposed vacuum system location is illustrated on Figure 3.				
2 The two proposed vacuums were assumed to be operating concurrently.				
3 Offsets of -10 and -7 dB were applied to account for the shielding provided by the proposed intervening ARCO AM/PM building (east) and existing 6-foot tall solid noise barrier (south), respectively.				
4 Because the vacuums were assumed to be in continuous operation for a full hour, hourly average (L _{eq}) and maximum (L _{max}) noise levels would be equivalent.				
Source: Bollard Acoustical Consultants, Inc. (2018)				

As shown in Table 12, predicted vacuum operation noise levels at the residential property lines to the south and west would satisfy the City of Roseville average and maximum daytime and nighttime noise level criteria. As a result, no further consideration of noise mitigation measures would be warranted for this aspect of the project.

Conclusions

This analysis concludes that noise generated by on-site truck circulation, loading docks, and car wash dryer operations at the proposed The Plaza at Blue Oaks Commercial Development project could potentially exceed the applicable City of Roseville noise level limits at the nearest residential uses. In order to comply with the applicable noise criteria, the following noise mitigation measures are recommended:

On-Site Truck Circulation Noise

Noise exposure from on-site truck circulation is expected to exceed the applicable City of Roseville nighttime noise criteria at the adjacent residential use to the north. In order to comply with the city's nighttime noise criteria at the nearest residential use to the north, a solid noise barrier measuring a minimum of 7-feet in height will be required at the location shown on Figure

2. Alternatively, commercial truck deliveries would need to be restricted to daytime hours (7 a.m. to 10 p.m.) if a noise barrier is not constructed as prescribed.

Loading Dock Noise

Noise exposure from loading dock activities is expected to exceed the City of Roseville daytime and nighttime noise criteria the adjacent residential use to the north. In order to comply with the city's noise criteria at the residential use to the north, a solid noise barrier will be required at the location shown on Figure 2. Specific barrier heights required to comply with the city's daytime and nighttime noise criteria are shown in Table 8. In addition, because it is expected that the residential use to the north will receive a reduced level of shielding from the required noise barrier, it is recommended that delivery activities at Loading Dock 2 be limited to daytime hours (7 a.m. to 10 p.m.). The restriction of delivery activities at Loading Dock 2 during nighttime hours (10 p.m. to 7 a.m.) will minimize the potential for an exceedance of the City of Roseville nighttime noise level standards at the residential land use to the north.

Car Wash Dryer Noise

Car wash dryer noise exposure at the residential uses to the east and south is predicted to exceed the City of Roseville daytime and nighttime noise level criteria. In order to comply with the City of Roseville daytime noise criteria, the installation of car wash entrance and exit doors would be required. As an example, car wash entrance and exit doors offered by BayWatch provide up to approximately 14 dB of dryer noise reduction (see Appendix G). In order to maximize the effectiveness of the equipment, the car wash entrance and exit doors must be kept in the closed position during wash cycles to create an air tight seal. Provided that the project implement car wash entrance and exit doors that provide a minimum of 14 dB of dryer noise level reduction, project car wash dryer noise exposure is expected to comply with the City of Roseville daytime noise criteria. However, in order to comply with the City of Roseville nighttime noise criteria, the recommended tunnel entrance and exit doors would need to provide a minimum noise level reduction of 17 dB.

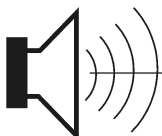
Following implementation of the measures recommended above, it is BAC's professional opinion that the project will be satisfactory relative to the applicable City of Roseville noise criteria and would not result in adverse noise impacts at the adjacent residential uses. Ultimately, each use operating within the Plaza at Blue Oaks Commercial Development will be responsible for operating in compliance with the noise standards of the City of Roseville.

This concludes BAC's noise assessment for the proposed Plaza at Blue Oaks Commercial Development in Roseville, California. Please contact BAC at (916) 663-0500 or paulb@bacnoise.com with any questions regarding this assessment.

Appendix A

Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.
RT₆₀	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.



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Appendix B-1
The Plaza at Blue Oaks Commercial Development
Ambient Noise Monitoring Results - Site 1
Thursday, February 15, 2018

Hour	Leq	Lmax	L50	L90
0:00	44	56	41	34
1:00	44	63	38	29
2:00	44	59	38	30
3:00	42	58	38	32
4:00	45	59	42	34
5:00	49	62	47	40
6:00	53	69	50	46
7:00	54	65	54	50
8:00	54	67	53	49
9:00	53	63	52	49
10:00	54	66	53	49
11:00	54	68	54	51
12:00	55	62	55	51
13:00	54	71	53	50
14:00	53	70	52	49
15:00	54	62	54	50
16:00	54	68	53	49
17:00	54	71	53	50
18:00	53	73	52	47
19:00	52	61	50	46
20:00	52	68	50	45
21:00	50	61	49	44
22:00	50	71	48	42
23:00	48	67	45	38

Statistical Summary						
Daytime (7 a.m. - 10 p.m.)				Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	55	50	54	53	42	48
Lmax (Maximum)	73	61	66	71	56	63
L50 (Median)	55	49	52	50	38	43
L90 (Background)	51	44	49	46	29	36

Computed Ldn, dB	56
% Daytime Energy	86%
% Nighttime Energy	14%

Appendix B-2
The Plaza at Blue Oaks Commercial Development
Ambient Noise Monitoring Results - Site 2
2/14/18 - 2/15/18

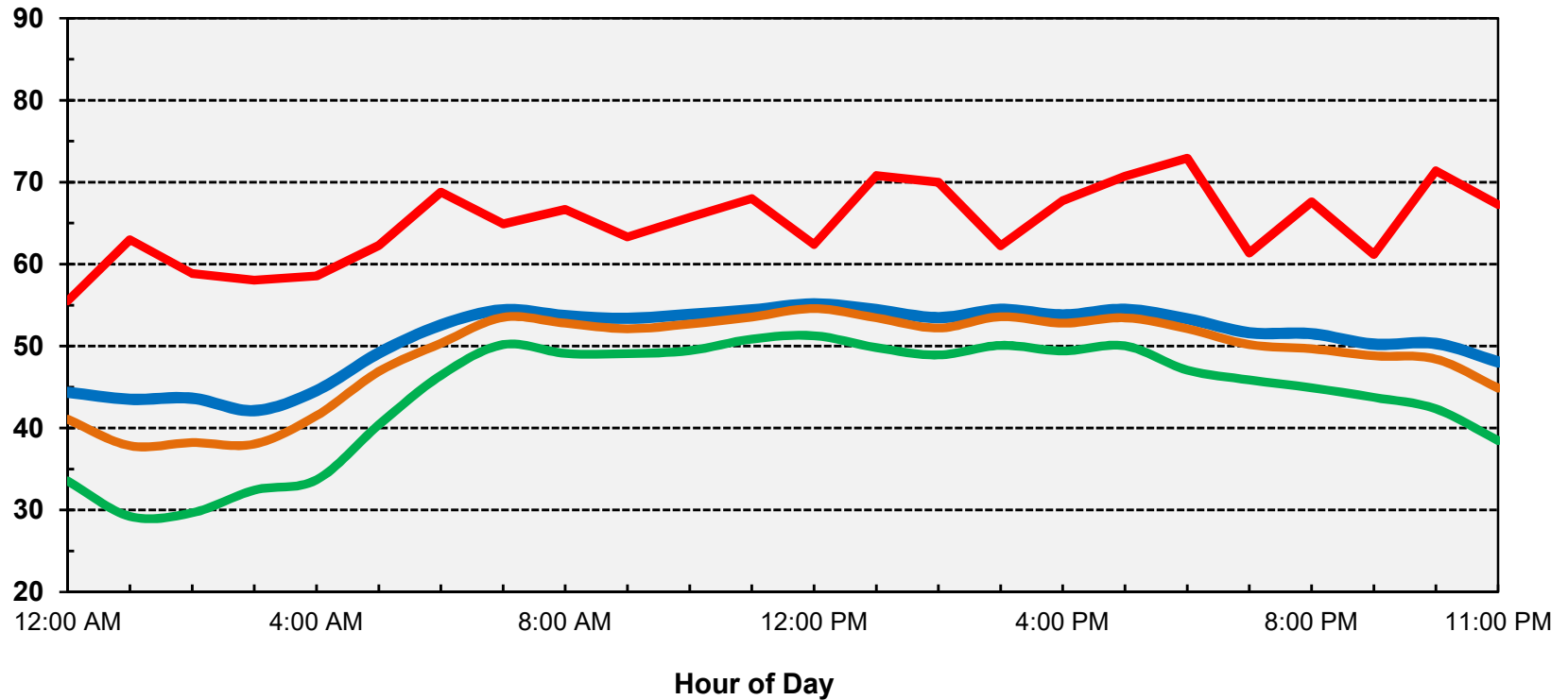
Hour	Leq	Lmax	L50	L90
12:00	53	68	50	45
13:00	51	64	49	46
14:00	52	69	50	47
15:00	54	70	53	49
16:00	54	66	52	49
17:00	54	67	53	49
18:00	53	64	52	48
19:00	51	66	49	46
20:00	50	65	49	45
21:00	50	66	49	45
22:00	50	75	47	42
23:00	48	70	45	36
0:00	46	60	43	34
1:00	47	64	40	28
2:00	46	67	39	29
3:00	45	59	39	32
4:00	47	63	43	34
5:00	52	68	49	41
6:00	56	72	54	49
7:00	57	66	56	53
8:00	57	77	56	52
9:00	56	68	55	51
10:00	56	74	55	51
11:00	56	74	55	52

Statistical Summary						
Daytime (7 a.m. - 10 p.m.)				Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	57	50	55	56	45	49
Lmax (Maximum)	77	64	69	72	59	66
L50 (Median)	56	47	52	54	39	44
L90 (Background)	53	42	48	49	28	35

Computed Ldn, dB	57
% Daytime Energy	84%
% Nighttime Energy	16%

Appendix C-1
The Plaza at Blue Oaks Commercial Development
Ambient Noise Monitoring Results - Site 1
Thursday, February 15, 2018

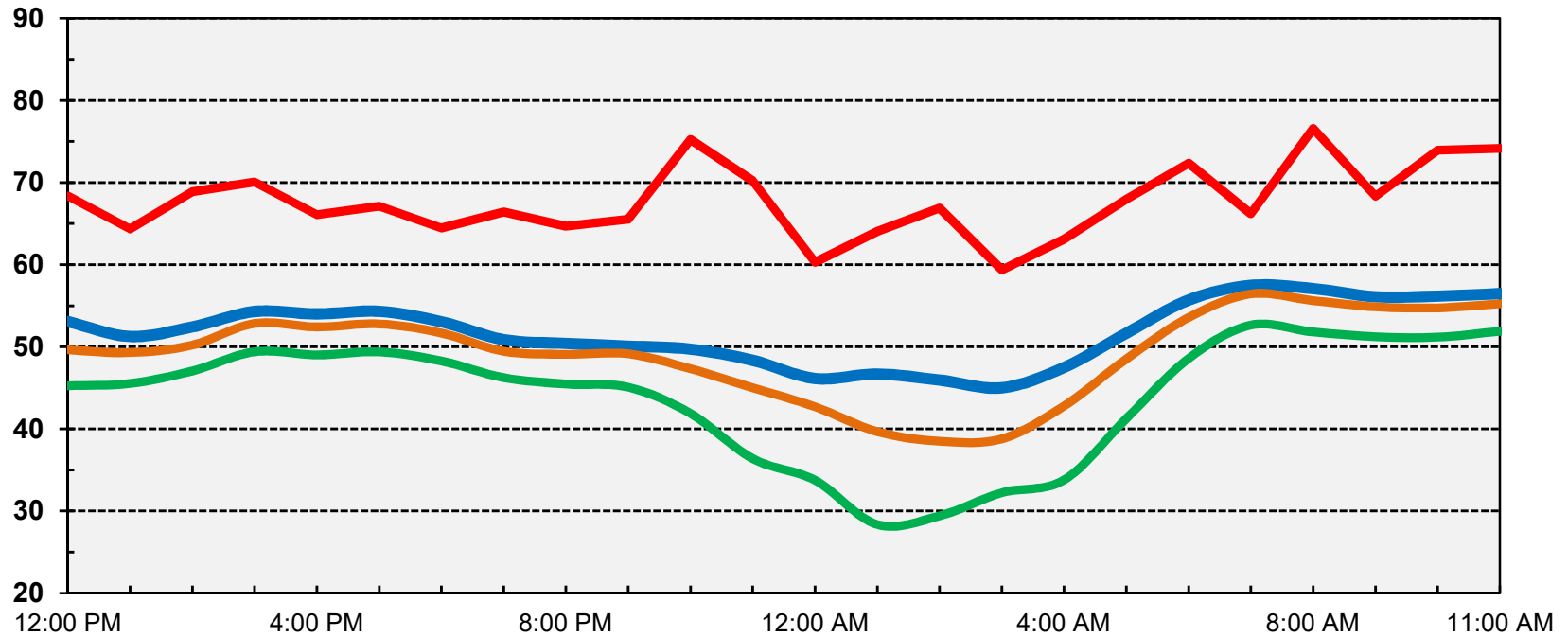
Sound Level, dBA



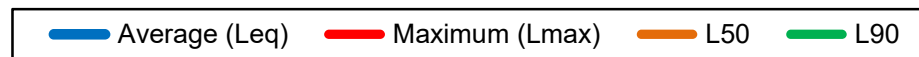
Ldn: 56 dB

Appendix C-2
The Plaza at Blue Oaks Commercial Development
Ambient Noise Monitoring Results - Site 2
2/14/18 - 2/15/18

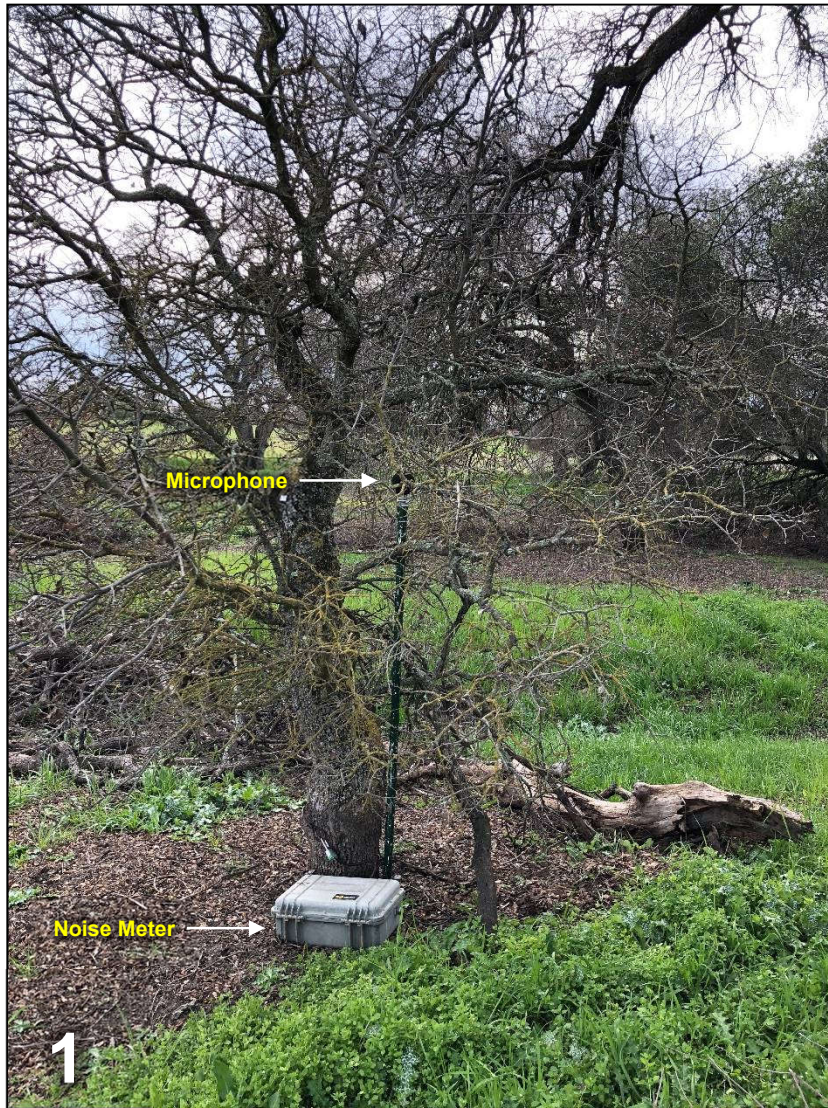
Sound Level, dBA



Hour of Day



Ldn: 57 dB



Notes:

1. Long-term noise measurement Site 1, facing southeast
2. Long-term noise measurement Site 2, facing north

The Plaza at Blue Oaks Development
Roseville, California

Noise Measurement Site Photos

Appendix D



Appendix E-1

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2018-026
 Project Name: The Plaza at Blue Oaks Commercial Development
 Location(s): Property Line

Noise Level Data:

Source Description: On-Site Truck Circulation - Combined Truck
 Source Noise Level, Leq (dBA): 50
 Source Frequency (Hz): 500
 Source Height (ft): 104

Site Geometry:

Receiver Description: Property Line - North
 Source to Barrier Distance (C_1): 20
 Barrier to Receiver Distance (C_2)¹: 80
 Pad/Ground Elevation at Receiver: 96
 Receiver Elevation: 101
 Base of Barrier Elevation: 96
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier

Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
102	6	-4.2	45.8	No
103	7	-4.9	45.1	No
104	8	-5.0	45.0	Yes
105	9	-5.7	44.3	Yes
106	10	-6.7	43.3	Yes
107	11	-7.7	42.3	Yes
108	12	-8.9	41.1	Yes
109	13	-9.8	40.2	Yes
110	14	-10.5	39.5	Yes
111	15	-11.3	38.7	Yes
112	16	-12.1	37.9	Yes

Notes: ¹ Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

Appendix E-2

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2018-026
 Project Name: The Plaza at Blue Oaks Commercial Development
 Location(s): Property Line

Noise Level Data:

Source Description: On-Site Truck Circulation - Heavy Truck
 Source Noise Level, L_{max} (dBA): 70
 Source Frequency (Hz): 500
 Source Height (ft): 104

Site Geometry:

Receiver Description: Property Line - North
 Source to Barrier Distance (C₁): 20
 Barrier to Receiver Distance (C₂)¹: 80
 Pad/Ground Elevation at Receiver: 96
 Receiver Elevation: 101
 Base of Barrier Elevation: 96
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier

Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
102	6	-4.2	65.8	No
103	7	-4.9	65.1	No
104	8	-5.0	65.0	Yes
105	9	-5.7	64.3	Yes
106	10	-6.7	63.3	Yes
107	11	-7.7	62.3	Yes
108	12	-8.9	61.1	Yes
109	13	-9.8	60.2	Yes
110	14	-10.5	59.5	Yes
111	15	-11.3	58.7	Yes
112	16	-12.1	57.9	Yes

Notes: ¹ Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

Appendix E-3

Barrier Insertion Loss Calculation

Project Information: Job Number: 2018-026
 Project Name: The Plaza at Blue Oaks Commercial Development
 Location(s): Property Line

Noise Level Data: Source Description: Loading Dock 1
 Source Noise Level, Leq (dBA): 53
 Source Frequency (Hz): 500
 Source Height (ft): 100

Site Geometry: Receiver Description: Property Line - North
 Source to Barrier Distance (C_1): 55
 Barrier to Receiver Distance (C_2)¹: 70
 Pad/Ground Elevation at Receiver: 96
 Receiver Elevation: 101
 Base of Barrier Elevation: 96
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
102	6	-5.3	47.7	Yes
103	7	-5.9	47.1	Yes
104	8	-6.7	46.3	Yes
105	9	-7.4	45.6	Yes
106	10	-8.2	44.8	Yes
107	11	-9.0	44.0	Yes
108	12	-9.7	43.3	Yes
109	13	-10.3	42.7	Yes
110	14	-10.9	42.1	Yes
111	15	-11.3	41.7	Yes
112	16	-12.1	40.9	Yes

Notes: ¹ Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

Appendix E-4

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2018-026
 Project Name: The Plaza at Blue Oaks Commercial Development
 Location(s): Property Line

Noise Level Data:

Source Description: Loading Dock 1
 Source Noise Level, L_{max} (dBA): 68
 Source Frequency (Hz): 500
 Source Height (ft): 100

Site Geometry:

Receiver Description: Property Line - North
 Source to Barrier Distance (C₁): 55
 Barrier to Receiver Distance (C₂)¹: 70

 Pad/Ground Elevation at Receiver: 96
 Receiver Elevation: 101
 Base of Barrier Elevation: 96
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier

Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
102	6	-5.3	62.7	Yes
103	7	-5.9	62.1	Yes
104	8	-6.7	61.3	Yes
105	9	-7.4	60.6	Yes
106	10	-8.2	59.8	Yes
107	11	-9.0	59.0	Yes
108	12	-9.7	58.3	Yes
109	13	-10.3	57.7	Yes
110	14	-10.9	57.1	Yes
111	15	-11.3	56.7	Yes
112	16	-12.1	55.9	Yes

Notes: ¹ Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

Appendix E-5

Barrier Insertion Loss Calculation

Project Information: Job Number: 2018-026
 Project Name: The Plaza at Blue Oaks Commercial Development
 Location(s): Property Line

Noise Level Data: Source Description: Loading Dock 2
 Source Noise Level, Leq (dBA): 53
 Source Frequency (Hz): 500
 Source Height (ft): 100

Site Geometry: Receiver Description: Property Line - North
 Source to Barrier Distance (C_1): 55
 Barrier to Receiver Distance (C_2)¹: 65
 Pad/Ground Elevation at Receiver: 96
 Receiver Elevation: 101
 Base of Barrier Elevation: 96
 Starting Barrier Height 6

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
102	6	-5.3	47.7	Yes
103	7	-5.9	47.1	Yes
104	8	-6.7	46.3	Yes
105	9	-7.5	45.5	Yes
106	10	-8.2	44.8	Yes
107	11	-9.1	43.9	Yes
108	12	-9.8	43.2	Yes
109	13	-10.3	42.7	Yes
110	14	-10.9	42.1	Yes
111	15	-11.5	41.5	Yes
112	16	-12.1	40.9	Yes

Notes: ¹ Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

Appendix E-6

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2018-026
 Project Name: The Plaza at Blue Oaks Commercial Development
 Location(s): Property Line

Noise Level Data:

Source Description: Loading Dock 2
 Source Noise Level, Lmax (dBA): 68
 Source Frequency (Hz): 500
 Source Height (ft): 100

Site Geometry:

Receiver Description: Property Line - North
 Source to Barrier Distance (C_1): 55
 Barrier to Receiver Distance (C_2)¹: 65
 Pad/Ground Elevation at Receiver: 96
 Receiver Elevation: 101
 Base of Barrier Elevation: 96
 Starting Barrier Height 6

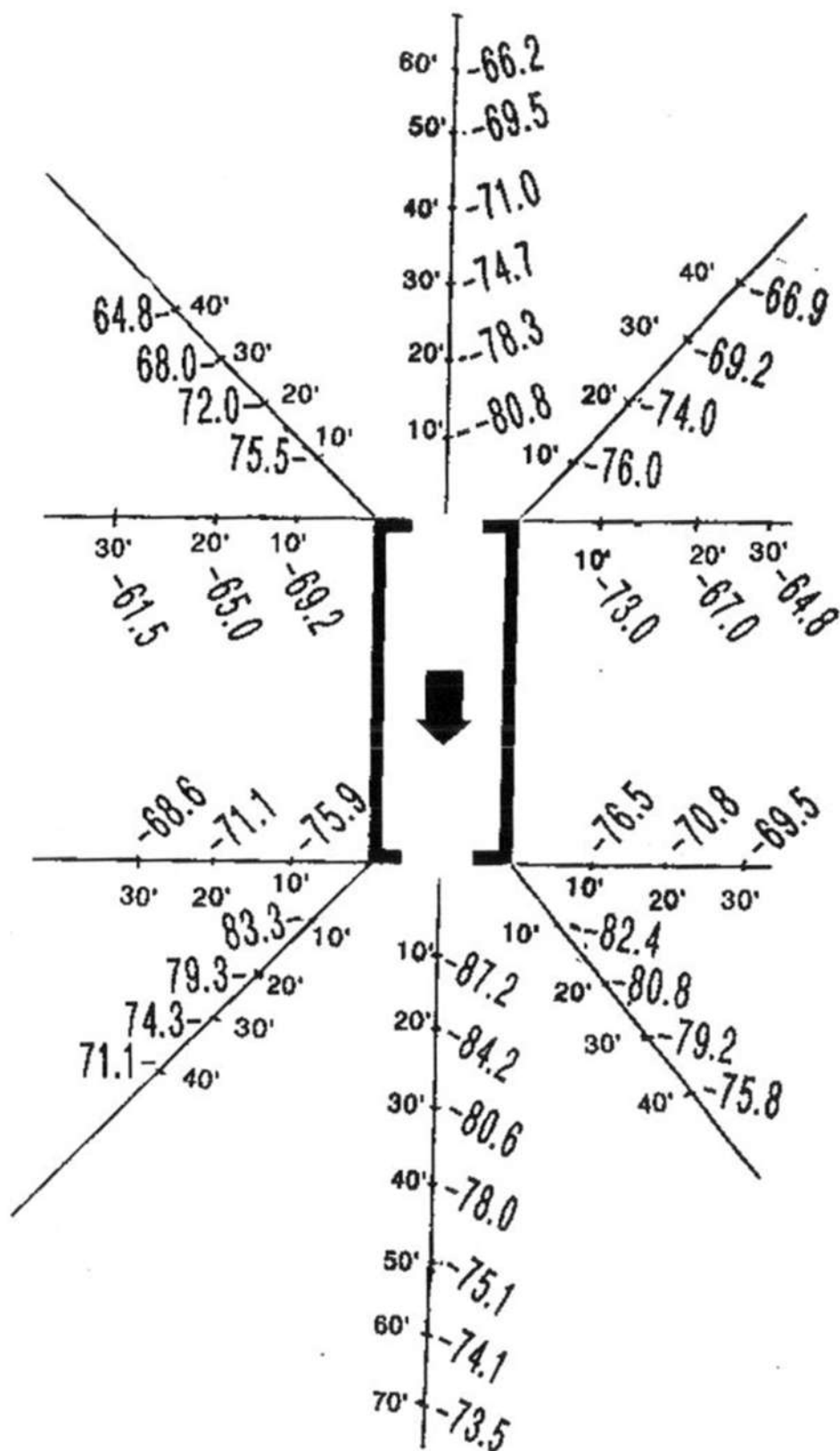
Barrier Effectiveness:

Top of Barrier

Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
102	6	-5.3	62.7	Yes
103	7	-5.9	62.1	Yes
104	8	-6.7	61.3	Yes
105	9	-7.5	60.5	Yes
106	10	-8.2	59.8	Yes
107	11	-9.1	58.9	Yes
108	12	-9.8	58.2	Yes
109	13	-10.3	57.7	Yes
110	14	-10.9	57.1	Yes
111	15	-11.5	56.5	Yes
112	16	-12.1	55.9	Yes

Notes: ¹ Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s).

Appendix F



RYKO Mfg. 3-Fan Slimline Dryer



Sound Level Measurements for BayWatch Polycarbonate

Doors With Mark VII AquaJet XT

Car Wash w/ On-Board Dryer (30hp)

Feet From Door	Entry Door Open	Entry Door Closed
10'	93 db	80 db
20'	90 db	76 db
25'	88 db	74 db
30'	85 db	71 db
50'	80 db	66 db

Appendix H-1

WE WORK HARDER TO PROVIDE YOU SOLUTIONS

SUPER VAC WITH BILL VALIDATOR & DIGITAL DISPLAY

MODEL #	VACUUM	MOTORS	VAULT READY	STAINLESS STEEL DOME	LIGHTED DOME	BILL ACCEPTOR	COIN ACCEPTOR	ETL APPROVED	OPTIONAL DECAL PKG.	WEIGHT	AMPS REQ.	VOLTAGE
9200-1	•	2	•	Small	•	•	•	•	•	139	20	120
9200-1VR	•	2	•	Small	•	•	•	•	•	139	20	120
9200-1LD	•	2	•	•	•	•	•	•	•	139	20	120
9200-1VRLD	•	2	•	•	•	•	•	•	•	139	20	120
9200-3	•	3	•	Large	•	•	•	•	•	155	30	120
9200-3VR	•	3	•	Large	•	•	•	•	•	155	30	120
9200-3LD	•	3	•	•	•	•	•	•	•	155	30	120
9200-3VRLD	•	3	•	•	•	•	•	•	•	155	30	120

FEATURES

- Double service doors offer easy access to clean out compartment and 4 filter bag system (Replacement Item #8076)
- Digital display timer with built-in coin counter, scrolls messages, prices for service and counts down remaining time (Replacement Item #8000-10)
- Visual and audible last coin alarm
- Coin box secured with pin lock (Replacement Item #8638)
- Faceplate secured with 2 Medeco cam locks (Replacement Item #8953)
- Hose: 2" x 15', swivel cuff and nozzle included (15', 25', and 50' available in 1 1/2" or 2")
- Coinco bill acceptor takes \$1.00 and \$5.00 bills (Replacement Item #8130-6)
- Imonex coin acceptor takes quarters (Replacement Item #8149)
- Lighted dome available in red, blue, yellow, dark green, light green, purple and white
- Optional coin mechs, motors, colored hoses, extra security, and clean-out containers are available

PROGRAMMER

- 8000-30 Remote control programmer for digital display, 8 oz.

DECALS

- 9200-11 Yellow decals
- 9200-12 Blue decals
- 9200-13 Violet decals
- 9200-14 Black decals (standard)

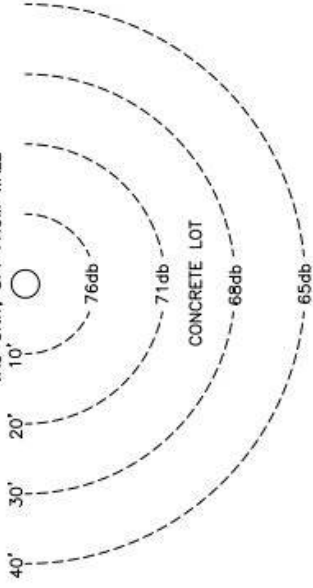


SUPER VAC 9200-1LD SHOWN WITH OPTIONAL BLUE DOME, BLUE HOSE, BLUE DECAL PACKAGE, SERVICE DOORS SECURITY COVER, AND COIN BOX SECURITY PACKAGE

Appendix H-2

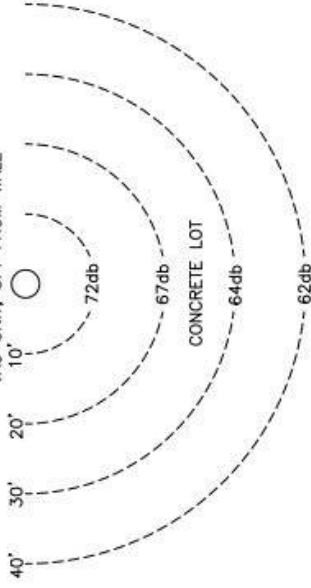
STEEL WALL, 18FT HIGH, 150FT LONG

VAC UNIT, 3FT FROM WALL



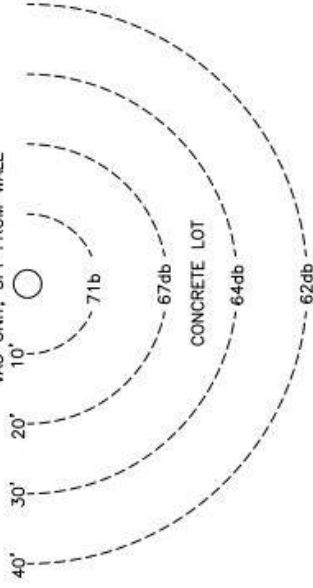
STEEL WALL, 18FT HIGH, 150FT LONG

VAC UNIT, 3FT FROM WALL



STEEL WALL, 18FT HIGH, 150FT LONG

VAC UNIT, 3FT FROM WALL



Memorandum

To: Matt Todd

From: Matt Weir, P.E., T.E., PTOE
Robert Paderna, P.E.

Re: *The Plaza at Blue Oaks*
Traffic Evaluation
Roseville, California

Date: April 6, 2018

Per your request and authorization, we have prepared this traffic evaluation for the above referenced project.

Project Understanding

Kimley-Horn understands that a 13.35-acre neighborhood shopping center is proposed for the vacant site located in the northeast corner of the Blue Oaks Boulevard intersection with Fiddymment Road in the Fiddymment Ranch Development of the City of Roseville. According to the project applicant, the project is proposed to be constructed in two phases, with Phase 2 excluded from the initial Design Review Permit application which is the trigger for this traffic analysis. The proposed project consists of a 35,000-square foot (sf) grocery anchor store, an approximately 20,000-sf major retail store, a gas station (approximately 3,050-sf convenience store with 12 fueling pumps), and seven additional buildings ranging in size from 3,250-sf to 6,045-sf. Access to the project is proposed to be from all four surrounding roadways; one right-in/right-out driveway along Blue Oaks Boulevard, one right-in/right-out driveway along Fiddymment Road, two full access driveways along Harvey Way, and two full access driveways along Oak Meadow Drive. The project site plan is provided in **Exhibit 1**.

The purpose of this analysis is to evaluate the proposed project's access points and localized circulation, including throat depths, tapers, storage, and driveway treatments that are necessary to ensure safe and efficient operations.

Study Facilities and Evaluation Parameters

The following ten intersections (see **Exhibit 2**) were identified in consultation with the City and are included in this access evaluation. **Exhibit 3** details the study intersections' geometries while **Exhibit 4** presents the Existing (2018) conditions AM and PM peak hour traffic volumes, collected on February 27 and March 6 to March 8, 2018. Raw traffic counts are provided in **Attachment A**. For each location, traffic/access control and the primary evaluation parameter(s) are described below:

1. Blue Oaks Boulevard @ Fiddymment Road
 - o Existing traffic signal
 - o Primary consideration is anticipated mix of volumes with project volumes, with a focus on the left- and u-turn movements, and vehicle delay and queuing
2. Blue Oaks Boulevard @ Site Access Driveway
 - o Proposed right-in/right-out driveway
 - o Primary considerations are the minimum required throat depth (MRTD) and the size of the right-turn deceleration lane

3. Blue Oaks Boulevard @ Oak Meadow Drive
 - o Existing side-street stop controlled (SSSC) intersection
 - o Primary consideration is anticipated mix of volumes with project volumes, with a focus on the southbound queue in relation to the South Project Access Driveway intersection
4. Blue Oaks Boulevard @ Orchard View Road
 - o Existing traffic signal
 - o Primary consideration is anticipated mix of volumes with project volumes, with a focus on the left- and u-turn movements
5. Fiddymment Road @ Project Access Driveway Intersection
 - o Proposed right-in/right-out driveway
 - o Primary considerations are the minimum required throat depth (MRTD) and the need for a right-turn deceleration lane
6. Harvey Way @ Fiddymment Road
 - o Existing SSSC intersection
 - o Primary consideration is the anticipated mix of volumes with project volumes, with a focus on the southbound left-turn movement onto Harvey Way
7. Harvey Way @ West Project Access Driveway
 - o Access initially assumed to be full access
 - o Primary considerations are the need for turn restrictions and the MRTD
8. Harvey Way @ Oak Meadow Drive
 - o Existing SSSC intersection
 - o Primary consideration is the anticipated mix of volumes with project volumes, with a focus on the need for all-way stop control (AWSC)
9. Harvey Way @ Orchard View Road
 - o Existing SSSC intersection
 - o Primary consideration is the anticipated mix of volumes with project volumes, with a focus on the need for AWSC
10. Oak Meadow Drive @ South Project Access Driveway
 - o Access initially assumed to be full access
 - o Primary considerations are the need for turn restrictions and the MRTD

This analysis did not include the eastern project driveway along Harvey Way and the northern project driveway along Oak Meadow Drive as these driveway intersections are not anticipated to affect the operations at the adjacent offsite city intersections.

The access evaluation was conducted for the weekday AM and PM peak hours under Existing (2018) plus Proposed Project conditions. Kimley-Horn applied methods defined in the *Highway Capacity Manual (HCM)*, using Synchro 9 traffic analysis software.

Assessment of Proposed Project

Trip Generation

The number of trips anticipated to be generated by the proposed project were approximated using *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE). **Table 1** presents the trip generation data for the proposed project.

Table 1 – Proposed Project Trip Generation

	Size (KSF/ Fueling Pumps)	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Supermarket (850)	35	3738	134	80	54	323	165	158
Shopping Center (820)	55.2	2082	52	32	20	210	101	109
Gas Station with Convenience Store (960)	12 (Fueling Pumps)	2766	337	169	168	276	138	138
Subtotal Trips		8,586	523	281	242	809	404	405
Supermarket Pass-by Trip Reduction : PM Peak-Hour (36%)		0	0	0	0	-116	-59	-57
Shopping Center Pass-by Trip Reduction: PM Peak-hour (34%)		0	0	0	0	-71	-34	-37
Gas Station with Convenience Store Passby Trip Reduction: AM Peak-Hour (62%), PM Peak- Hour (56%)		0	-208	-104	-104	-154	-77	-77
Net New Project Trips		8,586	315	177	138	468	234	234

Source: Trip Generation Manual, 10th Edition, ITE

As reflected in **Table 1**, the proposed project is anticipated to generate 315 new AM peak-hour and 468 new PM peak-hour trips. A pass by trip reduction of 208 and 341 trips was applied during the AM and PM peak-hours, respectively, in accordance with the procedures contained in the *Trip Generation Handbook, 3rd Edition*.

Trip Distribution

The distribution of new project trips was developed based on existing project area roadway volumes, general knowledge of project area traffic patterns, the proposed project layout, guidance from *Transportation and Land Development, 2nd Edition* published by ITE, and engineering judgment. Project trips were assigned to the study intersections and the surrounding roadway network according to these patterns. The assignment of project trips to the site driveways accounts for the turn restrictions at project driveways along Blue Oaks Boulevard and Fiddymment Road.

The trip distribution percentages are presented in **Exhibit 5**. Project only volumes are reflected in **Exhibit 6**. Existing (2018) plus Proposed Project volumes are reflected in **Exhibit 7**.

Traffic Assessment Methodology

As previously discussed, the focus of this traffic evaluation is on vehicle queuing entering the site and the Minimum Required Throat Depth (MRTD) at each project site driveway. For this evaluation, the City's guidelines¹ were referenced to determine the driveways' MRTD.

Synchro was used to evaluate the anticipated operations at the signalized study intersections at Blue Oaks Boulevard/Fiddymment Road (Intersection #1) and Blue Oaks Boulevard/Orchard View Road (Intersection #4) under Existing (2018) plus Proposed Project conditions.

¹ Section 4 Traffic Impact Studies, City of Roseville Design Standards, January 2016.

Additionally, an evaluation of the warrants for All-Way Stop Control (AWSC) was evaluated at the side-street stop controlled study intersections at Harvey Way/Oak Meadow Drive (Intersection #8) and Harvey Way/Orchard View Road (Intersection #9). This AWSC warrant evaluation was performed in accordance with the guidance contained in Section 2B.07 of the *California Manual on Uniform Traffic Control Devices (CMUTCD), 2014 Edition, Revision 3 (March 9, 2017)*.

Signalized Intersection Operations and Queuing

In an effort to confirm the adequacy of the existing configuration at the intersections of Blue Oaks Boulevard/Fiddymont Road (Intersection #1) and Blue Oaks Boulevard/Orchard View Road (Intersection #4), Synchro was used to determine the anticipated 95th percentile vehicle queues, delay, and Level of Service (LOS) under Existing (2018) plus Proposed Project conditions. **Table 2** summarizes the delay and LOS at the two signalized study intersections. Analysis worksheets are provided in **Attachment B**.

Table 2 – Intersection Level of Service for Existing (2018) plus Proposed Project Conditions

Intersection	Control	Peak Hour	Existing (2018)		Existing (2018) plus Proposed Project	
			Delay (sec)	LOS	Delay (sec)	LOS
#1 Blue Oaks Boulevard @ Fiddymont Road	Signal	AM	27.2	C	29.3	C
		PM	29.5	C	33.2	C
#4 Blue Oaks Boulevard @ Orchard View Road	Signal	AM	3.8	A	4.2	A
		PM	3.2	A	4.1	A

As shown in **Table 2**, the project intersections are shown to operate at or above acceptable LOS C during both peak-hours.

As congestion increases it is common for traffic at signals and stop signs to form lines of stopped (or queued) vehicles. Queue lengths were determined for each lane and measure the distance that vehicles will back up in each direction approaching an intersection. The 95th percentile queues were calculated for the two signalized study intersections by using 95th percentile traffic to account for fluctuations in traffic and represents a condition where 95 percent of the time during the peak period, traffic volumes and related queuing will be at, or less, than determined by the analysis. **Table 3** presents a summary of the queuing results. Analysis worksheets are provided in **Attachment B**.

Table 3 – Intersection Queuing for Existing (2018) plus Proposed Project Conditions

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95 th % Queue (ft)	Available Storage (ft)	95 th % Queue (ft)
#1 Blue Oaks Boulevard @ Fiddymment Road	NBR				
Existing (2018)	245	245	69	245	61
Existing (2018) plus Project			74		64
	SBL				
Existing (2018)	245	245	78	245	70
Existing (2018) plus Project			93		87
	EBL				
Existing (2018)	235	235	24	235	12
Existing (2018) plus Project			29		20
	WBL				
Existing (2018)	235	235	142	235	226
Existing (2018) plus Project			182		300
#2 Blue Oaks Boulevard @ Site Access Driveway	SBR				
Existing (2018)	N/A		N/A		
Existing (2018) plus Project	140	18	140	45	
	WBR				
Existing (2018)	N/A		N/A		
Existing (2018) plus Project	360	0	360	0	
#3 Blue Oaks Boulevard @ Oak Meadow Drive	SBR				
Existing (2018)	120	120	0	120	3
Existing (2018) plus Project			8		23
	EBL				
Existing (2018)	265	265	0	265	0
Existing (2018) plus Project			5		8
	WBR				
Existing (2018)	240	240	0	240	0
Existing (2018) plus Project			0		0
#4 Blue Oaks Boulevard @ Orchard View Road	SBL				
Existing (2018)	240	240	33	240	29
Existing (2018) plus Project			43		49
#5 Fiddymment Road @ Project Access Driveway	WBR				
Existing (2018)	N/A		N/A		
Existing (2018) plus Project	130	18	130	38	

Note: Shaded results reflect locations where 95th percentile queues exceed available storage capacity

Table 3 – Intersection Queuing for Existing (2018) plus Proposed Project Conditions (Continued)

Intersection / Analysis Scenario	Movement	AM Peak-Hour		PM Peak-Hour	
		Available Storage (ft)	95 th % Queue (ft)	Available Storage (ft)	95 th % Queue (ft)
#6 Harvey Way @ Fiddymment Road	NBR				
Existing (2018)	220	220	0	220	0
Existing (2018) plus Project			0		0
	SBL				
Existing (2018)	250	250	3	250	0
Existing (2018) plus Project			13		15
	WBR				
Existing (2018)	235	235	3	235	3
Existing (2018) plus Project			3		3
	WBLT				
Existing (2018)	180	180	5	180	3
Existing (2018) plus Project			128		275
#7 Harvey Way @ West Project Access Driveway	NBLR				
Existing (2018)	N/A		N/A		
Existing (2018) plus Project	40	5	40	10	
#8 Harvey Way @ Oak Meadow Drive	NBR				
Existing (2018)	220	220	0	220	0
Existing (2018) plus Project			3		5
#9 Harvey Way @ Orchard View Road	EBR				
Existing (2018)	370	370	3	370	3
Existing (2018) plus Project			5		5
#10 Oak Meadow Drive @ South Project Access Driveway	EBR				
Existing (2018)	N/A		N/A		
Existing (2018) plus Project	25	5	25	8	
#10 Oak Meadow Drive @ South Project Access Driveway	NBL				
Existing (2018)	N/A		N/A		
Existing (2018) plus Project	120	3	120	5	
#10 Oak Meadow Drive @ South Project Access Driveway	SBR				
Existing (2018)	N/A		N/A		
Existing (2018) plus Project	200	0	200	0	

Note: Shaded results reflect locations where 95th percentile queues exceed available storage capacity

As shown in **Table 3**, two project intersections are anticipated to experience 95th percentile queues that exceed available storage at the following locations:

- Blue Oaks Boulevard and Fiddymment Road (Intersection #1)
 - o WBL movement during the PM peak-hour
- Harvey Way and Fiddymment Road (Intersection #6)
 - o WBLT movement during the PM peak-hour

Minimum Required Throat Depth (MRTD)

MRTDs were calculated for four site driveways (Intersections #2, #5, #7, and #10) under Existing (2018) plus Proposed Project conditions. **Table 4** and **Table 5** summarize the findings of the MRTD evaluation based on the City's guidelines for the AM and PM peaks, respectively. Analysis worksheets are provided in **Attachment C**.

Table 4 – MRTD at site driveways (AM Peak-Hour)

INT	TS	Approach Volume	ConflVol (Left)	ConflVol (Right)	LT Out	RT Out	RT%	Minimum Required Throat Depth (MRTD)
2	1	105		159				100
5	1	118		219				100
7	0	62	51	20	62	0	0%	25
10	0	46	77	8	10	36	78%	25

Table 5 – MRTD at site driveways (PM Peak-Hour)

INT	TS	Approach Volume	ConflVol (Left)	ConflVol (Right)	LT Out	RT Out	RT%	Minimum Required Throat Depth (MRTD)
2	1	175		266				125
5	1	195		222				150
7	0	102	38	23	102	0	0%	75
10	0	77	108	16	18	59	77%	25

The following is a summary of this evaluation:

- Intersection #2 (right-in/right-out), as currently proposed per **Exhibit 1**, has a throat depth of 140-feet, which is greater than the minimum required distance of 125-feet (PM peak-hour) that was calculated for the outbound right-turn. Based on the calculations the existing throat depth is sufficient under these conditions.
- Intersection #5 (right-in/right-out), as currently proposed per **Exhibit 1**, has a throat depth of 130-feet, which is less than the minimum required distance of 150 feet (PM peak-hour) that was calculated for the outbound right-turn. Based on the calculations the existing throat depth is insufficient under these conditions.
- Intersection #7 (full access), as currently proposed per **Exhibit 1**, has a throat depth of 35-feet, which is less than the minimum distance of 75 feet (PM peak-hour) that was calculated for the outbound right- and left-turns. Based on the calculations the existing throat depth is insufficient under these conditions.
- Intersection #10 (full access), as currently proposed per **Exhibit 1**, has a throat depth of 25-feet, which is equal to the minimum distance of 25-feet (PM peak-hour) that was calculated for the outbound right- and left-turns. Based on the calculations the existing throat depth is sufficient under these conditions.

All Way Stop Control (AWSC) Warrant Evaluation

According to Section 2B.07 of the *California Manual on Uniform Traffic Control Devices (CMUTCD)*, the total vehicle volumes entering the intersection along the main street approaches must average at least 300 vehicles over an eight-hour period to satisfy AWSC warrants. The volumes for Harvey Way at Oak Meadow Drive (Intersection # 8) and Harvey Way at Orchard View Drive (Intersection #9) are below this threshold for both the AM and PM peak-hours. Therefore, an AWSC warrant would not be satisfied at Intersections #8 and #9 under the Existing (2018) plus Proposed Project conditions.

Right- Turn Deceleration Lane

According to the City's guidelines², a right-turn deceleration lane is required when all four of the following conditions are satisfied:

- A. The driveway is located on an arterial or expressway.
- B. Right turn ingress volume is expected to exceed fifty (50) during peak hour flows on the roadway. For right turn ingress volumes between ten (10) and fifty (50) a right turn curb taper shall be constructed in conformance with the Standard Drawings.
- C. There is ample room and frontage to fit a deceleration lane as determined by the City Engineer.
- D. The travel speed of the roadway, as determined by the City Engineer, equals or exceeds 45 mph.

The requirements and conditions at the project driveways along Blue Oaks Boulevard (Intersection #2) and Fiddymment Road (Intersection #5) are summarized in **Table 6**.

Table 6 – Right Turn Deceleration Lanes

Project Driveway	Time Period	Located on Arterial or Expressway?	Right Turn Volume	Right Turn Volume over 50?	Ample Room and Frontage?	85th Percentile Travel Speed	Travel Speed ≥ 45 mph?	Deceleration Lane Appropriate?
Project Driveway #2	AM	Yes	156	Yes	Yes	51.9	Yes	Yes
	PM	Yes	233	Yes	Yes	51.9	Yes	Yes
Project Driveway #5	AM	Yes	81	Yes	Yes	52.3	Yes	Yes
	PM	Yes	121	Yes	Yes	52.3	Yes	Yes

Based on these guidelines, both driveways satisfy the need for a right turn deceleration lane. According to the Section 201 of the Highway Design Manual³ and the posted speed limit of 45 mph, the required stopping sight distance is 360 feet. Therefore, a 360-foot right-turn deceleration lane would be appropriate for both Intersection #2 (westbound) and Intersection #5 (northbound). The distance between the project driveway along Blue Oaks Boulevard (Intersection #2) and the intersection of Blue Oaks Boulevard and Oak Meadow Drive (Intersection #3) is approximately 360 feet. The right-turn deceleration lane featured in the proposed project site plan should be lengthened to accommodate this stopping sight distance. There is approximately 320 feet available between project driveway along Fiddymment Road (Intersection #5) and the intersection of Blue Oaks Boulevard and Fiddymment (Intersection #1) to the south. Given the existing bus-only striping and the site frontage design as illustrated on the project site plan, there is adequate lateral space to include a right-turn deceleration lane before the driveway. However, there is not adequate space for the entire 360 feet in length to achieve a deceleration lane that meets calculated stopping sight distance.

Conclusions

The following are the primary conclusions based on the analyses discussed herein:

- The signalized intersections at Blue Oaks Boulevard at Fiddymment Road (Intersection #1) and Blue Oak Boulevard at Orchard View (Intersection #4) both operate at LOS C or better during the Existing (2018) plus Project conditions.
- The available storage capacity at the study intersections is sufficient to accommodate the 95-percentile queue lengths under Existing (2018) plus Project conditions, with the exception of the westbound left-turn movement at Blue Oaks Boulevard and Fiddymment Road (Intersection #1) and the westbound left-thru movement at Harvey Way and Fiddymment Road (Intersection #6) during the PM peak hour.

² Section 5 Traffic Impact Studies, City of Roseville Design Standards, January 2016.

³ Section 201, Highway Design Manual, Caltrans, December 2015.

- o The 95th percentile queue for the westbound left-turn at Blue Oaks Boulevard and Fiddymment Road (Intersection #1) is anticipated to exceed the available storage by approximately 3 vehicles. These vehicles are expected to be accommodated within the existing taper and not extend into the adjacent through lane. Additionally, this calculated queue length is conservative as it represents a condition where 95 percent of the time during the peak period, queues will be at or less than the value reported in Synchro. It is recommended that the City monitor queuing at this intersection approach during the peak hours and perform signal timing adjustments as needed.
- o The 95th percentile queue for the westbound left-turn at Harvey Way and Fiddymment Road (Intersection #6) is anticipated to exceed the available storage by approximately 4 vehicles. This condition may restrict access for vehicles making a northbound left-turn out from the project driveway along Harvey Drive (Intersection #7) and potentially result in on-site queues at the project driveway which would block inbound vehicles from Harvey Drive. It is recommended that the western project driveway along Harvey Way (Intersection #7) be restricted to right-turn in/out movements with installation of a narrow-raised median along Harvey Way and the addition of appropriate signing and striping at the driveway approach. This driveway access restriction will extend the storage capacity of the westbound approach back to the easterly driveway along Harvey Way, resulting in sufficient storage capacity. Vehicles assumed to make a left-turn out of the western project driveway would be rerouted to the site driveways along Fiddymment Road (Intersection #5) and eastern project driveway along Harvey Road. The rerouted vehicles are anticipated to be adequately accommodated at these project driveways.
- The volumes at the intersections of Harvey Way at Oak Meadow Drive (Intersection # 8) and Harvey Way at Orchard View Drive (Intersection #9) do not satisfy AWSC warrants. The existing SSSC control at both intersections are appropriate under the Existing (2018) plus Project conditions.
- The site driveway along Fiddymment Road (Intersection #5) and western site driveway along Harvey Way (Intersection #7) have deficient Minimum Required Throat Depth (MRTD). At Intersection #5, the MRTD exceeds the available throat depth by one vehicle length. The MRTD should be provided by installing “KEEP CLEAR” signing and pavement marking within the driveway intersection with the upstream drive aisle to minimize the potential for driveway blockage. There is also a MRTD deficiency at the western project driveway along Harvey Way (Intersection #7). However, this deficiency will also be resolved by restricting driveway access to right-turn in/out movements. The outbound vehicles will be rerouted to the site driveways along Fiddymment Road (Intersection #5) and eastern project driveway along Harvey Road, as described above.
- Right-turn deceleration lanes are appropriate for the project driveways along Blue Oaks Boulevard (Intersection #2) and Fiddymment Road (Intersection #5). As shown on the proposed project site plan, the design accommodates a northbound right-turn deceleration lane along Fiddymment Road, however the available distance is less than the required stopping sight distance. The deceleration lane along westbound Blue Oaks Boulevard approaching Intersection #2 should be lengthened to 360 feet to adequately accommodate slowing vehicles entering the site.

Attachments:

Exhibit 1 – Project Site Plan

Exhibit 2 – Study Intersections

Exhibit 3 – Study Intersections, Traffic Control, and Lane Geometries

Exhibit 4 – Existing (2018) Peak-Hour Volumes

Exhibit 5 – Project Trip Distribution

Exhibit 6 – Project Only Volumes

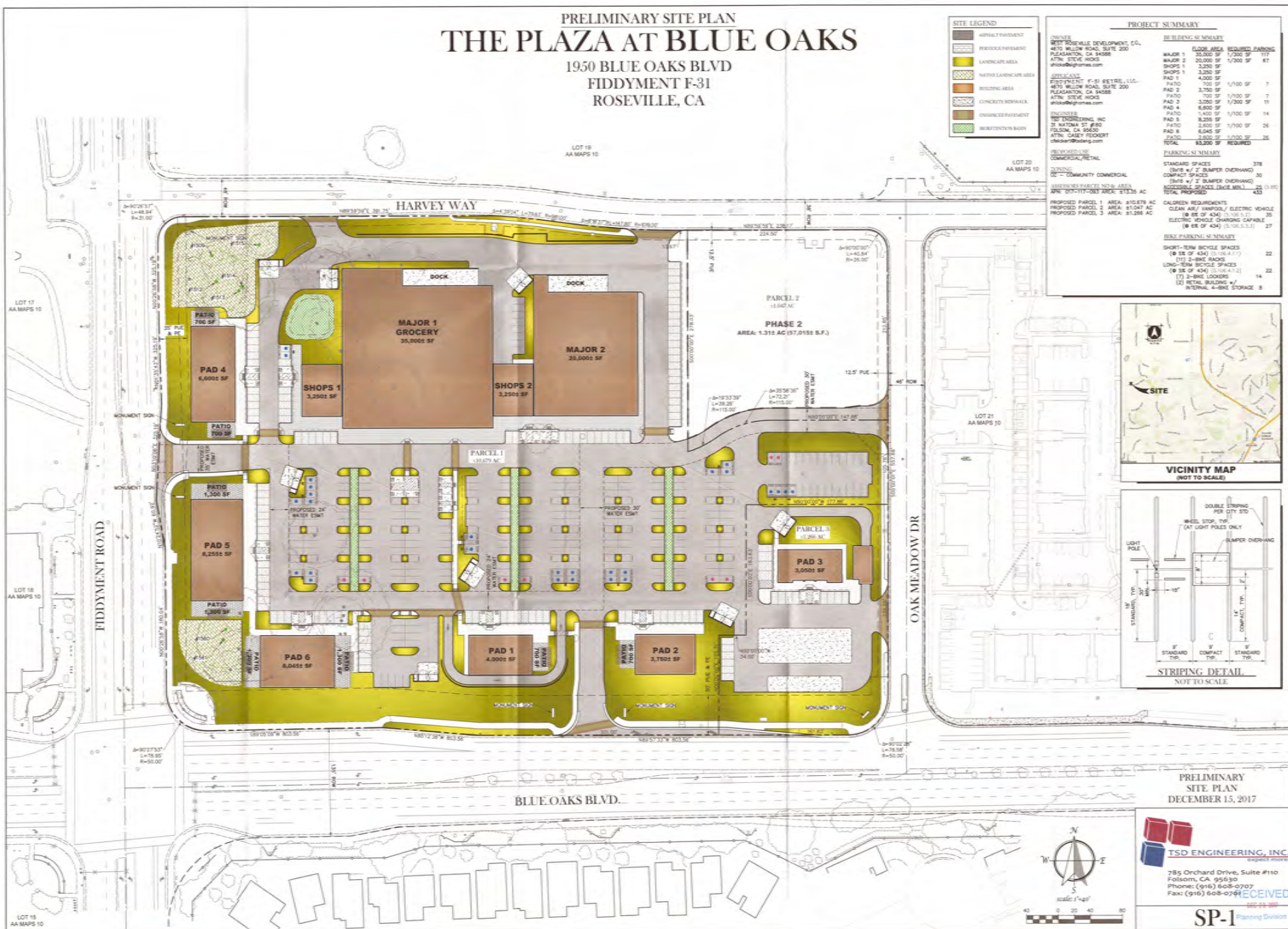
Exhibit 7 – Existing (2018) plus Proposed Project Volumes

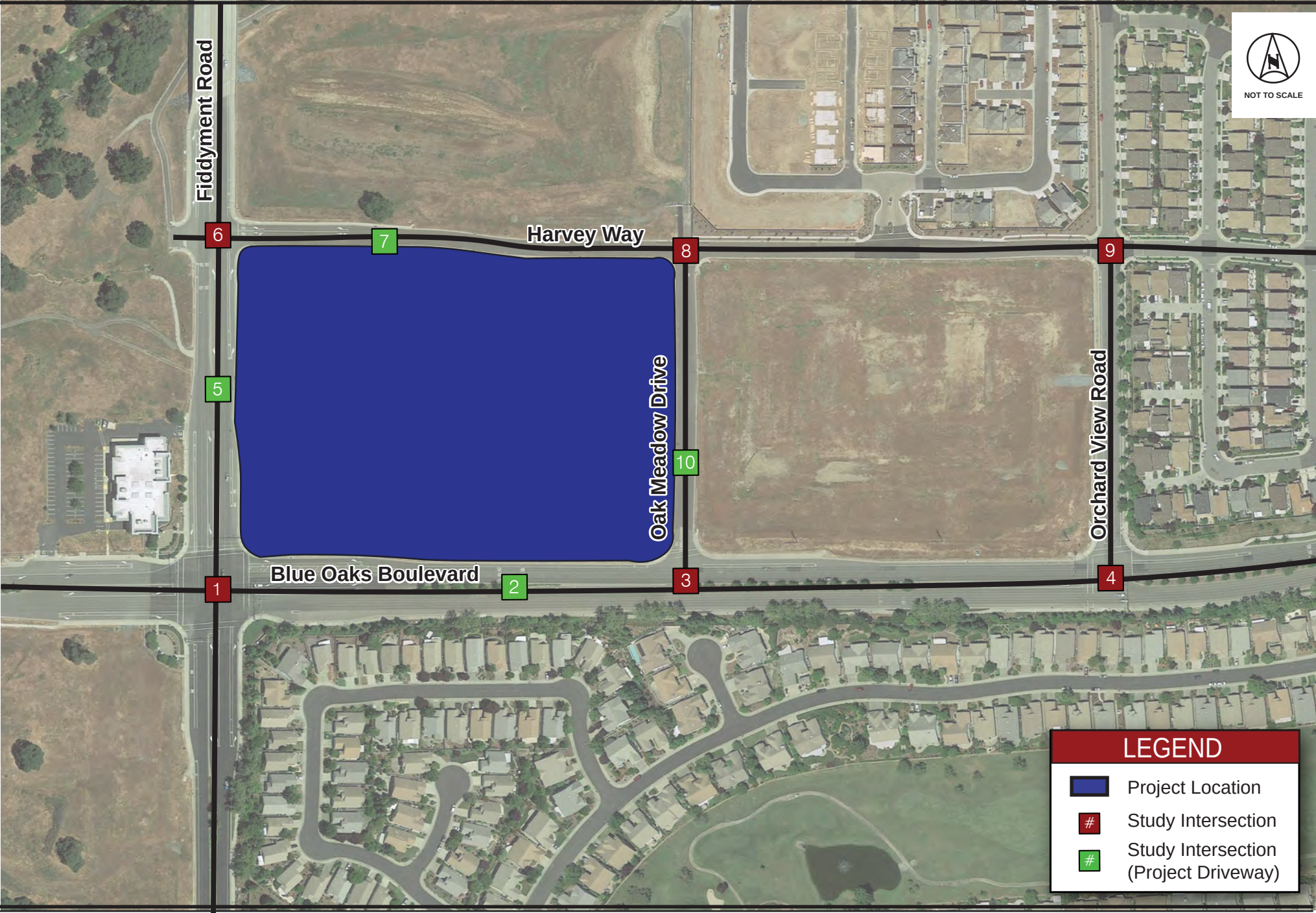
Attachment A – Traffic Count Data Sheets

Attachment B – Signalized Intersection Queuing and Operations Synchro Analysis Worksheets

Attachment C – Minimum Required Throat Depth (MRTD) Analysis Worksheet

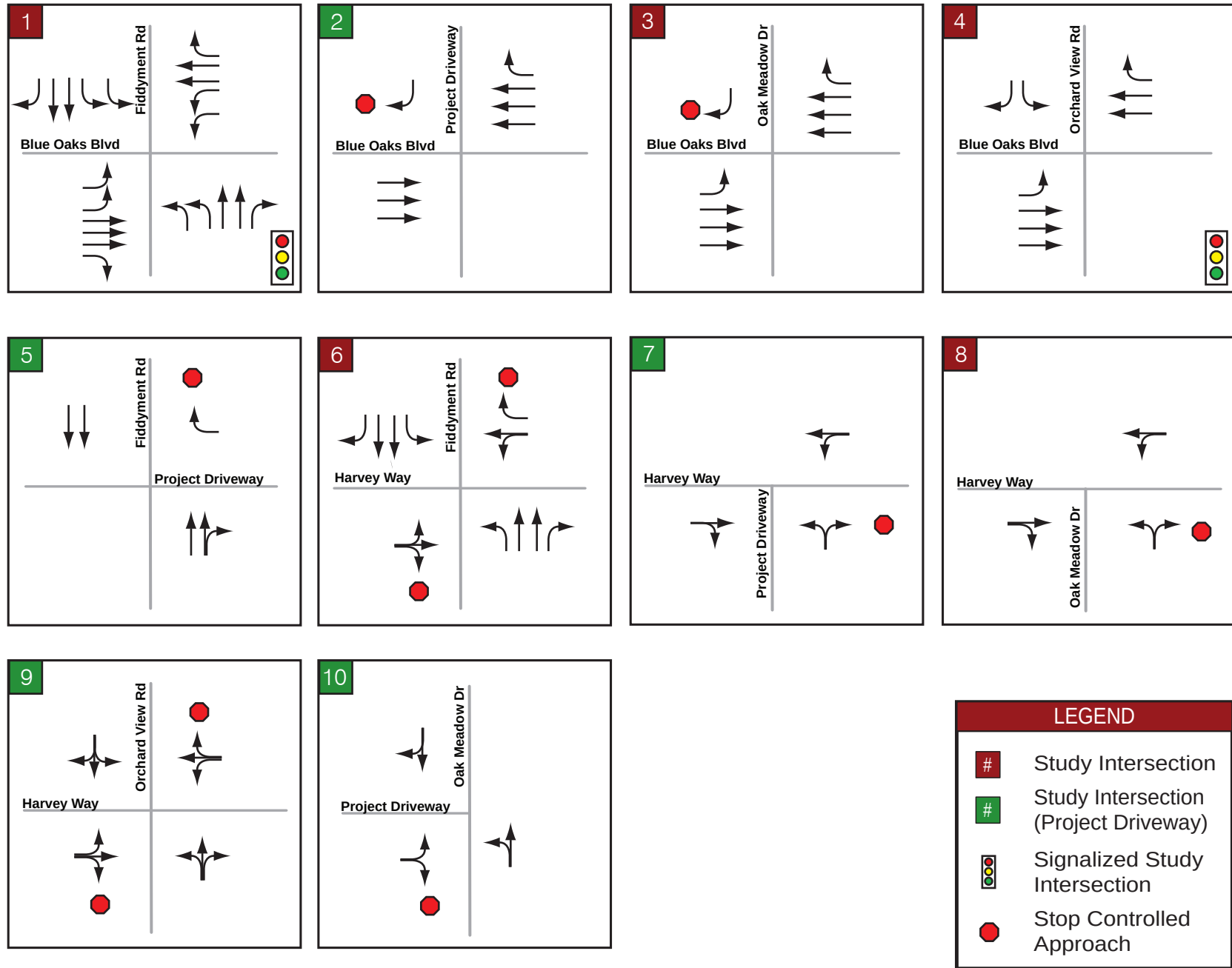
PRELIMINARY SITE PLAN
THE PLAZA AT BLUE OAKS
1950 BLUE OAKS BLVD
FIDDYMONT F-31
ROSEVILLE, CA

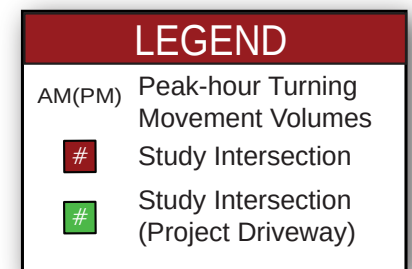
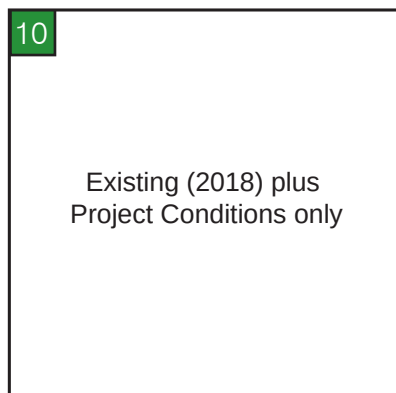
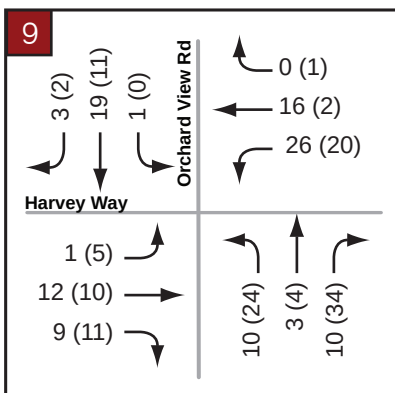
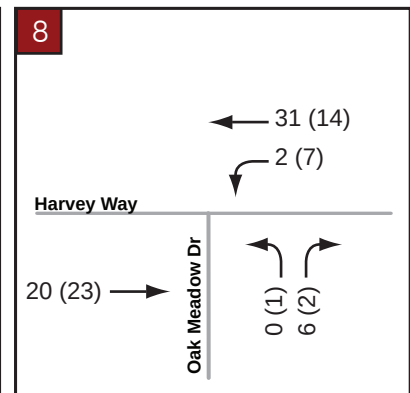
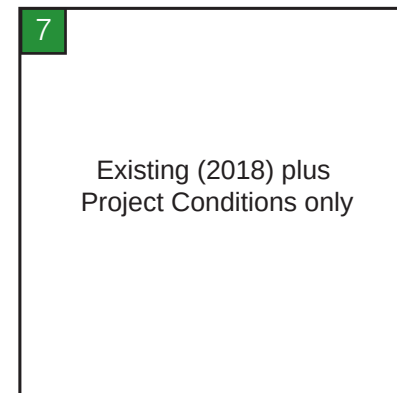
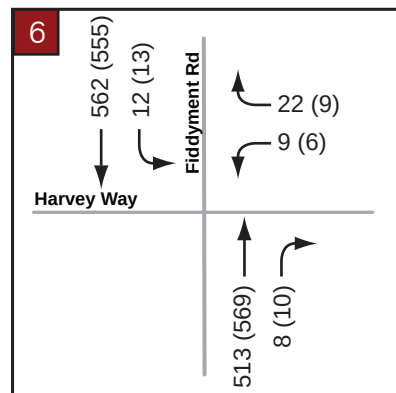
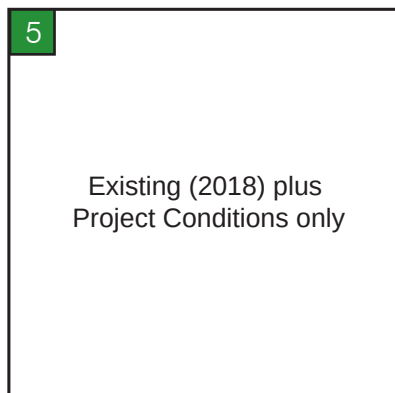
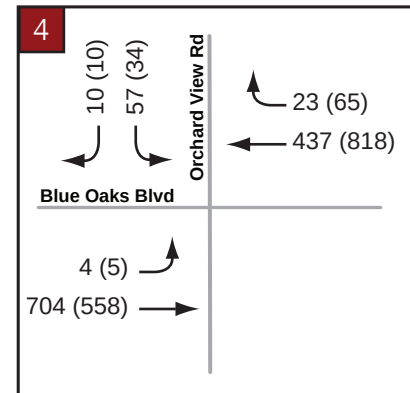
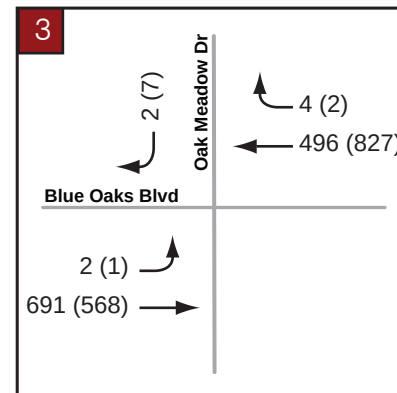
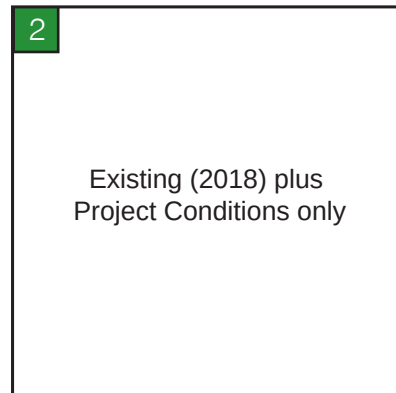
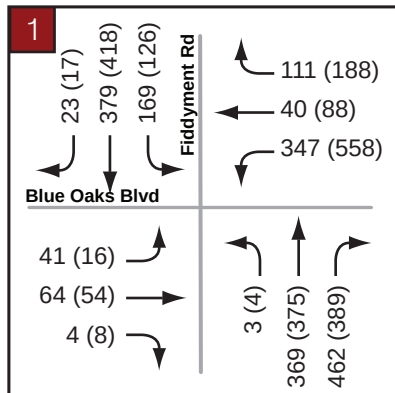




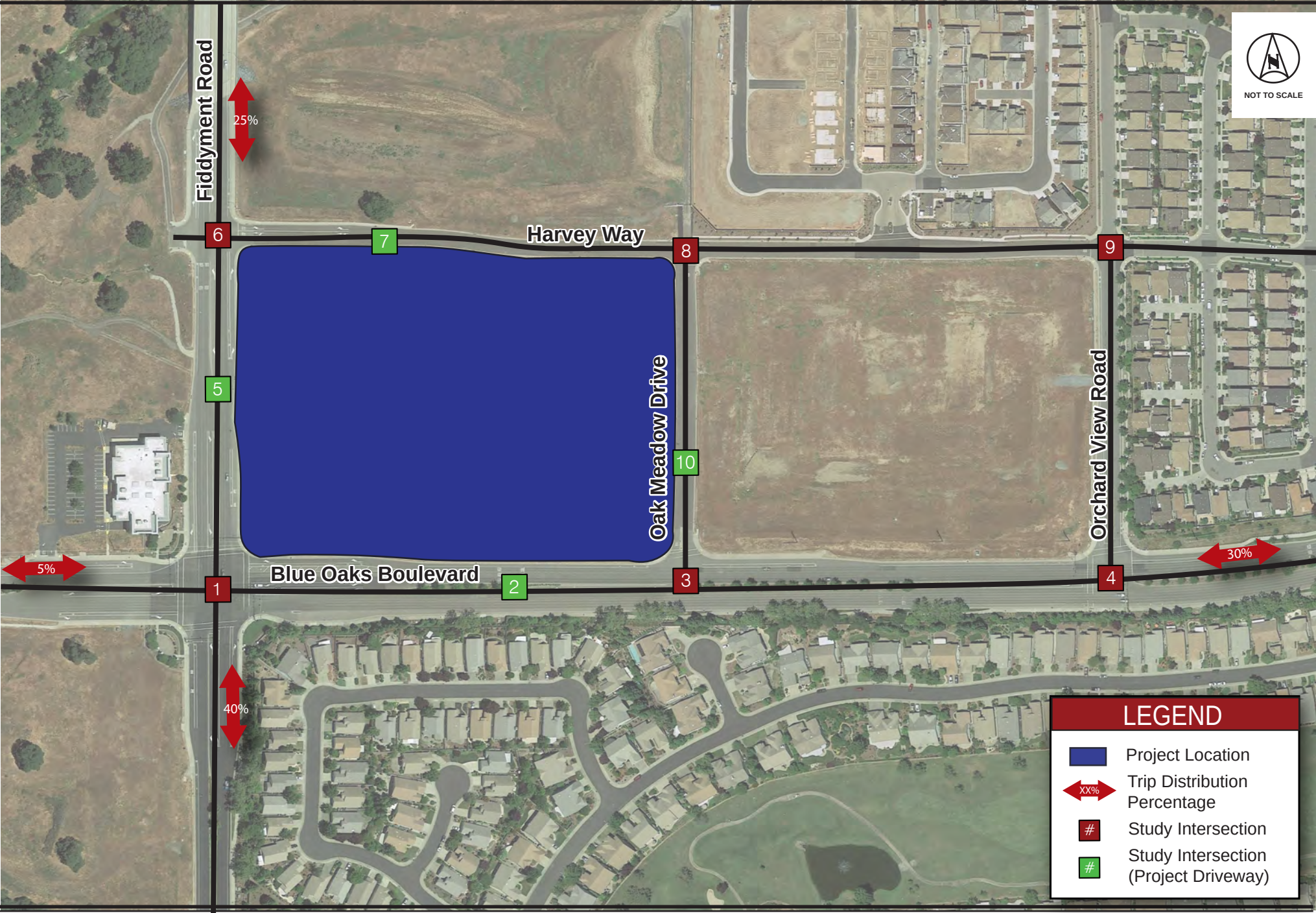
LEGEND

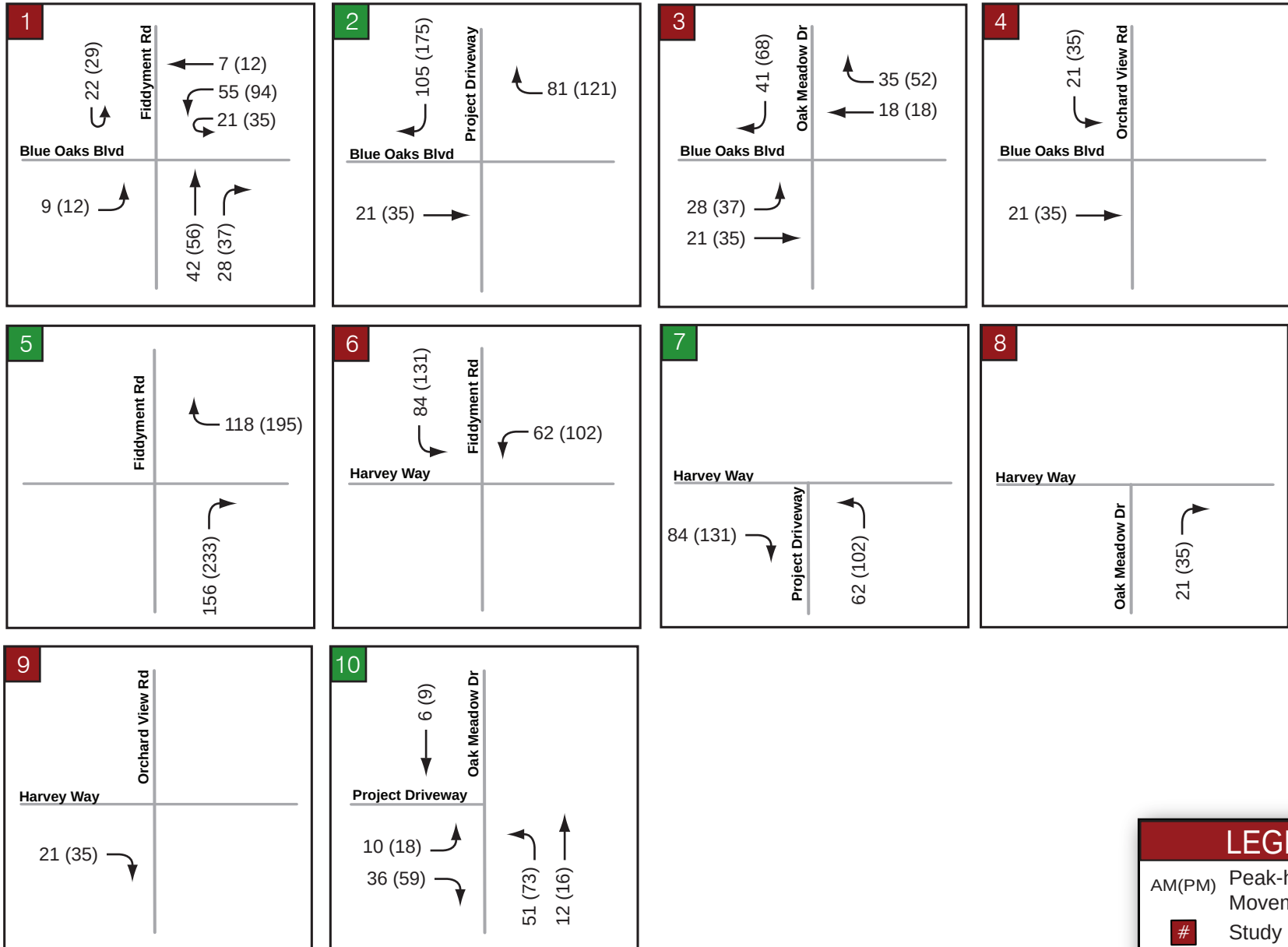
- Project Location
- Study Intersection
- Study Intersection (Project Driveway)



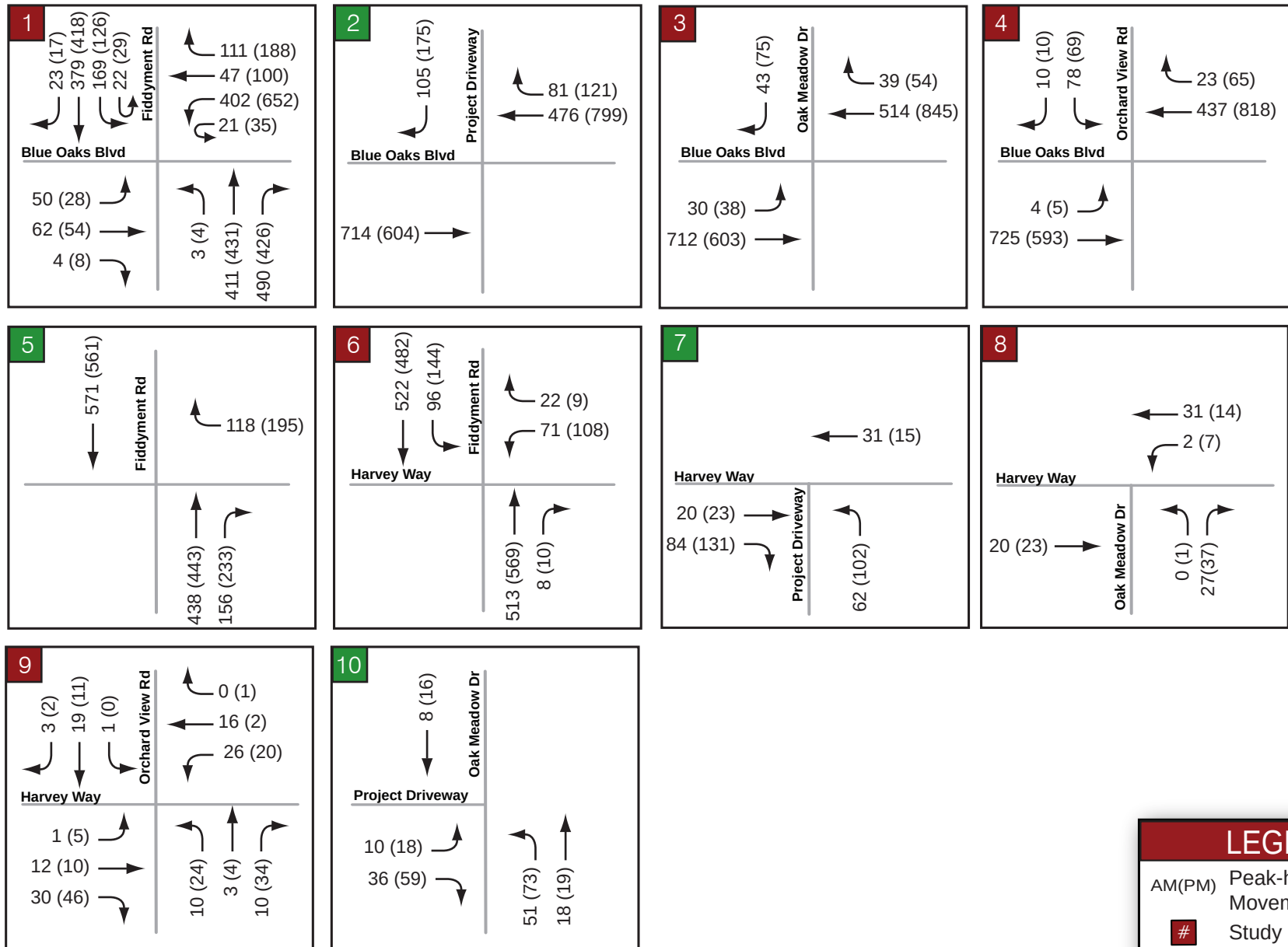


The Plaza at Blue Oaks





LEGEND	
AM(PM)	Peak-hour Turning Movement Volumes
#	Study Intersection
#	Study Intersection (Project Driveway)



LEGEND	
AM(PM)	Peak-hour Turning Movement Volumes
#	Study Intersection
#	Study Intersection (Project Driveway)

Attachment A
Traffic Count Data Sheets



Turning Movement Volume Report

Report Date: 3/15/2018 11:18:46 AM

From 3/6/2018 to 3/8/2018

Intersection: 154

Time	N				S				E				W				Int Total
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
03/06/18 00:00-00:15				0	1		0	1	0	5		5		15	0	15	21
03/06/18 00:15-00:30				0	0		0	0	0	7		7		5	1	6	13
03/06/18 00:30-00:45				0	0		1	1	0	6		6		9	0	9	16
03/06/18 00:45-01:00				0	0		0	0	0	6		6		7	1	8	14
03/06/18 01:00-01:15				0	0		0	0	0	0		0		4	0	4	4
03/06/18 01:15-01:30				0	0		0	0	0	2		2		6	1	7	9
03/06/18 01:30-01:45				0	0		0	0	0	2		2		3	0	3	5
03/06/18 01:45-02:00				0	0		0	0	0	2		2		3	0	3	5
03/06/18 02:00-02:15				0	0		0	0	0	4		4		3	0	3	7
03/06/18 02:15-02:30				0	0		0	0	0	0		0		2	0	2	2
03/06/18 02:30-02:45				0	0		0	0	0	5		5		6	0	6	11
03/06/18 02:45-03:00				0	0		0	0	0	3		3		2	0	2	5
03/06/18 03:00-03:15				0	1		0	1	0	5		5		4	0	4	10
03/06/18 03:15-03:30				0	0		0	0	0	4		4		3	0	3	7
03/06/18 03:30-03:45				0	2		0	2	1	5		6		5	0	5	13
03/06/18 03:45-04:00				0	1		0	1	0	7		7		3	2	5	13
03/06/18 04:00-04:15				0	3		0	3	0	14		14		3	0	3	20
03/06/18 04:15-04:30				0	0		1	1	0	7		7		6	0	6	14
03/06/18 04:30-04:45				0	1		0	1	0	12		12		7	1	8	21
03/06/18 04:45-05:00				0	3		0	3	0	19		19		5	1	6	28
03/06/18 05:00-05:15				0	6		0	6	0	30		30		5	1	6	42
03/06/18 05:15-05:30				0	3		1	4	0	29		29		9	0	9	42
03/06/18 05:30-05:45				0	4		0	4	0	40		40		10	0	10	54
03/06/18 05:45-06:00				0	6		0	6	0	45		45		16	0	16	67
03/06/18 06:00-06:15				0	7		0	7	0	63		63		17	0	17	87
03/06/18 06:15-06:30				0	7		0	7	0	52		52		52	3	55	114
03/06/18 06:30-06:45				0	4		1	5	0	63		63		51	2	53	121
03/06/18 06:45-07:00				0	7		5	12	0	87		87		92	6	98	197
03/06/18 07:00-07:15				0	7		2	9	0	105		105		95	5	100	214
03/06/18 07:15-07:30				0	12		4	16	0	142		142		111	3	114	272
03/06/18 07:30-07:45				0	19		3	22	1	202		203		103	3	106	331
03/06/18 07:45-08:00				0	15		3	18	0	197		197		115	4	119	334
03/06/18 08:00-08:15				0	17		1	18	0	206		206		112	8	120	344
03/06/18 08:15-08:30				0	8		4	12	3	131		134		106	7	113	259
03/06/18 08:30-08:45				0	10		5	15	0	160		160		106	4	110	285
03/06/18 08:45-09:00				0	17		3	20	0	173		173		120	5	125	318
03/06/18 09:00-09:15				0	13		0	13	1	160		161		98	4	102	276
03/06/18 09:15-09:30				0	7		1	8	1	137		138		85	5	90	236
03/06/18 09:30-09:45				0	9		1	10	0	99		99		73	2	75	184
03/06/18 09:45-10:00				0	8		0	8	0	84		84		66	2	68	160
03/06/18 10:00-10:15				0	4		2	6	0	97		97		64	3	67	170
03/06/18 10:15-10:30				0	7		0	7	1	102		103		87	6	93	203
03/06/18 10:30-10:45				0	9		7	16	2	82		84		65	5	70	170
03/06/18 10:45-11:00				0	5		0	5	1	98		99		88	3	91	195
03/06/18 11:00-11:15				0	9		1	10	0	95		95		79	6	85	190
03/06/18 11:15-11:30				0	10		2	12	0	88		88		71	2	73	173
03/06/18 11:30-11:45				0	8		0	8	1	86		87		82	13	95	190
03/06/18 11:45-12:00				0	11		2	13	0	103		103		102	5	107	223
03/06/18 12:00-12:15				0	5		2	7	0	88		88		98	3	101	196
03/06/18 12:15-12:30				0	11		1	12	1	89		90		86	6	92	194
03/06/18 12:30-12:45				0	7		2	9	0	83		83		89	11	100	192
03/06/18 12:45-13:00				0	4		4	8	0	84		84		101	8	109	201
03/06/18 13:00-13:15				0	2		2	4	1	96		97		92	5	97	198

03/06/18 13:15-13:30			0	6	0	6	1	90	91	83	8	91	188
03/06/18 13:30-13:45			0	5	2	7	0	96	96	97	9	106	209
03/06/18 13:45-14:00			0	6	1	7	0	100	100	113	5	118	225
03/06/18 14:00-14:15			0	5	2	7	1	83	84	94	9	103	194
03/06/18 14:15-14:30			0	14	3	17	0	100	100	115	5	120	237
03/06/18 14:30-14:45			0	3	6	9	1	105	106	103	6	109	224
03/06/18 14:45-15:00			0	8	1	9	2	91	93	128	5	133	235
03/06/18 15:00-15:15			0	12	0	12	0	98	98	166	6	172	282
03/06/18 15:15-15:30			0	6	2	8	1	114	115	144	15	159	282
03/06/18 15:30-15:45			0	9	2	11	2	131	133	184	8	192	336
03/06/18 15:45-16:00			0	11	1	12	4	113	117	143	10	153	282
03/06/18 16:00-16:15			0	4	1	5	0	104	104	156	15	171	280
03/06/18 16:15-16:30			0	5	0	5	0	120	120	156	3	159	284
03/06/18 16:30-16:45			0	6	1	7	0	137	137	165	12	177	321
03/06/18 16:45-17:00			0	6	4	10	1	122	123	166	12	178	311
03/06/18 17:00-17:15			0	9	0	9	0	125	125	184	12	196	330
03/06/18 17:15-17:30			0	8	5	13	1	127	128	206	15	221	362
03/06/18 17:30-17:45			0	7	5	12	3	124	127	195	18	213	352
03/06/18 17:45-18:00			0	8	2	10	0	168	168	190	20	210	388
03/06/18 18:00-18:15			0	11	1	12	2	140	142	160	6	166	320
03/06/18 18:15-18:30			0	4	1	5	2	134	136	155	18	173	314
03/06/18 18:30-18:45			0	10	0	10	1	106	107	138	17	155	272
03/06/18 18:45-19:00			0	3	0	3	0	129	129	139	12	151	283
03/06/18 19:00-19:15			0	6	1	7	0	94	94	126	12	138	239
03/06/18 19:15-19:30			0	2	3	5	2	84	86	105	15	120	211
03/06/18 19:30-19:45			0	5	3	8	3	50	53	112	10	122	183
03/06/18 19:45-20:00			0	5	0	5	1	43	44	125	7	132	181
03/06/18 20:00-20:15			0	6	0	6	2	47	49	103	5	108	163
03/06/18 20:15-20:30			0	1	0	1	2	36	38	86	6	92	131
03/06/18 20:30-20:45			0	8	2	10	1	51	52	76	6	82	144
03/06/18 20:45-21:00			0	1	0	1	1	34	35	76	4	80	116
03/06/18 21:00-21:15			0	0	0	0	1	26	27	63	7	70	97
03/06/18 21:15-21:30			0	2	1	3	1	35	36	68	7	75	114
03/06/18 21:30-21:45			0	2	1	3	0	31	31	76	7	83	117
03/06/18 21:45-22:00			0	3	0	3	1	31	32	51	5	56	91
03/06/18 22:00-22:15			0	5	0	5	0	17	17	34	3	37	59
03/06/18 22:15-22:30			0	0	0	0	0	20	20	42	6	48	68
03/06/18 22:30-22:45			0	2	0	2	0	19	19	23	1	24	45
03/06/18 22:45-23:00			0	2	0	2	1	16	17	20	1	21	40
03/06/18 23:00-23:15			0	0	1	1	0	11	11	22	3	25	37
03/06/18 23:15-23:30			0	0	0	0	0	8	8	23	2	25	33
03/06/18 23:30-23:45			0	0	0	0	0	6	6	22	2	24	30
03/06/18 23:45-00:00			0	2	0	2	0	12	12	17	2	19	33
03/07/18 00:00-00:15			0	0	1	1	0	4	4	21	0	21	26
03/07/18 00:15-00:30			0	0	0	0	0	3	3	19	0	19	22
03/07/18 00:30-00:45			0	0	0	0	0	5	5	11	2	13	18
03/07/18 00:45-01:00			0	0	0	0	0	5	5	6	1	7	12
03/07/18 01:00-01:15			0	0	0	0	0	2	2	5	2	7	9
03/07/18 01:15-01:30			0	0	0	0	0	2	2	8	0	8	10
03/07/18 01:30-01:45			0	0	0	0	0	2	2	2	0	2	4
03/07/18 01:45-02:00			0	0	0	0	0	3	3	5	0	5	8
03/07/18 02:00-02:15			0	0	0	0	0	2	2	5	0	5	7
03/07/18 02:15-02:30			0	0	0	0	0	1	1	0	0	0	1
03/07/18 02:30-02:45			0	0	0	0	0	1	1	5	0	5	6
03/07/18 02:45-03:00			0	0	0	0	0	3	3	4	0	4	7
03/07/18 03:00-03:15			0	0	0	0	0	2	2	6	0	6	8
03/07/18 03:15-03:30			0	1	0	1	1	4	5	6	0	6	12
03/07/18 03:30-03:45			0	1	0	1	0	1	1	2	0	2	4
03/07/18 03:45-04:00			0	2	0	2	0	10	10	3	0	3	15
03/07/18 04:00-04:15			0	2	0	2	0	9	9	3	0	3	14

03/07/18 04:15-04:30			0	0	1	1	0	8	8	5	1	6	15
03/07/18 04:30-04:45			0	2	0	2	0	14	14	5	1	6	22
03/07/18 04:45-05:00			0	2	0	2	0	21	21	4	1	5	28
03/07/18 05:00-05:15			0	5	0	5	0	29	29	10	0	10	44
03/07/18 05:15-05:30			0	2	0	2	0	22	22	12	0	12	36
03/07/18 05:30-05:45			0	7	0	7	0	35	35	19	0	19	61
03/07/18 05:45-06:00			0	7	0	7	0	49	49	21	0	21	77
03/07/18 06:00-06:15			0	9	0	9	0	59	59	21	0	21	89
03/07/18 06:15-06:30			0	4	0	4	0	60	60	53	3	56	120
03/07/18 06:30-06:45			0	13	0	13	1	66	67	41	4	45	125
03/07/18 06:45-07:00			0	6	7	13	0	88	88	71	4	75	176
03/07/18 07:00-07:15			0	12	4	16	0	110	110	83	7	90	216
03/07/18 07:15-07:30			0	10	5	15	0	112	112	96	3	99	226
03/07/18 07:30-07:45			0	18	6	24	1	182	183	85	6	91	298
03/07/18 07:45-08:00			0	13	1	14	1	182	183	117	7	124	321
03/07/18 08:00-08:15			0	12	1	13	0	178	178	107	9	116	307
03/07/18 08:15-08:30			0	13	1	14	1	127	128	107	4	111	253
03/07/18 08:30-08:45			0	15	4	19	1	157	158	95	5	100	277
03/07/18 08:45-09:00			0	9	2	11	2	176	178	117	4	121	310
03/07/18 09:00-09:15			0	21	2	23	0	156	156	101	2	103	282
03/07/18 09:15-09:30			0	6	1	7	1	117	118	83	5	88	213
03/07/18 09:30-09:45			0	4	0	4	1	97	98	59	7	66	168
03/07/18 09:45-10:00			0	6	1	7	0	101	101	80	5	85	193
03/07/18 10:00-10:15			0	9	1	10	0	96	96	79	2	81	187
03/07/18 10:15-10:30			0	7	1	8	0	98	98	47	5	52	158
03/07/18 10:30-10:45			0	5	2	7	0	75	75	74	4	78	160
03/07/18 10:45-11:00			0	8	1	9	0	100	100	76	6	82	191
03/07/18 11:00-11:15			0	9	0	9	0	69	69	78	2	80	158
03/07/18 11:15-11:30			0	8	0	8	0	81	81	75	8	83	172
03/07/18 11:30-11:45			0	5	2	7	0	77	77	99	15	114	198
03/07/18 11:45-12:00			0	12	0	12	0	93	93	87	4	91	196
03/07/18 12:00-12:15			0	8	1	9	0	119	119	94	7	101	229
03/07/18 12:15-12:30			0	6	0	6	0	84	84	88	9	97	187
03/07/18 12:30-12:45			0	6	0	6	1	83	84	102	3	105	195
03/07/18 12:45-13:00			0	8	0	8	0	95	95	94	9	103	206
03/07/18 13:00-13:15			0	3	0	3	0	92	92	97	5	102	197
03/07/18 13:15-13:30			0	9	0	9	1	81	82	97	9	106	197
03/07/18 13:30-13:45			0	7	0	7	0	85	85	112	5	117	209
03/07/18 13:45-14:00			0	5	0	5	0	94	94	93	7	100	199
03/07/18 14:00-14:15			0	6	1	7	1	79	80	100	3	103	190
03/07/18 14:15-14:30			0	7	1	8	0	74	74	88	1	89	171
03/07/18 14:30-14:45			0	6	1	7	0	81	81	119	8	127	215
03/07/18 14:45-15:00			0	6	4	10	0	94	94	125	9	134	238
03/07/18 15:00-15:15			0	6	2	8	0	102	102	99	2	101	211
03/07/18 15:15-15:30			0	5	4	9	1	117	118	170	11	181	308
03/07/18 15:30-15:45			0	9	2	11	1	151	152	158	7	165	328
03/07/18 15:45-16:00			0	10	2	12	3	126	129	195	12	207	348
03/07/18 16:00-16:15			0	9	2	11	0	111	111	150	10	160	282
03/07/18 16:15-16:30			0	11	0	11	0	113	113	174	13	187	311
03/07/18 16:30-16:45			0	9	0	9	2	144	146	188	6	194	349
03/07/18 16:45-17:00			0	4	3	7	1	123	124	190	17	207	338
03/07/18 17:00-17:15			0	4	2	6	0	133	133	181	15	196	335
03/07/18 17:15-17:30			0	10	2	12	1	141	142	222	15	237	391
03/07/18 17:30-17:45			0	10	0	10	1	135	136	254	14	268	414
03/07/18 17:45-18:00			0	6	2	8	2	160	162	239	17	256	426
03/07/18 18:00-18:15			0	6	1	7	3	122	125	197	15	212	344
03/07/18 18:15-18:30			0	4	2	6	2	117	119	187	18	205	330
03/07/18 18:30-18:45			0	8	1	9	0	125	125	172	17	189	323
03/07/18 18:45-19:00			0	12	0	12	1	133	134	143	7	150	296
03/07/18 19:00-19:15			0	10	3	13	3	88	91	112	12	124	228

03/07/18 19:15-19:30			0	4	0	4	1	75	76	131	12	143	223
03/07/18 19:30-19:45			0	3	0	3	1	57	58	97	10	107	168
03/07/18 19:45-20:00			0	4	0	4	1	65	66	92	4	96	166
03/07/18 20:00-20:15			0	3	2	5	1	49	50	90	18	108	163
03/07/18 20:15-20:30			0	4	0	4	0	38	38	105	5	110	152
03/07/18 20:30-20:45			0	2	1	3	0	36	36	70	9	79	118
03/07/18 20:45-21:00			0	3	0	3	0	36	36	95	4	99	138
03/07/18 21:00-21:15			0	3	0	3	0	31	31	74	7	81	115
03/07/18 21:15-21:30			0	1	0	1	0	30	30	65	14	79	110
03/07/18 21:30-21:45			0	2	0	2	1	29	30	77	7	84	116
03/07/18 21:45-22:00			0	5	0	5	0	27	27	62	3	65	97
03/07/18 22:00-22:15			0	6	1	7	0	29	29	56	2	58	94
03/07/18 22:15-22:30			0	0	1	1	1	16	17	36	3	39	57
03/07/18 22:30-22:45			0	0	0	0	0	26	26	23	2	25	51
03/07/18 22:45-23:00			0	1	0	1	0	9	9	22	1	23	33
03/07/18 23:00-23:15			0	1	0	1	0	16	16	19	0	19	36
03/07/18 23:15-23:30			0	1	0	1	1	9	10	28	2	30	41
03/07/18 23:30-23:45			0	0	0	0	0	10	10	25	3	28	38
03/07/18 23:45-00:00			0	0	0	0	0	12	12	17	2	19	31
03/08/18 00:00-00:15			0	1	0	1	1	10	11	9	2	11	23
03/08/18 00:15-00:30			0	1	0	1	0	9	9	10	2	12	22
03/08/18 00:30-00:45			0	1	0	1	0	4	4	8	2	10	15
03/08/18 00:45-01:00			0	0	0	0	0	6	6	12	0	12	18
03/08/18 01:00-01:15			0	0	0	0	0	7	7	8	1	9	16
03/08/18 01:15-01:30			0	0	0	0	0	4	4	5	0	5	9
03/08/18 01:30-01:45			0	0	0	0	0	3	3	3	1	4	7
03/08/18 01:45-02:00			0	0	0	0	0	1	1	6	0	6	7
03/08/18 02:00-02:15			0	0	0	0	0	0	0	1	0	1	1
03/08/18 02:15-02:30			0	0	0	0	0	3	3	3	1	4	7
03/08/18 02:30-02:45			0	0	0	0	0	0	0	4	1	5	5
03/08/18 02:45-03:00			0	0	0	0	0	3	3	1	0	1	4
03/08/18 03:00-03:15			0	0	0	0	0	3	3	3	0	3	6
03/08/18 03:15-03:30			0	0	0	0	0	7	7	2	0	2	9
03/08/18 03:30-03:45			0	1	1	2	1	7	8	4	0	4	14
03/08/18 03:45-04:00			0	2	0	2	0	9	9	2	1	3	14
03/08/18 04:00-04:15			0	2	0	2	0	10	10	3	0	3	15
03/08/18 04:15-04:30			0	0	0	0	0	7	7	6	1	7	14
03/08/18 04:30-04:45			0	2	0	2	0	8	8	7	0	7	17
03/08/18 04:45-05:00			0	4	0	4	0	23	23	7	2	9	36
03/08/18 05:00-05:15			0	0	0	0	0	35	35	8	0	8	43
03/08/18 05:15-05:30			0	5	0	5	0	15	15	11	0	11	31
03/08/18 05:30-05:45			0	4	0	4	0	37	37	14	0	14	55
03/08/18 05:45-06:00			0	3	1	4	0	51	51	24	1	25	80
03/08/18 06:00-06:15			0	4	1	5	0	65	65	26	1	27	97
03/08/18 06:15-06:30			0	10	0	10	0	51	51	44	3	47	108
03/08/18 06:30-06:45			0	5	0	5	0	65	65	43	5	48	118
03/08/18 06:45-07:00			0	11	5	16	0	75	75	68	6	74	165
03/08/18 07:00-07:15			0	11	6	17	0	109	109	86	5	91	217
03/08/18 07:15-07:30			0	14	4	18	0	140	140	82	3	85	243
03/08/18 07:30-07:45			0	13	3	16	1	193	194	111	4	115	325
03/08/18 07:45-08:00			0	10	1	11	0	202	202	124	3	127	340
03/08/18 08:00-08:15			0	16	2	18	0	192	192	124	3	127	337
03/08/18 08:15-08:30			0	14	1	15	0	117	117	94	7	101	233
03/08/18 08:30-08:45			0	13	2	15	2	172	174	107	6	113	302
03/08/18 08:45-09:00			0	12	2	14	1	186	187	106	5	111	312
03/08/18 09:00-09:15			0	11	1	12	1	186	187	84	2	86	285
03/08/18 09:15-09:30			0	12	0	12	1	126	127	78	8	86	225
03/08/18 09:30-09:45			0	10	0	10	1	110	111	80	2	82	203
03/08/18 09:45-10:00			0	13	0	13	0	98	98	86	4	90	201
03/08/18 10:00-10:15			0	7	0	7	0	92	92	75	8	83	182

03/08/18 10:15-10:30				0	5		1	6	0	104		104		67	5	72	182
03/08/18 10:30-10:45				0	8		1	9	0	110		110		68	5	73	192
03/08/18 10:45-11:00				0	6		1	7	0	74		74		91	5	96	177
03/08/18 11:00-11:15				0	4		5	9	0	87		87		83	5	88	184
03/08/18 11:15-11:30				0	12		2	14	0	79		79		78	5	83	176
03/08/18 11:30-11:45				0	11		3	14	0	100		100		87	2	89	203
03/08/18 11:45-12:00				0	10		0	10	0	90		90		88	6	94	194
03/08/18 12:00-12:15				0	3		2	5	0	96		96		109	10	119	220
03/08/18 12:15-12:30				0	5		0	5	1	90		91		99	8	107	203
03/08/18 12:30-12:45				0	11		0	11	1	92		93		103	5	108	212
03/08/18 12:45-13:00				0	5		2	7	0	91		91		103	9	112	210
03/08/18 13:00-13:15				0	5		0	5	0	88		88		112	7	119	212
03/08/18 13:15-13:30				0	3		0	3	0	90		90		97	5	102	195
03/08/18 13:30-13:45				0	9		1	10	0	99		99		102	10	112	221
03/08/18 13:45-14:00				0	4		2	6	1	100		101		98	6	104	211
03/08/18 14:00-14:15				0	4		2	6	0	83		83		128	7	135	224
03/08/18 14:15-14:30				0	6		0	6	0	80		80		94	2	96	182
03/08/18 14:30-14:45				0	9		4	13	0	83		83		117	9	126	222
03/08/18 14:45-15:00				0	6		0	6	1	98		99		128	7	135	240
03/08/18 15:00-15:15				0	12		1	13	0	102		102		129	6	135	250
03/08/18 15:15-15:30				0	5		3	8	1	121		122		175	13	188	318
03/08/18 15:30-15:45				0	11		1	12	0	123		123		172	6	178	313
03/08/18 15:45-16:00				0	8		1	9	1	123		124		178	9	187	320
03/08/18 16:00-16:15				0	5		1	6	0	136		136		189	13	202	344
03/08/18 16:15-16:30				0	3		2	5	0	140		140		161	11	172	317
03/08/18 16:30-16:45				0	11		2	13	1	123		124		149	11	160	297
03/08/18 16:45-17:00				0	8		2	10	1	122		123		186	11	197	330
03/08/18 17:00-17:15				0	10		2	12	0	139		139		193	14	207	358
03/08/18 17:15-17:30				0	8		1	9	2	118		120		207	13	220	349
03/08/18 17:30-17:45				0	9		2	11	1	143		144		188	17	205	360
03/08/18 17:45-18:00				0	10		2	12	1	156		157		190	19	209	378
03/08/18 18:00-18:15				0	12		1	13	2	125		127		155	14	169	309
03/08/18 18:15-18:30				0	5		1	6	0	121		121		138	15	153	280
03/08/18 18:30-18:45				0	8		1	9	4	133		137		168	24	192	338
03/08/18 18:45-19:00				0	6		1	7	2	110		112		139	11	150	269
03/08/18 19:00-19:15				0	8		1	9	0	113		113		125	10	135	257
03/08/18 19:15-19:30				0	4		0	4	0	77		77		105	5	110	191
03/08/18 19:30-19:45				0	7		1	8	0	71		71		112	12	124	203
03/08/18 19:45-20:00				0	1		0	1	1	57		58		89	14	103	162
03/08/18 20:00-20:15				0	11		0	11	1	39		40		112	8	120	171
03/08/18 20:15-20:30				0	4		0	4	0	50		50		90	5	95	149
03/08/18 20:30-20:45				0	4		1	5	1	32		33		73	8	81	119
03/08/18 20:45-21:00				0	4		0	4	1	40		41		88	3	91	136
03/08/18 21:00-21:15				0	2		1	3	0	35		35		94	4	98	136
03/08/18 21:15-21:30				0	1		0	1	0	40		40		72	8	80	121
03/08/18 21:30-21:45				0	3		1	4	0	37		37		72	6	78	119
03/08/18 21:45-22:00				0	3		0	3	2	32		34		52	5	57	94
03/08/18 22:00-22:15				0	6		1	7	0	18		18		48	9	57	82
03/08/18 22:15-22:30				0	2		0	2	0	28		28		31	6	37	67
03/08/18 22:30-22:45				0	0		1	1	0	38		38		38	5	43	82
03/08/18 22:45-23:00				0	2		2	4	0	12		12		20	3	23	39
03/08/18 23:00-23:15				0	1		0	1	0	12		12		33	2	35	48
03/08/18 23:15-23:30				0	0		0	0	1	14		15		22	0	22	37
03/08/18 23:30-23:45				0	1		0	1	0	12		12		20	2	22	35
03/08/18 23:45-00:00				0	0		2	2	0	7		7		20	2	22	31
Summary	0	0	0	0	1559	0	289	1848	129	20509	0	20638	0	22303	1556	23859	46345

National Data & Surveying Services Intersection Turning Movement Count

Location: Oak Meadow Dr & Blue Oaks Blvd

City: Roseville

Control: 1-Way Stop(SB)

Project ID: 18-07057-001

Date: 2/27/2018

Total

NS/EW Streets:	Oak Meadow Dr				Oak Meadow Dr				Blue Oaks Blvd				Blue Oaks Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	1 EL	3 ET	0 ER	0 EU	0 WL	4 WT	0 WR	0 WU	
6:00 AM	0	0	0	0	0	0	0	0	1	56	0	0	0	52	0	0	109
6:15 AM	0	0	0	0	0	0	0	0	1	67	0	0	0	47	1	0	116
6:30 AM	0	0	0	0	0	0	0	0	1	89	0	0	0	68	2	0	160
6:45 AM	0	0	0	0	0	0	1	0	2	106	0	1	0	91	4	0	205
7:00 AM	0	0	0	0	0	0	1	0	0	153	0	0	0	109	0	0	263
7:15 AM	0	0	0	0	0	0	0	0	1	164	0	0	0	121	1	0	287
7:30 AM	0	0	0	0	0	0	1	0	0	186	0	0	0	132	1	0	320
7:45 AM	0	0	0	0	0	0	0	0	0	188	0	0	0	134	0	0	322
8:00 AM	0	0	0	0	0	0	0	0	2	131	0	0	0	116	1	0	250
8:15 AM	0	0	0	0	0	0	0	0	1	161	0	0	0	108	0	0	270
8:30 AM	0	0	0	0	0	0	1	0	2	192	0	0	0	110	1	0	306
8:45 AM	0	0	0	0	0	0	1	0	0	136	0	0	0	100	0	0	237
9:00 AM																	0
9:15 AM																	0
9:30 AM																	0
9:45 AM																	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	5	0	11	1629	0	1	0	1188	11	0	2845
					0.00%	0.00%	100.00%	0.00%	0.67%	99.27%	0.00%	0.06%	0.00%	99.08%	0.92%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	2	0	1	691	0	0	0	496	2	0	1192
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.250	0.919	0.000	0.000	0.000	0.925	0.500	0.000	0.925
							0.500				0.920				0.929		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	1 EL	3 ET	0 ER	0 EU	0 WL	4 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	0	2	0	0	146	0	0	0	135	1	0	284
4:15 PM	0	0	0	0	0	0	0	0	1	131	0	1	0	158	0	0	291
4:30 PM	0	0	0	0	0	0	1	0	1	130	0	0	0	153	1	0	286
4:45 PM	0	0	0	0	0	0	0	0	0	138	0	0	0	174	0	0	312
5:00 PM	0	0	0	0	0	0	0	0	0	120	0	0	0	189	0	0	309
5:15 PM	0	0	0	0	0	0	2	0	0	146	0	0	0	200	0	0	348
5:30 PM	0	0	0	0	0	0	5	0	1	147	0	0	0	213	2	0	368
5:45 PM	0	0	0	0	0	0	0	0	0	155	0	0	0	192	0	0	347
6:00 PM	0	0	0	0	0	0	0	0	0	97	0	0	0	160	0	0	257
6:15 PM	0	0	0	0	0	0	0	0	0	115	0	0	0	143	0	0	258
6:30 PM	0	0	0	0	0	0	1	0	0	123	0	0	0	152	0	0	276
6:45 PM	0	0	0	0	0	0	0	0	0	87	0	0	0	114	0	0	201
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	11	0	3	1535	0	1	0	1983	4	0	3537
					0.00%	0.00%	100.00%	0.00%	0.19%	99.74%	0.00%	0.06%	0.00%	99.80%	0.20%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	7	0	1	568	0	0	0	794	2	0	1372
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.000	0.250	0.916	0.000	0.000	0.000	0.932	0.250	0.000	0.932
							0.350				0.918				0.926		



Turning Movement Volume Report

Report Date: 3/15/2018 11:14:25 AM

From 3/6/2018 to 3/8/2018

Intersection: 155

Time	N				S				E				W				Int Total
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
03/06/18 00:00-00:15	0	13	2	15	3	11	0	14	0	0	0	0	6	2	7	15	44
03/06/18 00:15-00:30	0	3	4	7	3	16	1	20	0	0	0	0	2	1	2	5	32
03/06/18 00:30-00:45	0	6	5	11	0	23	0	23	0	1	0	1	6	3	1	10	45
03/06/18 00:45-01:00	0	8	5	13	0	10	0	10	2	1	0	3	3	3	1	7	33
03/06/18 01:00-01:15	0	4	0	4	0	11	0	11	0	0	0	0	4	0	0	4	19
03/06/18 01:15-01:30	0	6	1	7	2	17	0	19	0	0	0	0	3	0	3	6	32
03/06/18 01:30-01:45	0	9	1	10	0	7	0	7	0	0	0	0	2	0	1	3	20
03/06/18 01:45-02:00	0	6	2	8	0	13	0	13	0	0	0	0	2	1	0	3	24
03/06/18 02:00-02:15	0	2	2	4	1	9	0	10	0	0	0	0	2	1	0	3	17
03/06/18 02:15-02:30	0	1	0	1	0	9	0	9	0	0	0	0	1	0	0	1	11
03/06/18 02:30-02:45	0	7	4	11	0	14	0	14	0	1	0	1	4	2	1	7	33
03/06/18 02:45-03:00	0	4	2	6	1	11	0	12	0	0	0	0	2	0	0	2	20
03/06/18 03:00-03:15	0	2	5	7	0	6	0	6	0	0	0	0	3	0	1	4	17
03/06/18 03:15-03:30	0	6	5	11	0	4	0	4	0	0	0	0	3	0	0	3	18
03/06/18 03:30-03:45	0	2	4	6	0	5	0	5	0	1	0	1	2	0	1	3	15
03/06/18 03:45-04:00	0	3	6	9	1	7	1	9	0	0	0	0	3	0	0	3	21
03/06/18 04:00-04:15	0	8	9	17	1	7	0	8	0	4	0	4	2	0	2	4	33
03/06/18 04:15-04:30	0	4	5	9	2	9	0	11	0	1	0	1	6	0	0	6	27
03/06/18 04:30-04:45	0	7	10	17	1	11	0	12	0	1	0	1	6	0	2	8	38
03/06/18 04:45-05:00	0	7	12	19	2	5	0	7	0	5	0	5	5	0	0	5	36
03/06/18 05:00-05:15	0	9	17	26	9	12	0	21	0	3	0	3	4	0	1	5	55
03/06/18 05:15-05:30	0	18	16	34	15	16	0	31	1	3	0	4	7	1	2	10	79
03/06/18 05:30-05:45	0	22	16	38	16	19	1	36	0	4	0	4	9	0	1	10	88
03/06/18 05:45-06:00	0	33	27	60	12	28	0	40	1	6	0	7	13	1	2	16	123
03/06/18 06:00-06:15	0	39	42	81	11	36	0	47	2	11	1	14	15	0	2	17	159
03/06/18 06:15-06:30	0	33	35	68	12	38	0	50	0	5	0	5	38	5	6	49	172
03/06/18 06:30-06:45	0	53	41	94	20	53	0	73	0	8	0	8	40	3	7	50	225
03/06/18 06:45-07:00	1	72	64	137	14	85	3	102	5	9	2	16	74	1	22	97	352
03/06/18 07:00-07:15	0	87	76	163	23	83	0	106	3	15	1	19	56	7	27	90	378
03/06/18 07:15-07:30	0	79	95	174	34	108	0	142	1	14	0	15	73	2	35	110	441
03/06/18 07:30-07:45	1	93	150	244	34	103	5	142	4	19	0	23	87	4	17	108	517
03/06/18 07:45-08:00	1	96	128	225	44	101	2	147	7	23	0	30	91	10	20	121	523
03/06/18 08:00-08:15	0	81	151	232	40	75	2	117	2	13	1	16	79	10	28	117	482
03/06/18 08:15-08:30	0	93	92	185	32	78	5	115	8	12	0	20	74	10	26	110	430
03/06/18 08:30-08:45	0	112	110	222	29	100	1	130	12	27	0	39	74	7	24	105	496
03/06/18 08:45-09:00	2	83	102	187	60	112	17	189	18	13	1	32	94	9	29	132	540
03/06/18 09:00-09:15	0	77	121	198	35	81	13	129	7	13	0	20	75	13	15	103	450
03/06/18 09:15-09:30	1	70	77	148	41	52	2	95	2	12	0	14	47	8	31	86	343
03/06/18 09:30-09:45	0	61	65	126	31	49	0	80	1	8	0	9	48	6	24	78	293
03/06/18 09:45-10:00	0	54	59	113	23	63	0	86	1	6	0	7	40	2	25	67	273
03/06/18 10:00-10:15	0	53	60	113	29	34	0	63	0	7	0	7	39	9	21	69	252
03/06/18 10:15-10:30	1	55	53	109	44	42	0	86	3	6	0	9	57	9	26	92	296
03/06/18 10:30-10:45	0	37	53	90	22	54	0	76	1	9	0	10	43	4	25	72	248
03/06/18 10:45-11:00	0	58	51	109	39	43	1	83	1	10	0	11	48	9	24	81	284
03/06/18 11:00-11:15	0	46	49	95	32	69	4	105	2	13	0	15	49	4	35	88	303
03/06/18 11:15-11:30	0	45	55	100	35	41	5	81	1	2	0	3	41	4	27	72	256
03/06/18 11:30-11:45	2	60	47	109	29	41	0	70	2	10	1	13	41	8	30	79	271
03/06/18 11:45-12:00	1	57	58	116	34	39	2	75	2	12	0	14	55	7	45	107	312
03/06/18 12:00-12:15	3	57	47	107	31	50	4	85	1	9	0	10	59	14	27	100	302
03/06/18 12:15-12:30	0	50	53	103	36	51	2	89	0	7	0	7	46	10	32	88	287
03/06/18 12:30-12:45	1	54	39	94	30	38	4	72	3	16	1	20	49	6	39	94	280
03/06/18 12:45-13:00	0	62	59	121	19	58	2	79	5	7	0	12	58	12	32	102	314
03/06/18 13:00-13:15	3	61	59	123	32	59	0	91	2	9	0	11	51	14	29	94	319
03/06/18 13:15-13:30	0	56	56	112	25	42	5	72	1	9	0	10	53	13	24	90	284

03/06/18 13:30-13:45	2	60	57	119	34	51	1	86	3	13	0	16	54	12	31	97	318
03/06/18 13:45-14:00	1	48	59	108	34	58	7	99	2	8	1	11	74	16	28	118	336
03/06/18 14:00-14:15	0	44	55	99	26	65	1	92	2	3	0	5	59	11	27	97	293
03/06/18 14:15-14:30	0	61	58	119	33	65	2	100	1	10	1	12	65	10	33	108	339
03/06/18 14:30-14:45	1	46	63	110	22	67	2	91	3	19	0	22	71	13	36	120	343
03/06/18 14:45-15:00	1	69	65	135	20	85	3	108	1	12	3	16	84	18	26	128	387
03/06/18 15:00-15:15	0	70	66	136	20	80	1	101	5	17	2	24	98	21	53	172	433
03/06/18 15:15-15:30	1	98	76	175	26	107	5	138	14	10	0	24	84	20	54	158	495
03/06/18 15:30-15:45	0	108	94	202	30	144	22	196	11	9	0	20	107	22	42	171	589
03/06/18 15:45-16:00	0	87	73	160	39	121	4	164	4	7	1	12	100	20	33	153	489
03/06/18 16:00-16:15	0	83	69	152	21	98	5	124	2	16	0	18	99	21	42	162	456
03/06/18 16:15-16:30	0	77	85	162	33	127	3	163	3	9	2	14	92	9	39	140	479
03/06/18 16:30-16:45	1	92	98	191	28	83	2	113	6	8	1	15	122	22	38	182	501
03/06/18 16:45-17:00	1	88	80	169	32	91	5	128	3	11	1	15	117	19	45	181	493
03/06/18 17:00-17:15	0	88	83	171	34	86	1	121	3	13	2	18	113	28	48	189	499
03/06/18 17:15-17:30	2	91	89	182	27	110	4	141	5	7	0	12	126	23	60	209	544
03/06/18 17:30-17:45	0	79	101	180	18	102	2	122	2	8	2	12	133	21	47	201	515
03/06/18 17:45-18:00	0	94	120	214	36	93	6	135	2	14	2	18	123	21	42	186	553
03/06/18 18:00-18:15	1	93	96	190	30	71	3	104	1	14	0	15	104	25	34	163	472
03/06/18 18:15-18:30	1	82	98	181	28	66	0	94	2	8	1	11	80	29	42	151	437
03/06/18 18:30-18:45	0	91	77	168	21	69	1	91	0	7	0	7	90	18	49	157	423
03/06/18 18:45-19:00	1	80	92	173	25	53	0	78	2	15	1	18	77	17	42	136	405
03/06/18 19:00-19:15	2	65	53	120	23	42	0	65	2	14	2	18	75	17	37	129	332
03/06/18 19:15-19:30	1	56	65	122	12	36	0	48	1	10	0	11	68	16	24	108	289
03/06/18 19:30-19:45	0	57	39	96	9	23	1	33	1	4	1	6	77	14	26	117	252
03/06/18 19:45-20:00	0	40	34	74	7	26	3	36	1	2	0	3	57	21	41	119	232
03/06/18 20:00-20:15	2	29	34	65	14	36	1	51	0	5	0	5	55	19	33	107	228
03/06/18 20:15-20:30	0	27	27	54	6	30	0	36	0	5	0	5	48	15	20	83	178
03/06/18 20:30-20:45	0	46	36	82	11	24	1	36	0	4	0	4	52	12	22	86	208
03/06/18 20:45-21:00	0	48	31	79	1	31	0	32	1	4	0	5	35	11	29	75	191
03/06/18 21:00-21:15	0	25	19	44	4	27	2	33	1	1	0	2	41	8	14	63	142
03/06/18 21:15-21:30	0	25	24	49	6	28	2	36	0	5	0	5	43	12	15	70	160
03/06/18 21:30-21:45	0	28	21	49	7	32	0	39	0	4	0	4	51	11	15	77	169
03/06/18 21:45-22:00	0	17	25	42	5	33	0	38	1	2	0	3	30	11	14	55	138
03/06/18 22:00-22:15	1	22	15	38	1	21	0	22	2	2	0	4	22	6	5	33	97
03/06/18 22:15-22:30	2	16	8	26	9	23	1	33	0	2	1	3	22	5	16	43	105
03/06/18 22:30-22:45	0	18	15	33	4	17	0	21	1	1	0	2	11	6	7	24	80
03/06/18 22:45-23:00	0	21	10	31	1	23	0	24	0	4	0	4	18	1	1	20	79
03/06/18 23:00-23:15	0	23	9	32	1	18	0	19	0	1	0	1	14	4	5	23	75
03/06/18 23:15-23:30	0	14	5	19	2	18	0	20	0	1	0	1	16	0	3	19	59
03/06/18 23:30-23:45	0	10	5	15	1	13	0	14	0	1	0	1	19	5	2	26	56
03/06/18 23:45-00:00	0	20	10	30	1	11	1	13	0	0	0	0	10	3	3	16	59
03/07/18 00:00-00:15	0	10	3	13	1	18	0	19	1	1	0	2	12	0	10	22	56
03/07/18 00:15-00:30	0	9	2	11	0	15	0	15	0	0	0	0	10	5	4	19	45
03/07/18 00:30-00:45	0	7	3	10	2	32	0	34	0	1	0	1	5	3	4	12	57
03/07/18 00:45-01:00	2	5	2	9	1	9	0	10	0	1	0	1	4	0	2	6	26
03/07/18 01:00-01:15	0	5	1	6	1	12	1	14	0	0	0	0	1	1	2	4	24
03/07/18 01:15-01:30	1	12	1	14	0	12	0	12	0	1	0	1	5	1	3	9	36
03/07/18 01:30-01:45	0	3	0	3	2	7	0	9	0	0	0	0	1	0	1	2	14
03/07/18 01:45-02:00	0	11	3	14	0	12	0	12	0	0	0	0	3	0	2	5	31
03/07/18 02:00-02:15	0	2	1	3	0	10	0	10	0	2	0	2	3	0	2	5	20
03/07/18 02:15-02:30	0	3	1	4	0	12	0	12	0	0	0	0	0	0	0	0	16
03/07/18 02:30-02:45	0	1	0	1	0	18	0	18	0	1	0	1	3	0	1	4	24
03/07/18 02:45-03:00	0	6	2	8	1	11	0	12	0	0	0	0	3	1	0	4	24
03/07/18 03:00-03:15	0	3	4	7	0	12	0	12	0	0	0	0	5	0	2	7	26
03/07/18 03:15-03:30	0	2	1	3	0	11	0	11	0	3	0	3	4	0	1	5	22
03/07/18 03:30-03:45	0	2	2	4	0	8	0	8	0	0	0	0	3	0	0	3	15
03/07/18 03:45-04:00	0	6	7	13	2	11	0	13	0	0	0	0	2	1	0	3	29
03/07/18 04:00-04:15	0	5	4	9	2	7	0	9	0	3	0	3	3	0	0	3	24
03/07/18 04:15-04:30	0	3	7	10	2	13	0	15	0	1	1	2	5	1	0	6	33

03/07/18 04:30-04:45	0	9	11	20	2	8	0	10	0	1	0	1	5	0	0	5	36
03/07/18 04:45-05:00	1	8	13	22	5	10	0	15	0	2	0	2	4	0	0	4	43
03/07/18 05:00-05:15	0	13	17	30	10	17	0	27	0	3	0	3	8	0	2	10	70
03/07/18 05:15-05:30	0	15	13	28	8	13	0	21	1	3	0	4	10	0	1	11	64
03/07/18 05:30-05:45	0	26	20	46	12	17	1	30	1	4	0	5	14	1	4	19	100
03/07/18 05:45-06:00	0	24	28	52	15	31	0	46	0	6	0	6	14	3	4	21	125
03/07/18 06:00-06:15	0	30	38	68	15	32	0	47	1	7	0	8	16	2	2	20	143
03/07/18 06:15-06:30	0	41	36	77	18	43	0	61	0	4	0	4	37	3	11	51	193
03/07/18 06:30-06:45	0	54	45	99	17	59	0	76	0	9	0	9	28	4	10	42	226
03/07/18 06:45-07:00	1	78	69	148	12	79	4	95	2	5	1	8	52	1	22	75	326
03/07/18 07:00-07:15	0	90	79	169	25	102	1	128	2	7	0	9	65	2	19	86	392
03/07/18 07:15-07:30	0	71	68	139	34	96	1	131	3	18	0	21	70	3	22	95	386
03/07/18 07:30-07:45	0	86	139	225	35	85	3	123	4	17	0	21	66	1	24	91	460
03/07/18 07:45-08:00	0	84	113	197	47	81	0	128	3	19	0	22	82	12	30	124	471
03/07/18 08:00-08:15	0	88	130	218	37	78	2	117	4	15	0	19	75	7	19	101	455
03/07/18 08:15-08:30	2	86	80	168	32	84	0	116	5	16	1	22	76	8	28	112	418
03/07/18 08:30-08:45	2	100	115	217	30	91	1	122	9	13	0	22	72	7	24	103	464
03/07/18 08:45-09:00	0	96	102	198	62	128	20	210	23	12	0	35	70	8	34	112	555
03/07/18 09:00-09:15	3	69	99	171	46	83	14	143	8	11	1	20	74	7	23	104	438
03/07/18 09:15-09:30	0	82	75	157	34	55	3	92	2	7	0	9	61	8	25	94	352
03/07/18 09:30-09:45	0	54	62	116	25	42	2	69	0	17	0	17	38	3	22	63	265
03/07/18 09:45-10:00	1	61	61	123	34	45	2	81	4	4	0	8	46	7	27	80	292
03/07/18 10:00-10:15	0	44	56	100	33	48	0	81	2	9	1	12	51	10	25	86	279
03/07/18 10:15-10:30	0	51	57	108	31	46	0	77	2	11	0	13	30	1	17	48	246
03/07/18 10:30-10:45	1	51	50	102	21	45	5	71	2	7	0	9	55	3	16	74	256
03/07/18 10:45-11:00	0	58	56	114	31	43	1	75	2	10	0	12	47	10	19	76	277
03/07/18 11:00-11:15	1	49	41	91	23	44	1	68	3	4	0	7	41	4	38	83	249
03/07/18 11:15-11:30	1	57	51	109	20	65	2	87	4	7	0	11	35	4	36	75	282
03/07/18 11:30-11:45	1	62	44	107	30	46	3	79	2	8	0	10	50	14	37	101	297
03/07/18 11:45-12:00	0	63	56	119	34	47	3	84	2	8	0	10	42	6	38	86	299
03/07/18 12:00-12:15	2	62	62	126	46	51	3	100	5	7	0	12	45	14	38	97	335
03/07/18 12:15-12:30	1	53	47	101	34	58	1	93	0	7	0	7	54	7	37	98	299
03/07/18 12:30-12:45	2	63	56	121	21	57	1	79	1	6	2	9	57	11	36	104	313
03/07/18 12:45-13:00	1	61	57	119	32	44	1	77	1	8	2	11	62	15	20	97	304
03/07/18 13:00-13:15	2	60	56	118	28	44	2	74	2	11	0	13	66	8	23	97	302
03/07/18 13:15-13:30	0	46	52	98	23	62	3	88	3	11	0	14	52	12	34	98	298
03/07/18 13:30-13:45	1	54	44	99	26	62	4	92	3	15	0	18	73	9	31	113	322
03/07/18 13:45-14:00	1	40	57	98	24	67	4	95	2	11	3	16	53	14	30	97	306
03/07/18 14:00-14:15	0	45	50	95	24	79	1	104	4	6	1	11	60	7	31	98	308
03/07/18 14:15-14:30	0	49	49	98	15	62	1	78	2	7	0	9	64	9	18	91	276
03/07/18 14:30-14:45	0	54	49	103	24	79	1	104	0	12	0	12	66	15	40	121	340
03/07/18 14:45-15:00	0	73	56	129	27	84	2	113	2	12	1	15	77	15	33	125	382
03/07/18 15:00-15:15	0	89	70	159	23	84	3	110	5	11	0	16	57	12	38	107	392
03/07/18 15:15-15:30	1	98	94	193	21	107	4	132	16	10	1	27	115	20	47	182	534
03/07/18 15:30-15:45	5	116	85	206	48	168	36	252	11	12	0	23	97	16	45	158	639
03/07/18 15:45-16:00	0	99	83	182	40	97	7	144	6	12	1	19	115	17	44	176	521
03/07/18 16:00-16:15	1	93	63	157	35	123	3	161	1	12	0	13	112	24	38	174	505
03/07/18 16:15-16:30	1	90	72	163	31	102	5	138	0	15	0	15	108	11	44	163	479
03/07/18 16:30-16:45	0	104	92	196	30	117	4	151	1	18	2	21	122	26	58	206	574
03/07/18 16:45-17:00	0	88	87	175	32	101	5	138	3	11	0	14	114	21	44	179	506
03/07/18 17:00-17:15	1	80	91	172	28	109	3	140	4	12	2	18	139	18	46	203	533
03/07/18 17:15-17:30	0	89	97	186	33	113	3	149	3	15	0	18	145	17	46	208	561
03/07/18 17:30-17:45	2	112	94	208	29	138	3	170	3	9	2	14	201	24	43	268	660
03/07/18 17:45-18:00	0	111	112	223	35	87	4	126	7	13	1	21	159	23	57	239	609
03/07/18 18:00-18:15	0	69	87	156	34	81	2	117	3	7	1	11	142	19	43	204	488
03/07/18 18:15-18:30	0	84	72	156	31	79	2	112	0	14	1	15	119	25	45	189	472
03/07/18 18:30-18:45	1	87	86	174	25	79	1	105	2	13	0	15	104	19	54	177	471
03/07/18 18:45-19:00	0	57	100	157	26	59	2	87	1	12	0	13	86	18	37	141	398
03/07/18 19:00-19:15	1	55	68	124	13	37	2	52	1	7	2	10	68	22	30	120	306
03/07/18 19:15-19:30	0	53	54	107	15	39	0	54	5	8	0	13	56	22	37	115	289

03/07/18 19:30-19:45	0	28	36	64	13	26	5	44	0	4	0	4	61	17	27	105	217
03/07/18 19:45-20:00	0	42	41	83	11	36	2	49	4	13	0	17	43	16	38	97	246
03/07/18 20:00-20:15	0	45	36	81	9	40	1	50	1	5	0	6	51	16	23	90	227
03/07/18 20:15-20:30	0	37	27	64	9	28	3	40	2	6	0	8	60	18	32	110	222
03/07/18 20:30-20:45	0	26	23	49	5	26	2	33	0	8	0	8	51	8	12	71	161
03/07/18 20:45-21:00	0	26	27	53	7	23	1	31	0	4	0	4	51	13	21	85	173
03/07/18 21:00-21:15	0	31	21	52	6	21	2	29	0	3	0	3	48	16	20	84	168
03/07/18 21:15-21:30	1	47	21	69	7	26	0	33	1	2	0	3	38	10	20	68	173
03/07/18 21:30-21:45	0	25	23	48	6	25	2	33	1	1	1	3	43	14	17	74	158
03/07/18 21:45-22:00	1	25	19	45	8	27	0	35	3	1	1	5	35	9	17	61	146
03/07/18 22:00-22:15	1	21	20	42	2	28	1	31	0	5	1	6	25	9	20	54	133
03/07/18 22:15-22:30	1	29	15	45	3	24	1	28	2	0	0	2	26	9	8	43	118
03/07/18 22:30-22:45	0	15	15	30	7	21	0	28	0	5	0	5	16	2	5	23	86
03/07/18 22:45-23:00	0	15	6	21	1	22	0	23	1	1	1	3	12	5	6	23	70
03/07/18 23:00-23:15	2	15	12	29	1	15	0	16	0	3	0	3	12	1	6	19	67
03/07/18 23:15-23:30	0	11	8	19	2	20	0	22	1	0	0	1	16	4	7	27	69
03/07/18 23:30-23:45	0	10	9	19	0	11	0	11	0	1	0	1	16	1	7	24	55
03/07/18 23:45-00:00	0	12	9	21	3	14	0	17	0	1	0	1	9	5	5	19	58
03/08/18 00:00-00:15	0	14	8	22	0	15	0	15	0	1	0	1	6	0	3	9	47
03/08/18 00:15-00:30	2	4	6	12	3	19	0	22	0	0	0	0	4	1	4	9	43
03/08/18 00:30-00:45	1	7	2	10	2	20	0	22	0	0	0	0	3	4	2	9	41
03/08/18 00:45-01:00	0	11	4	15	1	11	0	12	0	0	0	0	8	1	1	10	37
03/08/18 01:00-01:15	0	6	4	10	3	14	0	17	0	1	0	1	8	1	2	11	39
03/08/18 01:15-01:30	0	9	3	12	1	12	0	13	0	0	0	0	2	1	2	5	30
03/08/18 01:30-01:45	0	9	1	10	1	7	1	9	0	1	0	1	1	0	2	3	23
03/08/18 01:45-02:00	0	13	0	13	1	4	1	6	0	0	0	0	3	1	2	6	25
03/08/18 02:00-02:15	0	4	0	4	0	6	0	6	0	0	0	0	1	0	0	1	11
03/08/18 02:15-02:30	0	2	3	5	0	11	0	11	0	0	0	0	1	1	1	3	19
03/08/18 02:30-02:45	0	4	0	4	0	12	0	12	0	0	0	0	3	1	0	4	20
03/08/18 02:45-03:00	0	7	3	10	1	10	0	11	0	0	0	0	1	0	0	1	22
03/08/18 03:00-03:15	0	3	1	4	1	7	0	8	0	0	0	0	2	0	1	3	15
03/08/18 03:15-03:30	0	1	6	7	1	8	0	9	0	0	0	0	2	0	0	2	18
03/08/18 03:30-03:45	0	7	6	13	2	10	0	12	0	1	0	1	1	1	2	4	30
03/08/18 03:45-04:00	0	5	7	12	1	12	0	13	0	0	0	0	2	0	0	2	27
03/08/18 04:00-04:15	0	3	6	9	1	8	0	9	0	3	0	3	1	0	1	2	23
03/08/18 04:15-04:30	0	8	4	12	2	5	0	7	0	2	0	2	5	0	0	5	26
03/08/18 04:30-04:45	0	8	4	12	1	12	0	13	0	2	0	2	8	0	0	8	35
03/08/18 04:45-05:00	0	7	17	24	3	10	0	13	0	4	0	4	6	1	0	7	48
03/08/18 05:00-05:15	0	13	25	38	8	15	0	23	0	1	0	1	6	0	1	7	69
03/08/18 05:15-05:30	0	12	8	20	6	16	0	22	1	0	0	1	11	1	0	12	55
03/08/18 05:30-05:45	0	19	19	38	12	18	0	30	0	5	1	6	13	0	1	14	88
03/08/18 05:45-06:00	0	33	35	68	15	29	1	45	0	5	0	5	17	3	5	25	143
03/08/18 06:00-06:15	0	28	42	70	14	39	0	53	2	9	0	11	22	2	4	28	162
03/08/18 06:15-06:30	0	43	31	74	13	41	0	54	0	6	0	6	29	3	9	41	175
03/08/18 06:30-06:45	0	43	37	80	15	55	1	71	0	12	1	13	25	4	12	41	205
03/08/18 06:45-07:00	2	65	56	123	21	88	1	110	2	4	1	7	50	5	18	73	313
03/08/18 07:00-07:15	1	77	70	148	29	98	0	127	2	6	0	8	76	3	12	91	374
03/08/18 07:15-07:30	0	95	92	187	39	97	1	137	0	14	1	15	61	1	22	84	423
03/08/18 07:30-07:45	0	77	148	225	39	101	5	145	5	14	0	19	92	6	19	117	506
03/08/18 07:45-08:00	1	100	124	225	42	88	2	132	7	36	0	43	87	6	27	120	520
03/08/18 08:00-08:15	0	82	145	227	38	88	2	128	2	7	0	9	95	8	22	125	489
03/08/18 08:15-08:30	0	87	80	167	26	88	1	115	4	12	1	17	67	7	22	96	395
03/08/18 08:30-08:45	0	106	123	229	35	94	1	130	11	23	1	35	84	11	21	116	510
03/08/18 08:45-09:00	1	91	109	201	64	117	17	198	21	12	0	33	79	8	23	110	542
03/08/18 09:00-09:15	1	85	106	192	64	89	16	169	5	13	0	18	61	7	16	84	463
03/08/18 09:15-09:30	0	64	79	143	34	32	3	69	4	18	0	22	49	6	20	75	309
03/08/18 09:30-09:45	2	53	61	116	37	47	2	86	6	11	0	17	50	9	19	78	297
03/08/18 09:45-10:00	0	52	62	114	28	47	0	75	6	6	2	14	56	8	30	94	297
03/08/18 10:00-10:15	1	49	60	110	25	34	1	60	3	8	1	12	50	5	19	74	256
03/08/18 10:15-10:30	1	51	69	121	27	38	3	68	3	9	1	13	41	10	14	65	267

03/08/18 10:30-10:45	1	58	62	121	37	48	1	86	2	8	2	12	38	10	23	71	290
03/08/18 10:45-11:00	2	43	53	98	19	40	2	61	2	7	0	9	37	11	39	87	255
03/08/18 11:00-11:15	1	45	43	89	30	42	1	73	2	9	0	11	53	8	26	87	260
03/08/18 11:15-11:30	0	52	42	94	29	53	0	82	1	11	0	12	52	9	31	92	280
03/08/18 11:30-11:45	1	62	64	127	31	37	1	69	2	7	0	9	44	7	24	75	280
03/08/18 11:45-12:00	3	55	48	106	34	42	2	78	3	10	0	13	65	6	30	101	298
03/08/18 12:00-12:15	0	48	47	95	39	61	3	103	1	12	0	13	50	13	48	111	322
03/08/18 12:15-12:30	0	55	55	110	28	38	2	68	0	8	0	8	48	10	33	91	277
03/08/18 12:30-12:45	1	52	47	100	31	42	0	73	3	14	0	17	58	10	43	111	301
03/08/18 12:45-13:00	0	61	63	124	25	39	1	65	1	9	0	10	59	14	29	102	301
03/08/18 13:00-13:15	3	59	54	116	23	48	2	73	1	8	0	9	52	15	47	114	312
03/08/18 13:15-13:30	1	39	52	92	33	50	2	85	2	5	0	7	56	15	31	102	286
03/08/18 13:30-13:45	0	66	66	132	27	54	3	84	3	7	1	11	54	6	45	105	332
03/08/18 13:45-14:00	2	62	56	120	30	71	1	102	0	13	1	14	57	2	40	99	335
03/08/18 14:00-14:15	0	61	48	109	31	73	3	107	3	3	0	6	79	8	40	127	349
03/08/18 14:15-14:30	1	43	52	96	22	64	4	90	1	9	0	10	64	13	19	96	292
03/08/18 14:30-14:45	2	64	50	116	28	92	4	124	5	9	1	15	70	12	38	120	375
03/08/18 14:45-15:00	0	68	58	126	27	76	3	106	1	10	1	12	85	7	39	131	375
03/08/18 15:00-15:15	0	71	62	133	31	82	6	119	3	9	3	15	75	19	36	130	397
03/08/18 15:15-15:30	1	92	84	177	29	111	6	146	16	11	1	28	110	18	46	174	525
03/08/18 15:30-15:45	0	112	76	188	39	131	26	196	13	10	1	24	107	27	34	168	576
03/08/18 15:45-16:00	2	91	81	174	31	99	5	135	8	11	0	19	97	24	56	177	505
03/08/18 16:00-16:15	0	105	92	197	32	104	4	140	2	18	1	21	116	30	52	198	556
03/08/18 16:15-16:30	4	79	80	163	45	108	5	158	0	10	0	10	101	24	38	163	494
03/08/18 16:30-16:45	0	90	77	167	31	108	1	140	11	13	2	26	102	18	37	157	490
03/08/18 16:45-17:00	2	105	98	205	26	92	8	126	3	9	3	15	118	21	47	186	532
03/08/18 17:00-17:15	1	97	84	182	35	115	6	156	3	14	5	22	139	22	40	201	561
03/08/18 17:15-17:30	1	87	80	168	26	79	7	112	4	15	1	20	116	24	50	190	490
03/08/18 17:30-17:45	0	90	91	181	35	118	3	156	4	20	0	24	151	19	38	208	569
03/08/18 17:45-18:00	1	103	108	212	34	98	3	135	4	15	1	20	125	18	43	186	553
03/08/18 18:00-18:15	2	64	78	144	32	76	5	113	1	14	2	17	104	30	35	169	443
03/08/18 18:15-18:30	0	80	81	161	33	56	2	91	1	18	1	20	73	13	47	133	405
03/08/18 18:30-18:45	2	83	97	182	22	63	3	88	0	10	0	10	108	27	47	182	462
03/08/18 18:45-19:00	1	61	85	147	22	44	2	68	2	14	3	19	87	21	35	143	377
03/08/18 19:00-19:15	1	58	70	129	24	46	1	71	0	15	2	17	67	17	43	127	344
03/08/18 19:15-19:30	1	55	47	103	15	34	0	49	0	10	0	10	59	15	32	106	268
03/08/18 19:30-19:45	0	38	50	88	15	35	1	51	0	7	1	8	58	19	33	110	257
03/08/18 19:45-20:00	0	42	34	76	22	29	0	51	0	3	0	3	36	20	36	92	222
03/08/18 20:00-20:15	1	43	31	75	6	43	1	50	1	6	1	8	70	15	25	110	243
03/08/18 20:15-20:30	0	38	35	73	8	37	0	45	5	4	2	11	49	20	21	90	219
03/08/18 20:30-20:45	1	48	28	77	4	32	2	38	1	3	1	5	41	16	22	79	199
03/08/18 20:45-21:00	1	23	30	54	6	29	1	36	1	2	0	3	47	12	25	84	177
03/08/18 21:00-21:15	0	23	27	50	7	20	3	30	0	4	1	5	44	15	33	92	177
03/08/18 21:15-21:30	0	30	22	52	13	29	2	44	3	4	1	8	40	14	19	73	177
03/08/18 21:30-21:45	1	26	23	50	7	23	0	30	1	6	1	8	50	10	15	75	163
03/08/18 21:45-22:00	0	27	26	53	7	21	0	28	0	2	0	2	26	9	18	53	136
03/08/18 22:00-22:15	0	24	11	35	3	31	0	34	0	4	1	5	29	6	13	48	122
03/08/18 22:15-22:30	0	15	18	33	11	16	1	28	0	3	0	3	18	4	9	31	95
03/08/18 22:30-22:45	0	25	29	54	4	22	0	26	2	1	0	3	23	5	9	37	120
03/08/18 22:45-23:00	0	20	8	28	2	17	1	20	0	1	1	2	13	3	7	23	73
03/08/18 23:00-23:15	0	15	4	19	4	20	0	24	0	3	0	3	20	1	13	34	80
03/08/18 23:15-23:30	0	11	12	23	3	25	0	28	0	0	0	0	13	4	6	23	74
03/08/18 23:30-23:45	1	13	10	24	1	18	0	19	0	1	0	1	13	0	6	19	63
03/08/18 23:45-00:00	0	21	5	26	2	12	0	14	0	0	0	0	12	3	5	20	60
Summary	139	13404	13424	26967	5323	13922	576	19821	600	2035	115	2750	14104	2528	6131	22763	72301

National Data & Surveying Services Intersection Turning Movement Count

Location: Fiddymment Rd & Harvey Way

City: Roseville

Control: 1-Way Stop(WB)

Project ID: 18-07057-002

Date: 2/27/2018

Total

NS/EW Streets:	Fiddymment Rd				Fiddymment Rd				Harvey Way				Harvey Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	1 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0.5 WL	0.5 WT	1 WR	0 WU	
6:00 AM	0	47	1	0	0	58	0	0	0	0	0	0	0	0	1	0	107
6:15 AM	0	62	0	0	1	66	0	0	0	0	0	0	2	0	0	0	131
6:30 AM	0	80	1	0	2	100	0	0	0	0	0	0	5	0	0	0	188
6:45 AM	0	131	3	0	2	103	0	0	0	0	0	0	0	0	1	0	240
7:00 AM	0	104	7	0	0	143	0	0	0	0	0	0	2	0	0	0	256
7:15 AM	0	99	1	0	0	136	0	1	0	0	0	0	2	0	2	0	241
7:30 AM	0	124	2	0	1	138	0	0	0	0	0	0	4	0	2	0	271
7:45 AM	0	109	2	0	1	110	0	0	0	0	0	0	1	0	4	0	227
8:00 AM	0	100	2	0	1	123	0	2	0	0	0	0	3	0	1	0	232
8:15 AM	0	122	1	0	1	105	0	0	0	0	0	0	2	0	5	0	236
8:30 AM	0	132	2	0	7	203	0	0	0	0	0	0	2	0	12	0	358
8:45 AM	0	90	2	0	3	120	0	0	0	0	0	0	2	0	2	0	219
9:00 AM																	0
9:15 AM																	0
9:30 AM																	0
9:45 AM																	0
TOTAL VOLUMES :	NL 0	NT 1200	NR 24	NU 0	SL 19	ST 1405	SR 0	SU 3	EL 0	ET 0	ER 0	EU 0	WL 25	WT 0	WR 30	WU 0	TOTAL 2706
APPROACH %'s :	0.00%	98.04%	1.96%	0.00%	1.33%	98.46%	0.00%	0.21%					45.45%	0.00%	54.55%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	463	7	0	10	541	0	2	0	0	0	0	8	0	22	0	1053
PEAK HR FACTOR :	0.000	0.877	0.875	0.000	0.357	0.666	0.000	0.250	0.000	0.000	0.000	0.000	0.667	0.000	0.458	0.000	0.735
	0.877				0.658								0.536				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	1 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0.5 WL	0.5 WT	1 WR	0 WU	
4:00 PM	0	132	0	0	0	142	0	0	0	0	0	0	0	0	0	0	274
4:15 PM	0	128	0	0	1	131	0	0	0	0	0	0	2	0	5	0	267
4:30 PM	0	113	0	0	1	142	0	0	0	0	0	0	2	0	2	0	260
4:45 PM	0	126	0	0	7	124	0	0	0	0	0	0	0	0	1	0	258
5:00 PM	0	152	2	0	3	123	0	0	0	0	0	0	1	0	3	0	284
5:15 PM	0	169	7	0	0	147	0	0	0	0	0	0	3	0	3	0	329
5:30 PM	0	124	1	0	2	125	0	0	0	0	0	0	0	0	3	0	255
5:45 PM	0	132	7	1	2	120	0	0	0	0	0	0	1	0	0	0	263
6:00 PM	0	127	1	0	2	102	0	0	0	0	0	0	1	0	1	0	234
6:15 PM	0	109	4	0	0	85	0	1	0	0	0	0	0	0	1	0	200
6:30 PM	0	106	2	0	2	82	0	0	0	0	0	0	0	0	0	0	192
6:45 PM	0	76	1	0	1	69	0	0	0	0	0	0	0	0	0	0	147
TOTAL VOLUMES :	NL 0	NT 1494	NR 25	NU 1	SL 21	ST 1392	SR 0	SU 1	EL 0	ET 0	ER 0	EU 0	WL 10	WT 0	WR 19	WU 0	TOTAL 2963
APPROACH %'s :	0.00%	98.29%	1.64%	0.07%	1.49%	98.44%	0.00%	0.07%					34.48%	0.00%	65.52%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	560	9	0	11	536	0	0	0	0	0	0	6	0	9	0	1131
PEAK HR FACTOR :	0.000	0.828	0.321	0.000	0.393	0.912	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.750	0.000	0.859
	0.808				0.930								0.625				

National Data & Surveying Services Intersection Turning Movement Count

Location: Oak Meadow Dr & Harvey Way

City: Roseville

Control: 1-Way Stop(NB)

Project ID: 18-07057-003

Date: 2/27/2018

Total

NS/EW Streets:	Oak Meadow Dr				Oak Meadow Dr				Harvey Way				Harvey Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
6:15 AM	0	0	0	1	0	0	0	0	0	1	0	0	0	3	0	0	5
6:30 AM	0	0	0	1	0	0	0	0	0	2	1	0	1	4	0	0	9
6:45 AM	0	0	1	0	0	0	0	0	0	5	0	0	1	1	0	0	8
7:00 AM	0	0	1	0	0	0	0	0	0	5	1	0	2	2	0	0	11
7:15 AM	0	0	3	0	0	0	0	0	0	2	0	0	2	4	0	0	11
7:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	6	0	0	9
7:45 AM	0	0	0	0	0	0	0	0	0	2	0	1	0	4	0	0	7
8:00 AM	0	0	1	0	0	0	0	0	0	3	0	0	0	4	0	0	8
8:15 AM	0	0	1	0	0	0	0	0	0	2	0	0	0	8	0	0	11
8:30 AM	0	0	3	0	0	0	0	0	0	9	0	0	1	14	0	0	27
8:45 AM	0	0	1	0	0	0	0	0	0	5	0	0	1	3	0	0	10
9:00 AM																	0
9:15 AM																	0
9:30 AM																	0
9:45 AM																	0
TOTAL VOLUMES :	NL 0	NT 0	NR 11	NU 2	SL 0	ST 0	SR 0	SU 0	EL 0	ET 40	ER 2	EU 1	WL 8	WT 54	WR 0	WU 0	TOTAL 118
APPROACH %'s :	0.00%	0.00%	84.62%	15.38%					0.00%	93.02%	4.65%	2.33%	12.90%	87.10%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	6	0	0	0	0	0	0	19	0	0	2	29	0	0	56
PEAK HR FACTOR :	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.528	0.000	0.000	0.500	0.518	0.000	0.000	0.519
			0.500							0.528				0.517			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
4:00 PM	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	3
4:15 PM	0	0	1	0	0	0	0	0	0	3	0	0	0	7	0	0	11
4:30 PM	0	0	2	0	0	0	0	0	0	3	0	0	0	4	0	0	9
4:45 PM	0	0	0	0	0	0	0	0	0	8	0	0	0	1	0	0	9
5:00 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	1	10
5:15 PM	0	0	0	0	0	0	0	0	0	5	0	0	3	4	0	0	12
5:30 PM	1	0	2	0	0	0	0	0	0	5	0	0	0	3	0	0	11
5:45 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	2	0	0	8
6:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
6:15 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
6:30 PM	0	0	0	0	0	0	0	0	0	5	0	0	1	0	0	0	6
6:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
TOTAL VOLUMES :	NL 1	NT 0	NR 6	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 50	ER 0	EU 0	WL 5	WT 28	WR 0	WU 1	TOTAL 91
APPROACH %'s :	14.29%	0.00%	85.71%	0.00%					0.00%	100.00%	0.00%	0.00%	14.71%	82.35%	0.00%	2.94%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	1	0	2	0	0	0	0	0	0	23	0	0	3	12	0	1	42
PEAK HR FACTOR :	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.719	0.000	0.000	0.250	0.750	0.000	0.250	0.875
			0.250							0.719				0.571			

National Data & Surveying Services Intersection Turning Movement Count

Location: Orchard View Rd & Harvey Way

City: Roseville

Control: 2-Way Stop(EB/WB)

Project ID: 18-07057-004

Date: 2/27/2018

Total

NS/EW Streets:	Orchard View Rd				Orchard View Rd				Harvey Way				Harvey Way				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
6:00 AM	0	0	1	0	0	2	0	0	0	0	0	0	5	1	0	0	9
6:15 AM	1	0	2	0	0	1	0	0	0	0	1	0	5	2	0	0	12
6:30 AM	2	1	1	0	0	1	0	0	0	0	2	0	5	1	0	0	13
6:45 AM	6	0	3	0	0	3	0	0	0	0	2	0	8	0	0	0	22
7:00 AM	3	0	2	0	0	3	0	0	0	0	1	0	8	0	0	0	17
7:15 AM	3	1	1	0	0	7	1	0	0	0	7	0	14	2	0	0	36
7:30 AM	0	0	0	0	0	2	0	0	0	1	1	0	10	3	0	0	17
7:45 AM	2	0	5	0	0	6	0	0	0	0	2	0	9	2	0	0	26
8:00 AM	2	0	4	0	0	3	0	0	0	0	1	0	7	1	0	0	18
8:15 AM	2	2	3	0	0	5	3	1	0	1	2	0	6	4	0	0	29
8:30 AM	3	1	1	0	0	6	0	0	0	6	5	0	4	10	0	0	36
8:45 AM	3	0	2	0	0	5	0	0	1	5	1	0	9	1	0	0	27
9:00 AM																	0
9:15 AM																	0
9:30 AM																	0
9:45 AM																	0
TOTAL VOLUMES :	NL 27	NT 5	NR 25	NU 0	SL 0	ST 44	SR 4	SU 1	EL 1	ET 13	ER 25	EU 0	WL 90	WT 27	WR 0	WU 0	TOTAL 262
APPROACH %'s :	47.37%	8.77%	43.86%	0.00%	0.00%	89.80%	8.16%	2.04%	2.56%	33.33%	64.10%	0.00%	76.92%	23.08%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	10	3	10	0	0	19	3	1	1	12	9	0	26	16	0	0	110
PEAK HR FACTOR :	0.833	0.375	0.625	0.000	0.000	0.792	0.250	0.250	0.250	0.500	0.450	0.000	0.722	0.400	0.000	0.000	0.764
	0.821				0.639				0.500				0.750				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
4:00 PM	5	2	3	0	0	0	0	0	1	0	5	0	4	0	0	0	20
4:15 PM	6	1	7	0	0	3	0	0	0	0	1	0	2	3	0	0	23
4:30 PM	1	1	11	0	0	2	0	0	0	0	3	0	7	4	0	0	29
4:45 PM	5	2	10	0	0	0	0	0	0	9	0	0	6	0	0	0	32
5:00 PM	4	1	7	0	0	3	0	0	0	2	3	0	4	2	1	0	27
5:15 PM	8	0	5	0	0	4	1	0	1	3	4	0	4	0	0	0	30
5:30 PM	5	1	11	0	0	4	1	0	2	3	2	1	3	0	0	0	33
5:45 PM	7	2	11	0	0	0	0	0	2	2	2	0	9	0	0	0	35
6:00 PM	3	1	10	0	0	1	0	0	0	2	3	0	4	1	0	0	25
6:15 PM	6	3	11	0	1	1	0	0	1	1	2	0	3	0	0	0	29
6:30 PM	6	1	7	0	0	2	0	0	0	4	2	0	4	0	0	0	26
6:45 PM	1	1	5	0	0	2	0	0	0	1	2	0	11	1	0	0	24
TOTAL VOLUMES :	NL 57	NT 16	NR 98	NU 0	SL 1	ST 22	SR 2	SU 0	EL 7	ET 27	ER 29	EU 1	WL 61	WT 11	WR 1	WU 0	TOTAL 333
APPROACH %'s :	33.33%	9.36%	57.31%	0.00%	4.00%	88.00%	8.00%	0.00%	10.94%	42.19%	45.31%	1.56%	83.56%	15.07%	1.37%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	24	4	34	0	0	11	2	0	5	10	11	1	20	2	1	0	125
PEAK HR FACTOR :	0.750	0.500	0.773	0.000	0.000	0.688	0.500	0.000	0.625	0.833	0.688	0.250	0.556	0.250	0.250	0.000	0.893
	0.775				0.650				0.844				0.639				

Attachment B

Signalized Intersection Queuing and
Operations Synchro Analysis Worksheets

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Conditions

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	55	83	5	365	42	117	3	405	508	238	534	32
v/c Ratio	0.10	0.14	0.01	0.58	0.07	0.27	0.01	0.39	0.62	0.44	0.32	0.04
Control Delay	27.5	33.5	0.0	32.1	32.5	1.5	30.3	22.0	6.0	32.8	15.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	33.5	0.0	32.1	32.5	1.5	30.3	22.0	6.0	32.8	15.7	0.1
Queue Length 50th (ft)	10	12	0	74	8	0	0	73	0	49	68	0
Queue Length 95th (ft)	24	26	0	142	27	1	4	132	69	78	137	0
Internal Link Dist (ft)	462			385			709			365		
Turn Bay Length (ft)	235		235	235			245		245	245		245
Base Capacity (vph)	1555	1567	627	1640	1199	672	1058	1799	1054	1058	1856	911
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.05	0.01	0.22	0.04	0.17	0.00	0.23	0.48	0.22	0.29	0.04
Intersection Summary												

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Conditions

AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	62	4	347	40	111	3	369	462	169	379	23
Future Volume (veh/h)	41	62	4	347	40	111	3	369	462	169	379	23
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	55	83	5	365	42	117	3	405	508	238	534	32
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.75	0.75	0.75	0.95	0.95	0.95	0.91	0.91	0.91	0.71	0.71	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	400	125	490	365	163	852	1366	611	412	818	366
Arrive On Green	0.09	0.08	0.08	0.14	0.10	0.10	0.25	0.39	0.39	0.12	0.23	0.23
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	55	83	5	365	42	117	3	405	508	238	534	32
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	1.1	1.1	0.1	7.6	0.8	3.8	0.0	5.9	21.7	4.9	10.2	1.2
Cycle Q Clear(g_c), s	1.1	1.1	0.1	7.6	0.8	3.8	0.0	5.9	21.7	4.9	10.2	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	400	125	490	365	163	852	1366	611	412	818	366
V/C Ratio(X)	0.18	0.21	0.04	0.74	0.11	0.72	0.00	0.30	0.83	0.58	0.65	0.09
Avail Cap(c_a), veh/h	922	1363	424	1429	1043	467	922	1565	700	922	1565	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.3	32.2	9.6	30.7	30.4	16.7	21.1	15.9	20.7	31.1	26.0	22.5
Incr Delay (d2), s/veh	0.1	0.3	0.2	0.9	0.2	8.3	0.0	0.2	8.9	0.5	1.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.5	0.1	3.7	0.4	2.5	0.0	2.9	10.9	2.3	5.2	0.5
LnGrp Delay(d),s/veh	31.4	32.5	9.8	31.6	30.6	25.0	21.1	16.1	29.6	31.5	27.7	22.7
LnGrp LOS	C	C	A	C	C	C	C	B	C	C	C	C
Approach Vol, veh/h		143			524			916			804	
Approach Delay, s/veh		31.3			30.0			23.6			28.6	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.9	34.8	14.6	12.3	24.5	23.3	13.2	13.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.4	6.0	* 6	6.4	* 6				
Max Green Setting (Gmax), s	20.0	33.0	31.0	20.0	20.0	* 33	20.0	* 22				
Max Q Clear Time (g_c+I1), s	6.9	23.7	9.6	3.1	2.0	12.2	3.1	5.8				
Green Ext Time (p_c), s	0.5	5.2	1.0	0.5	8.0	5.1	0.5	0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			27.2									
HCM 2010 LOS			C									
Notes												

The Plaza at Blue Oaks
3: Blue Oaks Boulevard & Oak Meadow Drive

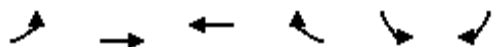
Existing Conditions

AM Peak

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	691	496	4	0	2
Future Vol, veh/h	2	691	496	4	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	265	-	-	240	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	93	93	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	751	533	4	0	3
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	533	0	-	0	838	267
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	305	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	653	-	-	-	374	623
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	661	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	653	-	-	-	373	623
Mov Cap-2 Maneuver	-	-	-	-	373	-
Stage 1	-	-	-	-	462	-
Stage 2	-	-	-	-	659	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		10.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	653	-	-	-	623	
HCM Lane V/C Ratio	0.003	-	-	-	0.005	
HCM Control Delay (s)	10.5	-	-	-	10.8	
HCM Lane LOS	B	-	-	-	B	
HCM 95th %tile O(veh)	0	-	-	-	0	

The Plaza at Blue Oaks
4: Blue Oaks & Orchard View

Existing Conditions
AM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	4	774	470	25	71	13
v/c Ratio	0.01	0.20	0.13	0.02	0.15	0.03
Control Delay	14.2	2.8	4.6	3.7	13.9	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.2	2.8	4.6	3.7	13.9	7.8
Queue Length 50th (ft)	1	23	13	0	16	0
Queue Length 95th (ft)	7	34	44	10	33	8
Internal Link Dist (ft)		333	430		493	
Turn Bay Length (ft)	230			245		240
Base Capacity (vph)	993	5085	5085	1583	993	894
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.15	0.09	0.02	0.07	0.01
Intersection Summary						

The Plaza at Blue Oaks
4: Blue Oaks & Orchard View

Existing Conditions

AM Peak

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	4	704	437	23	57	10		
Future Volume (veh/h)	4	704	437	23	57	10		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	4	774	470	25	71	12		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.91	0.91	0.93	0.93	0.80	0.80		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	64	3358	2745	855	302	269		
Arrive On Green	0.04	0.66	0.54	0.54	0.17	0.17		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	4	774	470	25	71	12		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.1	2.2	1.7	0.3	1.2	0.2		
Cycle Q Clear(g_c), s	0.1	2.2	1.7	0.3	1.2	0.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	64	3358	2745	855	302	269		
V/C Ratio(X)	0.06	0.23	0.17	0.03	0.24	0.04		
Avail Cap(c_a), veh/h	1053	6896	6896	2147	1053	939		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.5	2.4	4.1	3.8	12.7	12.3		
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.0	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	1.0	0.8	0.1	0.6	0.2		
LnGrp Delay(d),s/veh	16.6	2.5	4.2	3.8	12.8	12.3		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		778	495		83			
Approach Delay, s/veh		2.5	4.2		12.8			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				26.4		9.0	4.3	22.1
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				45.0		20.0	20.0	45.0
Max Q Clear Time (g_c+l1), s				4.2		3.2	2.1	3.7
Green Ext Time (p_c), s				12.4		0.1	0.0	12.4
Intersection Summary								
HCM 2010 Ctrl Delay			3.8					
HCM 2010 LOS			A					
Notes								

The Plaza at Blue Oaks
6: Fiddymment Road & Harvey Way

Existing Conditions

AM Peak

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕	↕	↕	↕↕	↕	↕	↕↕	↕
Traffic Vol, veh/h	0	0	0	9	0	22	0	513	8	12	562	0
Future Vol, veh/h	0	0	0	9	0	22	0	513	8	12	562	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	235	205	-	220	250	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	70	70	70	88	88	88	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	13	0	31	0	583	9	17	803	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1128	1420	401	1019	1420	291	803	0	0	583	0	0
Stage 1	837	837	-	583	583	-	-	-	-	-	-	-
Stage 2	291	583	-	436	837	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	159	135	599	191	135	706	817	-	-	987	-	-
Stage 1	327	380	-	465	497	-	-	-	-	-	-	-
Stage 2	693	497	-	569	380	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	150	133	599	188	133	706	817	-	-	987	-	-
Mov Cap-2 Maneuver	150	133	-	188	133	-	-	-	-	-	-	-
Stage 1	327	373	-	465	497	-	-	-	-	-	-	-
Stage 2	662	497	-	559	373	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	0		14.7		0		0.2					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	817	-	-	-	188	706	987	-	-			
HCM Lane V/C Ratio	-	-	-	-	0.068	0.045	0.017	-	-			
HCM Control Delay (s)	0	-	-	0	25.6	10.3	8.7	-	-			
HCM Lane LOS	A	-	-	A	D	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.1	0.1	-	-			

The Plaza at Blue Oaks
8: Oak Meadow Road & Harvey Way

Existing Conditions

AM Peak

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	0	2	31	0	6
Future Vol, veh/h	20	0	2	31	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	0	3	44	0	9
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	29	0	79	29
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1584	-	924	1046
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1584	-	922	1046
Mov Cap-2 Maneuver	-	-	-	-	922	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	970	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.4		8.5		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1046	-	-	1584	-	
HCM Lane V/C Ratio	0.008	-	-	0.002	-	
HCM Control Delay (s)	8.5	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile O(veh)	0	-	-	0	-	

The Plaza at Blue Oaks
9: Orchard View Road & Harvey Way

Existing Conditions

AM Peak

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	12	9	26	16	0	10	3	10	1	19	3
Future Vol, veh/h	1	12	9	26	16	0	10	3	10	1	19	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	75	75	75	82	82	82	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	17	13	35	21	0	12	4	12	1	27	4
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	77	72	29	81	68	10	31	0	0	16	0	0
Stage 1	32	32	-	34	34	-	-	-	-	-	-	-
Stage 2	45	40	-	47	34	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	912	818	1046	907	823	1071	1582	-	-	1602	-	-
Stage 1	984	868	-	982	867	-	-	-	-	-	-	-
Stage 2	969	862	-	967	867	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	888	811	1046	875	816	1071	1582	-	-	1602	-	-
Mov Cap-2 Maneuver	888	811	-	875	816	-	-	-	-	-	-	-
Stage 1	976	867	-	974	860	-	-	-	-	-	-	-
Stage 2	937	855	-	935	866	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.2		9.5			3.2			0.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1582	-	-	897	852	1602	-	-				
HCM Lane V/C Ratio	0.008	-	-	0.035	0.066	0.001	-	-				
HCM Control Delay (s)	7.3	0	-	9.2	9.5	7.2	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.1	0.2	0	-	-				

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Conditions

PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	59	9	607	96	204	5	426	442	135	449	18
v/c Ratio	0.04	0.11	0.03	0.72	0.09	0.33	0.01	0.43	0.58	0.30	0.29	0.02
Control Delay	31.6	36.5	0.1	32.1	23.1	6.5	33.5	24.6	6.0	36.4	18.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	36.5	0.1	32.1	23.1	6.5	33.5	24.6	6.0	36.4	18.4	0.1
Queue Length 50th (ft)	3	9	0	135	14	0	1	85	0	30	66	0
Queue Length 95th (ft)	12	26	0	226	51	61	6	147	61	70	173	0
Internal Link Dist (ft)		462			385			709			365	
Turn Bay Length (ft)	235		235	235			245		245	245		245
Base Capacity (vph)	1446	1457	597	1525	1331	723	983	1673	981	983	1716	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.04	0.02	0.40	0.07	0.28	0.01	0.25	0.45	0.14	0.26	0.02
Intersection Summary												

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Conditions

PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	54	8	558	88	188	4	375	389	126	418	17
Future Volume (veh/h)	16	54	8	558	88	188	4	375	389	126	418	17
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	17	59	9	607	96	204	5	426	442	135	449	18
Adj No. of Lanes	2	3	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.88	0.88	0.88	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	350	109	741	489	219	812	1233	552	373	691	309
Arrive On Green	0.12	0.07	0.07	0.22	0.14	0.14	0.24	0.35	0.35	0.11	0.20	0.20
Sat Flow, veh/h	3442	5085	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	17	59	9	607	96	204	5	426	442	135	449	18
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	0.3	0.9	0.2	13.2	1.9	7.3	0.1	7.0	19.9	2.9	9.2	0.7
Cycle Q Clear(g_c), s	0.3	0.9	0.2	13.2	1.9	7.3	0.1	7.0	19.9	2.9	9.2	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	350	109	741	489	219	812	1233	552	373	691	309
V/C Ratio(X)	0.04	0.17	0.08	0.82	0.20	0.93	0.01	0.35	0.80	0.36	0.65	0.06
Avail Cap(c_a), veh/h	874	1292	402	1355	989	442	874	1483	664	874	1483	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	34.5	11.4	29.4	30.1	17.7	23.0	19.0	23.2	32.6	29.2	25.8
Incr Delay (d2), s/veh	0.0	0.3	0.4	0.9	0.3	21.4	0.0	0.3	7.5	0.2	2.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	0.2	6.3	0.9	5.1	0.0	3.5	9.8	1.4	4.7	0.3
LnGrp Delay(d),s/veh	30.6	34.8	11.9	30.3	30.3	39.1	23.0	19.3	30.7	32.8	31.2	25.9
LnGrp LOS	C	C	B	C	C	D	C	B	C	C	C	C
Approach Vol, veh/h	85		907				873		602			
Approach Delay, s/veh	31.6		32.3				25.1		31.4			
Approach LOS	C		C				C		C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	33.4	21.0	11.8	24.6	21.4	15.9	16.9				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.4	6.0	* 6	6.4	* 6				
Max Green Setting (Gmax), s	20.0	33.0	31.0	20.0	20.0	* 33	20.0	* 22				
Max Q Clear Time (g_c+I1), s	4.9	21.9	15.2	2.9	2.1	11.2	2.3	9.3				
Green Ext Time (p_c), s	0.3	5.6	1.7	0.3	7.5	4.2	0.3	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay	29.5											
HCM 2010 LOS	C											
Notes												

The Plaza at Blue Oaks
3: Blue Oaks Boulevard & Oak Meadow Drive

Existing Conditions

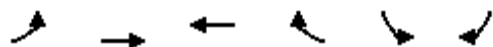
PM Peak

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	568	827	2	0	7
Future Vol, veh/h	1	568	827	2	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	265	-	-	240	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	93	93	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	617	889	2	0	10
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	889	0	-	0	1138	445
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	249	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	443	-	-	-	264	479
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	706	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	443	-	-	-	263	479
Mov Cap-2 Maneuver	-	-	-	-	263	-
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	704	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		12.7		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	443	-	-	-	479	
HCM Lane V/C Ratio	0.002	-	-	-	0.021	
HCM Control Delay (s)	13.1	-	-	-	12.7	
HCM Lane LOS	B	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

The Plaza at Blue Oaks
4: Blue Oaks & Orchard View

Existing Conditions

PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	6	649	852	68	37	11
v/c Ratio	0.02	0.15	0.20	0.05	0.08	0.03
Control Delay	18.0	1.6	3.3	2.2	16.2	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	1.6	3.3	2.2	16.2	10.4
Queue Length 50th (ft)	1	0	0	0	5	0
Queue Length 95th (ft)	9	26	77	15	29	10
Internal Link Dist (ft)		333	430		493	
Turn Bay Length (ft)	230			245		240
Base Capacity (vph)	976	5085	4951	1543	976	877
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.13	0.17	0.04	0.04	0.01
Intersection Summary						

The Plaza at Blue Oaks
4: Blue Oaks & Orchard View

Existing Conditions

PM Peak

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	5	558	818	65	34	10		
Future Volume (veh/h)	5	558	818	65	34	10		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	6	649	852	68	37	11		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.86	0.86	0.96	0.96	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	65	3711	3139	977	210	188		
Arrive On Green	0.04	0.73	0.62	0.62	0.12	0.12		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	6	649	852	68	37	11		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.1	1.6	3.0	0.7	0.7	0.2		
Cycle Q Clear(g_c), s	0.1	1.6	3.0	0.7	0.7	0.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	65	3711	3139	977	210	188		
V/C Ratio(X)	0.09	0.17	0.27	0.07	0.18	0.06		
Avail Cap(c_a), veh/h	942	6173	6173	1922	942	841		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	18.4	1.7	3.5	3.0	15.7	15.5		
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.0	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.7	1.4	0.3	0.4	0.2		
LnGrp Delay(d),s/veh	18.6	1.7	3.5	3.1	15.8	15.5		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		655	920		48			
Approach Delay, s/veh		1.8	3.5		15.8			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				31.9		7.7	4.4	27.4
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				45.0		20.0	20.0	45.0
Max Q Clear Time (g_c+I1), s				3.6		2.7	2.1	5.0
Green Ext Time (p_c), s				16.6		0.1	0.0	16.4
Intersection Summary								
HCM 2010 Ctrl Delay			3.2					
HCM 2010 LOS			A					
Notes								

The Plaza at Blue Oaks
6: Fiddymment Road & Harvey Way

Existing Conditions

PM Peak

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	0	0	0	6	0	9	0	569	10	13	555	0
Future Vol, veh/h	0	0	0	6	0	9	0	569	10	13	555	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	235	205	-	220	250	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	70	70	70	81	81	81	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	9	0	13	0	702	12	14	597	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	976	1327	298	1028	1327	351	597	0	0	702	0	0
Stage 1	625	625	-	702	702	-	-	-	-	-	-	-
Stage 2	351	702	-	326	625	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	206	154	698	188	154	645	976	-	-	891	-	-
Stage 1	439	475	-	395	439	-	-	-	-	-	-	-
Stage 2	639	439	-	661	475	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	199	152	698	186	152	645	976	-	-	891	-	-
Mov Cap-2 Maneuver	199	152	-	186	152	-	-	-	-	-	-	-
Stage 1	439	468	-	395	439	-	-	-	-	-	-	-
Stage 2	626	439	-	651	468	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			16.5			0			0.2		
HCM LOS	A			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	976	-	-	-	186	645	891	-	-			
HCM Lane V/C Ratio	-	-	-	-	0.046	0.02	0.016	-	-			
HCM Control Delay (s)	0	-	-	0	25.3	10.7	9.1	-	-			
HCM Lane LOS	A	-	-	A	D	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1	0	-	-			

The Plaza at Blue Oaks
8: Oak Meadow Road & Harvey Way

Existing Conditions

PM Peak

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	0	7	14	1	2
Future Vol, veh/h	23	0	7	14	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	0	10	20	1	3
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	32	0	72	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1580	-	932	1042
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1580	-	926	1042
Mov Cap-2 Maneuver	-	-	-	-	926	-
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	976	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2.4		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1000	-	-	1580	-	
HCM Lane V/C Ratio	0.004	-	-	0.006	-	
HCM Control Delay (s)	8.6	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

The Plaza at Blue Oaks
9: Orchard View Road & Harvey Way

Existing Conditions

PM Peak

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	10	11	20	2	1	24	4	34	0	11	2
Future Vol, veh/h	5	10	11	20	2	1	24	4	34	0	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	70	70	70	78	78	78	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	12	13	29	3	1	31	5	44	0	16	3
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	108	127	17	118	107	27	19	0	0	49	0	0
Stage 1	17	17	-	88	88	-	-	-	-	-	-	-
Stage 2	91	110	-	30	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	871	764	1062	858	783	1048	1597	-	-	1558	-	-
Stage 1	1002	881	-	920	822	-	-	-	-	-	-	-
Stage 2	916	804	-	987	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	854	749	1062	824	767	1048	1597	-	-	1558	-	-
Mov Cap-2 Maneuver	854	749	-	824	767	-	-	-	-	-	-	-
Stage 1	982	881	-	902	806	-	-	-	-	-	-	-
Stage 2	893	788	-	962	880	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s	9.2		9.5		2.8			0				
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1597	-	-	879	826	1558	-	-				
HCM Lane V/C Ratio	0.019	-	-	0.035	0.04	-	-	-				
HCM Control Delay (s)	7.3	0	-	9.2	9.5	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile O(veh)	0.1	-	-	0.1	0.1	0	-	-				

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Plus Project Conditions

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	67	83	5	445	49	117	3	452	538	269	534	32
v/c Ratio	0.10	0.15	0.01	0.65	0.12	0.32	0.01	0.42	0.63	0.50	0.32	0.04
Control Delay	28.5	37.1	0.0	34.7	37.2	2.3	32.7	23.5	6.0	36.1	17.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	37.1	0.0	34.7	37.2	2.3	32.7	23.5	6.0	36.1	17.0	0.1
Queue Length 50th (ft)	13	13	0	100	11	0	0	90	0	61	75	0
Queue Length 95th (ft)	29	28	0	182	33	0	4	158	74	93	152	0
Internal Link Dist (ft)		462			502			709			365	
Turn Bay Length (ft)	235		235	235			245		245	245		245
Base Capacity (vph)	1443	1454	597	1521	1113	638	983	1670	1030	981	1793	886
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.06	0.01	0.29	0.04	0.18	0.00	0.27	0.52	0.27	0.30	0.04
Intersection Summary												

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Plus Project Conditions

AM Peak

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	50	62	4	21	402	47	111	3	411	490	22	169
Future Volume (veh/h)	50	62	4	21	402	47	111	3	411	490	22	169
Number	7	4	14		3	8	18	5	2	12		1
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1863	1863	1863	1863		1863
Adj Flow Rate, veh/h	67	83	5		423	49	117	3	452	538		238
Adj No. of Lanes	2	3	1		2	2	1	2	2	1		2
Peak Hour Factor	0.75	0.75	0.75		0.95	0.95	0.95	0.91	0.91	0.91		0.71
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2		2
Cap, veh/h	379	387	121		546	351	157	870	1384	619		393
Arrive On Green	0.11	0.08	0.08		0.16	0.10	0.10	0.25	0.39	0.39		0.11
Sat Flow, veh/h	3442	5085	1583		3442	3539	1583	3442	3539	1583		3442
Grp Volume(v), veh/h	67	83	5		423	49	117	3	452	538		238
Grp Sat Flow(s),veh/h/ln	1721	1695	1583		1721	1770	1583	1721	1770	1583		1721
Q Serve(g_s), s	1.4	1.2	0.1		9.2	1.0	4.1	0.1	7.0	24.6		5.2
Cycle Q Clear(g_c), s	1.4	1.2	0.1		9.2	1.0	4.1	0.1	7.0	24.6		5.2
Prop In Lane	1.00		1.00		1.00		1.00	1.00		1.00		1.00
Lane Grp Cap(c), veh/h	379	387	121		546	351	157	870	1384	619		393
V/C Ratio(X)	0.18	0.21	0.04		0.77	0.14	0.74	0.00	0.33	0.87		0.61
Avail Cap(c_a), veh/h	878	1297	404		1360	993	444	878	1489	666		878
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	31.7	34.0	10.4		31.6	32.3	18.4	21.9	16.7	22.0		33.1
Incr Delay (d2), s/veh	0.1	0.4	0.2		0.9	0.3	9.8	0.0	0.3	12.4		0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	0.7	0.6	0.1		4.5	0.5	2.7	0.0	3.4	12.9		2.5
LnGrp Delay(d),s/veh	31.8	34.4	10.5		32.5	32.5	28.2	21.9	16.9	34.4		33.6
LnGrp LOS	C	C	B		C	C	C	C	B	C		C
Approach Vol, veh/h		155				589			993			
Approach Delay, s/veh		32.5				31.7			26.4			
Approach LOS		C				C			C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.9	36.7	16.5	12.4	25.8	23.8	15.0	13.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.4	6.0	* 6	6.4	* 6				
Max Green Setting (Gmax), s	20.0	33.0	31.0	20.0	20.0	* 33	20.0	* 22				
Max Q Clear Time (g_c+I1), s	7.2	26.6	11.2	3.2	2.1	12.8	3.4	6.1				
Green Ext Time (p_c), s	0.5	4.1	1.2	0.6	8.7	5.0	0.6	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			29.3									
HCM 2010 LOS			C									
Notes												

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Plus Project Conditions

AM Peak

	↓	↙
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	379	23
Future Volume (veh/h)	379	23
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	534	32
Adj No. of Lanes	2	1
Peak Hour Factor	0.71	0.71
Percent Heavy Veh, %	2	2
Cap, veh/h	802	359
Arrive On Green	0.23	0.23
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	534	32
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	10.8	1.3
Cycle Q Clear(g_c), s	10.8	1.3
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	802	359
V/C Ratio(X)	0.67	0.09
Avail Cap(c_a), veh/h	1489	666
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	27.6	23.9
Incr Delay (d2), s/veh	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.6
LnGrp Delay(d),s/veh	29.5	24.1
LnGrp LOS	C	C
Approach Vol, veh/h	804	
Approach Delay, s/veh	30.5	
Approach LOS	C	
Timer		

The Plaza at Blue Oaks
2: Blue Oaks Boulevard

Existing Plus Project Conditions

AM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑	↗		↗
Traffic Vol, veh/h	0	714	476	81	0	105
Future Vol, veh/h	0	714	476	81	0	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	776	517	88	0	114
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	259
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	631
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	631
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		12		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	631		
HCM Lane V/C Ratio	-	-	-	0.181		
HCM Control Delay (s)	-	-	-	12		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.7		

The Plaza at Blue Oaks
3: Blue Oaks Boulevard & Oak Meadow Drive

Existing Plus Project Conditions

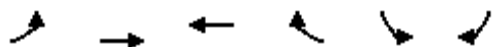
AM Peak

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	712	514	39	0	43
Future Vol, veh/h	30	712	514	39	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	265	-	-	240	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	93	93	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	774	553	42	0	61
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	553	0	-	0	928	276
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	375	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	639	-	-	-	337	615
Stage 1	-	-	-	-	449	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	639	-	-	-	320	615
Mov Cap-2 Maneuver	-	-	-	-	320	-
Stage 1	-	-	-	-	449	-
Stage 2	-	-	-	-	578	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		11.5		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	639	-	-	-	615	
HCM Lane V/C Ratio	0.051	-	-	-	0.1	
HCM Control Delay (s)	10.9	-	-	-	11.5	
HCM Lane LOS	B	-	-	-	B	
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3	

The Plaza at Blue Oaks
4: Blue Oaks & Orchard View

Existing Plus Project Conditions

AM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	4	797	470	25	98	13
v/c Ratio	0.01	0.23	0.14	0.02	0.21	0.03
Control Delay	13.8	3.5	5.2	3.7	14.3	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	3.5	5.2	3.7	14.3	7.6
Queue Length 50th (ft)	1	24	13	0	19	0
Queue Length 95th (ft)	7	35	44	10	43	8
Internal Link Dist (ft)		333	430		493	
Turn Bay Length (ft)	230			245		240
Base Capacity (vph)	959	5085	5085	1583	959	863
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.16	0.09	0.02	0.10	0.02
Intersection Summary						

The Plaza at Blue Oaks
4: Blue Oaks & Orchard View

Existing Plus Project Conditions

AM Peak

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	4	725	437	23	78	10		
Future Volume (veh/h)	4	725	437	23	78	10		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	4	797	470	25	98	12		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.91	0.91	0.93	0.93	0.80	0.80		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	62	3281	2691	838	341	304		
Arrive On Green	0.03	0.65	0.53	0.53	0.19	0.19		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	4	797	470	25	98	12		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.1	2.4	1.8	0.3	1.7	0.2		
Cycle Q Clear(g_c), s	0.1	2.4	1.8	0.3	1.7	0.2		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	62	3281	2691	838	341	304		
V/C Ratio(X)	0.06	0.24	0.17	0.03	0.29	0.04		
Avail Cap(c_a), veh/h	1010	6618	6618	2060	1010	901		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.2	2.8	4.5	4.2	12.7	12.1		
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.0	0.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	1.1	0.8	0.1	0.9	0.2		
LnGrp Delay(d),s/veh	17.4	2.8	4.5	4.2	12.9	12.2		
LnGrp LOS	B	A	A	A	B	B		
Approach Vol, veh/h		801	495		110			
Approach Delay, s/veh		2.9	4.5		12.8			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				26.8		10.1	4.3	22.5
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				45.0		20.0	20.0	45.0
Max Q Clear Time (g_c+I1), s				4.4		3.7	2.1	3.8
Green Ext Time (p_c), s				12.7		0.2	0.0	12.8
Intersection Summary								
HCM 2010 Ctrl Delay			4.2					
HCM 2010 LOS			A					
Notes								

The Plaza at Blue Oaks
5: Fiddymment Road

Existing Plus Project Conditions

AM Peak

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	118	438	156	0	571
Future Vol, veh/h	0	118	438	156	0	571
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	128	476	170	0	621
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	323	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	673	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	673	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.6	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	- 673		-		
HCM Lane V/C Ratio	-	- 0.191		-		
HCM Control Delay (s)	-	- 11.6		-		
HCM Lane LOS	-	- B		-		
HCM 95th %tile Q(veh)	-	- 0.7		-		

The Plaza at Blue Oaks
6: Fiddymment Road & Harvey Way

Existing Plus Project Conditions

AM Peak

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕	↕	↕	↕↕	↕	↕	↕↕	↕
Traffic Vol, veh/h	0	0	0	71	0	22	0	513	8	96	522	0
Future Vol, veh/h	0	0	0	71	0	22	0	513	8	96	522	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	235	205	-	220	250	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	70	70	70	88	88	88	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	101	0	31	0	583	9	137	746	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1311	1603	373	1230	1603	291	746	0	0	583	0	0
Stage 1	1020	1020	-	583	583	-	-	-	-	-	-	-
Stage 2	291	583	-	647	1020	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	116	105	624	134	105	706	858	-	-	987	-	-
Stage 1	253	312	-	465	497	-	-	-	-	-	-	-
Stage 2	693	497	-	426	312	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	99	90	624	120	90	706	858	-	-	987	-	-
Mov Cap-2 Maneuver	99	90	-	120	90	-	-	-	-	-	-	-
Stage 1	253	269	-	465	497	-	-	-	-	-	-	-
Stage 2	662	497	-	367	269	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	0		88.3		0		1.4					
HCM LOS	A		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	858	-	-	-	120	706	987	-	-			
HCM Lane V/C Ratio	-	-	-	-	0.845	0.045	0.139	-	-			
HCM Control Delay (s)	0	-	-	0	112.5	10.3	9.2	-	-			
HCM Lane LOS	A	-	-	A	F	B	A	-	-			
HCM 95th %tile O(veh)	0	-	-	-	5.1	0.1	0.5	-	-			

The Plaza at Blue Oaks
7: Harvey Way

Existing Plus Project Conditions

AM Peak

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	84	0	31	62	0
Future Vol, veh/h	20	84	0	31	62	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	91	0	34	67	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	113	0	101	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	34	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1476	-	898	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	988	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1476	-	898	997
Mov Cap-2 Maneuver	-	-	-	-	898	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	988	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	898	-	-	1476	-	
HCM Lane V/C Ratio	0.075	-	-	-	-	
HCM Control Delay (s)	9.3	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile O(veh)	0.2	-	-	0	-	

The Plaza at Blue Oaks
8: Oak Meadow Road & Harvey Way

Existing Plus Project Conditions

AM Peak

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	0	2	31	0	27
Future Vol, veh/h	20	0	2	31	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	0	3	44	0	39
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	29	0	79	29
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1584	-	924	1046
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1584	-	922	1046
Mov Cap-2 Maneuver	-	-	-	-	922	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	970	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.4		8.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1046	-	-	1584	-	
HCM Lane V/C Ratio	0.037	-	-	0.002	-	
HCM Control Delay (s)	8.6	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

The Plaza at Blue Oaks
9: Orchard View Road & Harvey Way

Existing Plus Project Conditions

AM Peak

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	12	30	26	16	0	10	3	10	1	19	3
Future Vol, veh/h	1	12	30	26	16	0	10	3	10	1	19	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	75	75	75	82	82	82	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	17	43	35	21	0	12	4	12	1	27	4
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	77	72	29	96	68	10	31	0	0	16	0	0
Stage 1	32	32	-	34	34	-	-	-	-	-	-	-
Stage 2	45	40	-	62	34	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	912	818	1046	887	823	1071	1582	-	-	1602	-	-
Stage 1	984	868	-	982	867	-	-	-	-	-	-	-
Stage 2	969	862	-	949	867	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	888	811	1046	831	816	1071	1582	-	-	1602	-	-
Mov Cap-2 Maneuver	888	811	-	831	816	-	-	-	-	-	-	-
Stage 1	976	867	-	974	860	-	-	-	-	-	-	-
Stage 2	937	855	-	891	866	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9		9.7			3.2			0.3			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1582	-	-	964	825	1602	-	-				
HCM Lane V/C Ratio	0.008	-	-	0.064	0.068	0.001	-	-				
HCM Control Delay (s)	7.3	0	-	9	9.7	7.2	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile O(veh)	0	-	-	0.2	0.2	0	-	-				

The Plaza at Blue Oaks
10: Oak Meadow Drive/Oak Meadow Road

Existing Plus Project Conditions

AM Peak

Intersection						
Int Delay, s/veh	6.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	36	51	18	8	0
Future Vol, veh/h	10	36	51	18	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	39	55	20	9	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	139	9	9	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	854	1073	1611	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	824	1073	1611	-	-	-
Mov Cap-2 Maneuver	824	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	865	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	5.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1611	-	1007	-	-	
HCM Lane V/C Ratio	0.034	-	0.05	-	-	
HCM Control Delay (s)	7.3	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Plus Project Conditions

PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	30	59	9	747	109	204	5	490	484	166	449	18
v/c Ratio	0.05	0.12	0.03	0.77	0.12	0.36	0.01	0.48	0.60	0.39	0.30	0.02
Control Delay	30.4	41.6	0.1	34.4	31.5	8.2	36.8	27.4	6.1	41.5	21.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	41.6	0.1	34.4	31.5	8.2	36.8	27.4	6.1	41.5	21.0	0.1
Queue Length 50th (ft)	7	10	0	188	17	0	1	113	0	43	78	0
Queue Length 95th (ft)	20	28	0	300	61	64	6	180	64	87	188	0
Internal Link Dist (ft)		462			502			709			365	
Turn Bay Length (ft)	235		235	235			245		245	245		245
Base Capacity (vph)	1284	1294	553	1354	1195	670	874	1486	945	874	1600	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.05	0.02	0.55	0.09	0.30	0.01	0.33	0.51	0.19	0.28	0.02
Intersection Summary												

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Plus Project Conditions

PM Peak

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	28	54	8	35	652	100	188	4	431	426	29	126
Future Volume (veh/h)	28	54	8	35	652	100	188	4	431	426	29	126
Number	7	4	14		3	8	18	5	2	12		1
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0		0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1863	1863	1863	1863		1863
Adj Flow Rate, veh/h	30	59	9		709	109	204	5	490	484		135
Adj No. of Lanes	2	3	1		2	2	1	2	2	1		2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.88	0.88	0.88		0.93
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2		2
Cap, veh/h	506	332	103		833	486	217	837	1255	562		346
Arrive On Green	0.15	0.07	0.07		0.24	0.14	0.14	0.24	0.35	0.35		0.10
Sat Flow, veh/h	3442	5085	1583		3442	3539	1583	3442	3539	1583		3442
Grp Volume(v), veh/h	30	59	9		709	109	204	5	490	484		135
Grp Sat Flow(s),veh/h/ln	1721	1695	1583		1721	1770	1583	1721	1770	1583		1721
Q Serve(g_s), s	0.6	0.9	0.3		16.9	2.4	8.2	0.1	8.9	24.4		3.2
Cycle Q Clear(g_c), s	0.6	0.9	0.3		16.9	2.4	8.2	0.1	8.9	24.4		3.2
Prop In Lane	1.00		1.00		1.00		1.00	1.00		1.00		1.00
Lane Grp Cap(c), veh/h	506	332	103		833	486	217	837	1255	562		346
V/C Ratio(X)	0.06	0.18	0.09		0.85	0.22	0.94	0.01	0.39	0.86		0.39
Avail Cap(c_a), veh/h	801	1183	368		1241	906	405	837	1358	608		801
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	31.6	38.0	12.9		31.1	33.0	20.6	24.7	20.8	25.8		36.2
Incr Delay (d2), s/veh	0.0	0.3	0.5		2.5	0.3	22.5	0.0	0.4	12.7		0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	0.3	0.5	0.1		8.3	1.2	5.0	0.0	4.4	12.5		1.5
LnGrp Delay(d),s/veh	31.6	38.3	13.4		33.6	33.4	43.1	24.7	21.2	38.5		36.5
LnGrp LOS	C	D	B		C	C	D	C	C	D		D
Approach Vol, veh/h		98				1022			979			
Approach Delay, s/veh		34.0				35.5			29.7			
Approach LOS		C				D			C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.6	36.5	24.8	12.0	26.9	22.2	19.0	17.8				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.4	6.0	* 6	6.4	* 6				
Max Green Setting (Gmax), s	20.0	33.0	31.0	20.0	20.0	* 33	20.0	* 22				
Max Q Clear Time (g_c+I1), s	5.2	26.4	18.9	2.9	2.1	12.1	2.6	10.2				
Green Ext Time (p_c), s	0.3	4.1	1.9	0.3	8.4	4.1	0.3	1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			33.2									
HCM 2010 LOS			C									
Notes												

The Plaza at Blue Oaks
1: Fiddymment Road & Blue Oaks Boulevard

Existing Plus Project Conditions

PM Peak

	↓	↙
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	418	17
Future Volume (veh/h)	418	17
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	449	18
Adj No. of Lanes	2	1
Peak Hour Factor	0.93	0.93
Percent Heavy Veh, %	2	2
Cap, veh/h	668	299
Arrive On Green	0.19	0.19
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	449	18
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	10.1	0.8
Cycle Q Clear(g_c), s	10.1	0.8
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	668	299
V/C Ratio(X)	0.67	0.06
Avail Cap(c_a), veh/h	1358	608
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	32.4	28.6
Incr Delay (d2), s/veh	2.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.4
LnGrp Delay(d),s/veh	34.7	28.8
LnGrp LOS	C	C
Approach Vol, veh/h	602	
Approach Delay, s/veh	34.9	
Approach LOS	C	
Timer		

The Plaza at Blue Oaks
2: Blue Oaks Boulevard

Existing Plus Project Conditions

PM Peak

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑	↑		↑
Traffic Vol, veh/h	0	604	799	121	0	175
Future Vol, veh/h	0	604	799	121	0	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	657	868	132	0	190

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 434
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.14
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.92
Pot Cap-1 Maneuver	0	-	- - 0 487
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 487
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	487
HCM Lane V/C Ratio	-	-	-	0.391
HCM Control Delay (s)	-	-	-	17.1
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	1.8

The Plaza at Blue Oaks
3: Blue Oaks Boulevard & Oak Meadow Drive

Existing Plus Project Conditions

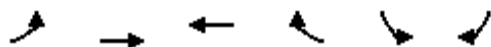
PM Peak

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	603	845	54	0	75
Future Vol, veh/h	38	603	845	54	0	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	265	-	-	240	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	93	93	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	655	909	58	0	107
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	909	0	-	0	1254	454
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	345	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	433	-	-	-	231	473
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	631	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	433	-	-	-	209	473
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	571	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		14.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	433	-	-	-	473	
HCM Lane V/C Ratio	0.095	-	-	-	0.227	
HCM Control Delay (s)	14.2	-	-	-	14.8	
HCM Lane LOS	B	-	-	-	B	
HCM 95th %tile Q(veh)	0.3	-	-	-	0.9	

The Plaza at Blue Oaks
4: Blue Oaks & Orchard View

Existing Plus Project Conditions

PM Peak



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	6	690	852	68	75	11
v/c Ratio	0.02	0.17	0.22	0.06	0.17	0.03
Control Delay	17.4	2.4	4.1	2.2	16.7	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	2.4	4.1	2.2	16.7	9.9
Queue Length 50th (ft)	1	20	26	0	18	0
Queue Length 95th (ft)	9	27	76	15	49	10
Internal Link Dist (ft)		333	430		493	
Turn Bay Length (ft)	230			245		240
Base Capacity (vph)	935	5085	4970	1549	935	841
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.14	0.17	0.04	0.08	0.01
Intersection Summary						

The Plaza at Blue Oaks
4: Blue Oaks & Orchard View

Existing Plus Project Conditions

PM Peak

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	5	593	818	65	69	10		
Future Volume (veh/h)	5	593	818	65	69	10		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	6	690	852	68	75	11		
Adj No. of Lanes	1	3	3	1	1	1		
Peak Hour Factor	0.86	0.86	0.96	0.96	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	62	3563	3027	943	281	251		
Arrive On Green	0.03	0.70	0.60	0.60	0.16	0.16		
Sat Flow, veh/h	1774	5253	5253	1583	1774	1583		
Grp Volume(v), veh/h	6	690	852	68	75	11		
Grp Sat Flow(s),veh/h/ln	1774	1695	1695	1583	1774	1583		
Q Serve(g_s), s	0.1	2.0	3.5	0.8	1.6	0.3		
Cycle Q Clear(g_c), s	0.1	2.0	3.5	0.8	1.6	0.3		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	62	3563	3027	943	281	251		
V/C Ratio(X)	0.10	0.19	0.28	0.07	0.27	0.04		
Avail Cap(c_a), veh/h	875	5735	5735	1786	875	781		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.9	2.2	4.2	3.6	15.7	15.2		
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.9	1.6	0.4	0.8	0.2		
LnGrp Delay(d),s/veh	20.1	2.2	4.3	3.7	15.9	15.2		
LnGrp LOS	C	A	A	A	B	B		
Approach Vol, veh/h		696	920		86			
Approach Delay, s/veh		2.4	4.2		15.8			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6	7	8
Phs Duration (G+Y+Rc), s				32.8		9.7	4.5	28.3
Change Period (Y+Rc), s				6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s				45.0		20.0	20.0	45.0
Max Q Clear Time (g_c+I1), s				4.0		3.6	2.1	5.5
Green Ext Time (p_c), s				17.1		0.1	0.0	16.9
Intersection Summary								
HCM 2010 Ctrl Delay			4.1					
HCM 2010 LOS			A					
Notes								

The Plaza at Blue Oaks
5: Fiddymment Road

Existing Plus Project Conditions

PM Peak

Intersection

Int Delay, s/veh 1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	195	443	233	0	561
Future Vol, veh/h	0	195	443	233	0	561
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	212	482	253	0	610

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	367	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	630	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	630	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	- 630	-
HCM Lane V/C Ratio	-	- 0.336	-
HCM Control Delay (s)	-	- 13.6	-
HCM Lane LOS	-	- B	-
HCM 95th %tile Q(veh)	-	- 1.5	-

The Plaza at Blue Oaks
6: Fiddymment Road & Harvey Way

Existing Plus Project Conditions

PM Peak

Intersection												
Int Delay, s/veh	31.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	0	0	0	108	0	9	0	569	10	144	482	0
Future Vol, veh/h	0	0	0	108	0	9	0	569	10	144	482	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	235	205	-	220	250	-	180
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	70	70	70	81	81	81	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	154	0	13	0	702	12	155	518	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1179	1530	259	1271	1530	351	518	0	0	702	0	0
Stage 1	828	828	-	702	702	-	-	-	-	-	-	-
Stage 2	351	702	-	569	828	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	146	116	740	~ 125	116	645	1044	-	-	891	-	-
Stage 1	332	384	-	395	439	-	-	-	-	-	-	-
Stage 2	639	439	-	474	384	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	124	96	740	~ 108	96	645	1044	-	-	891	-	-
Mov Cap-2 Maneuver	124	96	-	~ 108	96	-	-	-	-	-	-	-
Stage 1	332	317	-	395	439	-	-	-	-	-	-	-
Stage 2	626	439	-	392	317	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0		287.1			0			2.3			
HCM LOS	A		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1044	-	-	-	108	645	891	-	-			
HCM Lane V/C Ratio	-	-	-	-	1.429	0.02	0.174	-	-			
HCM Control Delay (s)	0	-	-	0	310.1	10.7	9.9	-	-			
HCM Lane LOS	A	-	-	A	F	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	-	11	0.1	0.6	-	-			
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	131	0	15	102	0
Future Vol, veh/h	23	131	0	15	102	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	142	0	16	111	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	167	0	112	96
Stage 1	-	-	-	-	96	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1411	-	885	960
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1411	-	885	960
Mov Cap-2 Maneuver	-	-	-	-	885	-
Stage 1	-	-	-	-	928	-
Stage 2	-	-	-	-	1007	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		9.7		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	885	-	-	1411	-	
HCM Lane V/C Ratio	0.125	-	-	-	-	
HCM Control Delay (s)	9.7	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile O(veh)	0.4	-	-	0	-	

The Plaza at Blue Oaks
8: Oak Meadow Road & Harvey Way

Existing Plus Project Conditions

PM Peak

Intersection						
Int Delay, s/veh	4.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	0	7	14	1	37
Future Vol, veh/h	23	0	7	14	1	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	70	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	0	10	20	1	53
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	32	0	72	32
Stage 1	-	-	-	-	32	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1580	-	932	1042
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1580	-	926	1042
Mov Cap-2 Maneuver	-	-	-	-	926	-
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	976	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2.4		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1039	-	-	1580	-	
HCM Lane V/C Ratio	0.052	-	-	0.006	-	
HCM Control Delay (s)	8.7	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

The Plaza at Blue Oaks
9: Orchard View Road & Harvey Way

Existing Plus Project Conditions

PM Peak

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	10	46	20	2	1	24	4	34	0	11	2
Future Vol, veh/h	5	10	46	20	2	1	24	4	34	0	11	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	70	70	70	78	78	78	70	70	70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	12	55	29	3	1	31	5	44	0	16	3
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	108	127	17	138	107	27	19	0	0	49	0	0
Stage 1	17	17	-	88	88	-	-	-	-	-	-	-
Stage 2	91	110	-	50	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	871	764	1062	833	783	1048	1597	-	-	1558	-	-
Stage 1	1002	881	-	920	822	-	-	-	-	-	-	-
Stage 2	916	804	-	963	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	854	749	1062	769	767	1048	1597	-	-	1558	-	-
Mov Cap-2 Maneuver	854	749	-	769	767	-	-	-	-	-	-	-
Stage 1	982	881	-	902	806	-	-	-	-	-	-	-
Stage 2	893	788	-	901	880	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9		9.8			2.8			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1597	-	-	976	778	1558	-	-				
HCM Lane V/C Ratio	0.019	-	-	0.074	0.042	-	-	-				
HCM Control Delay (s)	7.3	0	-	9	9.8	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile O(veh)	0.1	-	-	0.2	0.1	0	-	-				

The Plaza at Blue Oaks
10: Oak Meadow Drive/Oak Meadow Road

Existing Plus Project Conditions

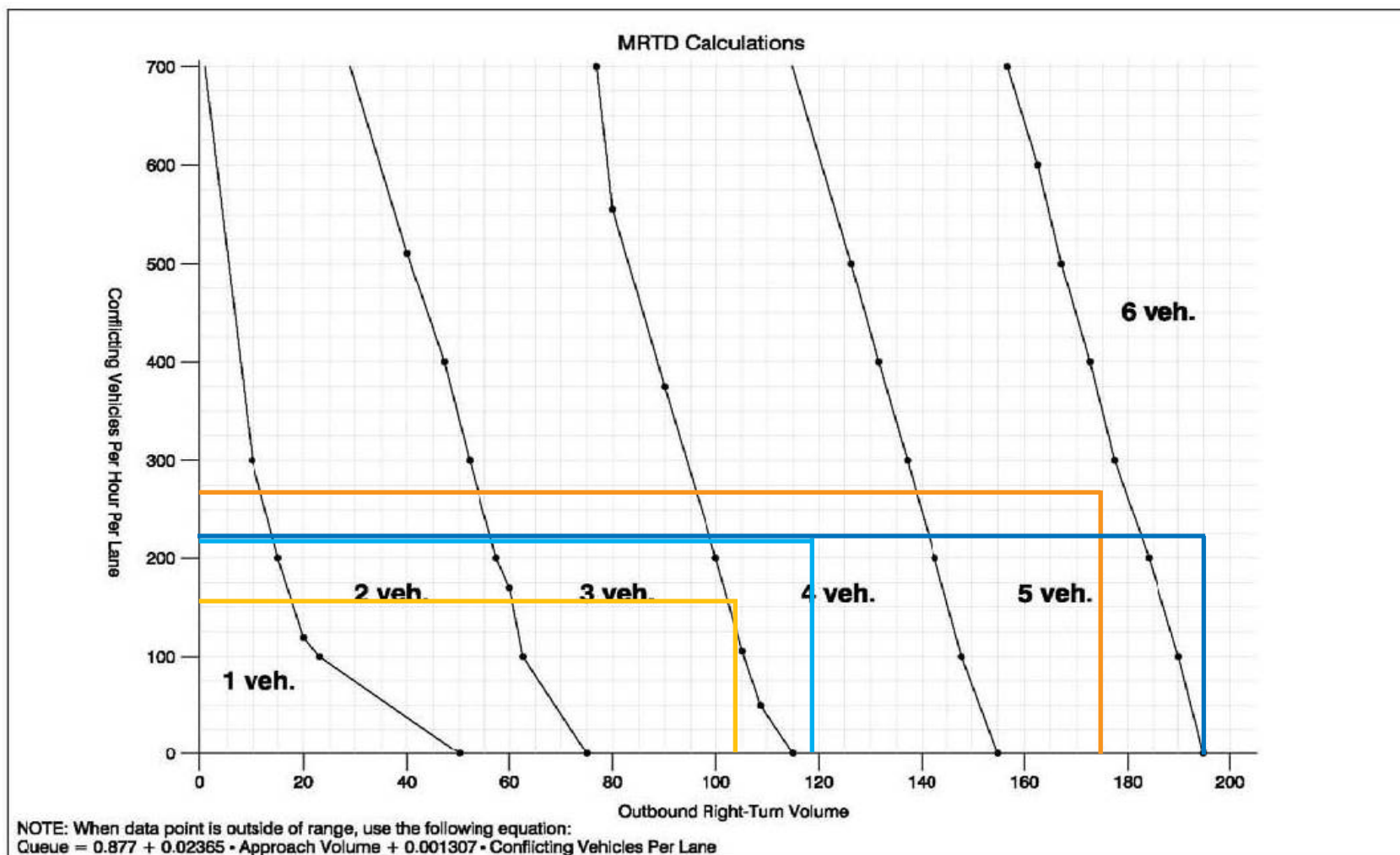
PM Peak

Intersection						
Int Delay, s/veh	6.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	59	73	19	16	0
Future Vol, veh/h	18	59	73	19	16	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	64	79	21	17	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	196	17	17	0	-	0
Stage 1	17	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	793	1062	1600	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	753	1062	1600	-	-	-
Mov Cap-2 Maneuver	753	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	809	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	5.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1600	-	969	-	-	
HCM Lane V/C Ratio	0.05	-	0.086	-	-	
HCM Control Delay (s)	7.4	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.3	-	-	

Attachment C

Minimum Required Throat Depth (MRTD) Analysis Worksheet

Exhibit 4-2
Minimum Required Throat Depth
For Right-Turn Only Movements



LEGEND

Project Driveway #2	Project Driveway #5
AM Volumes	AM Volumes
PM Volumes	PM Volumes

PRELIMINARY SITE PLAN - ALT 4.2

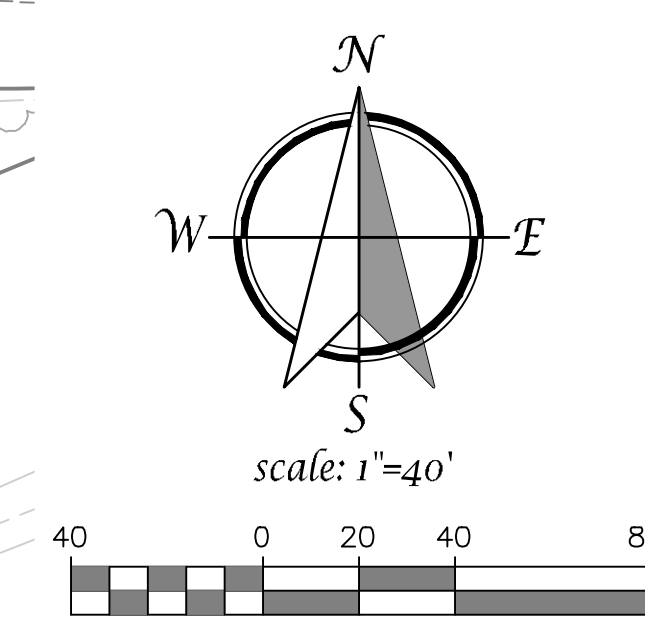
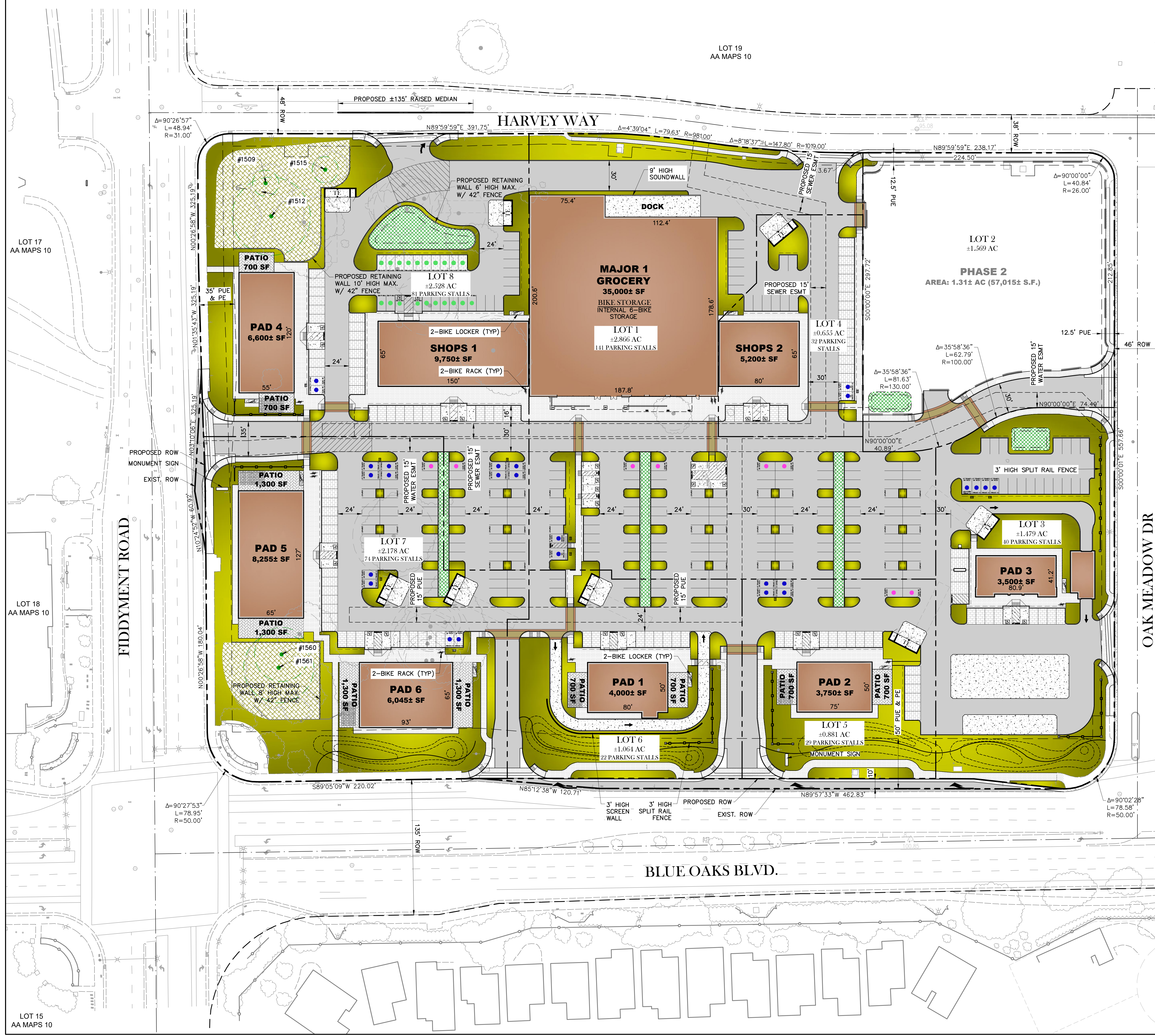
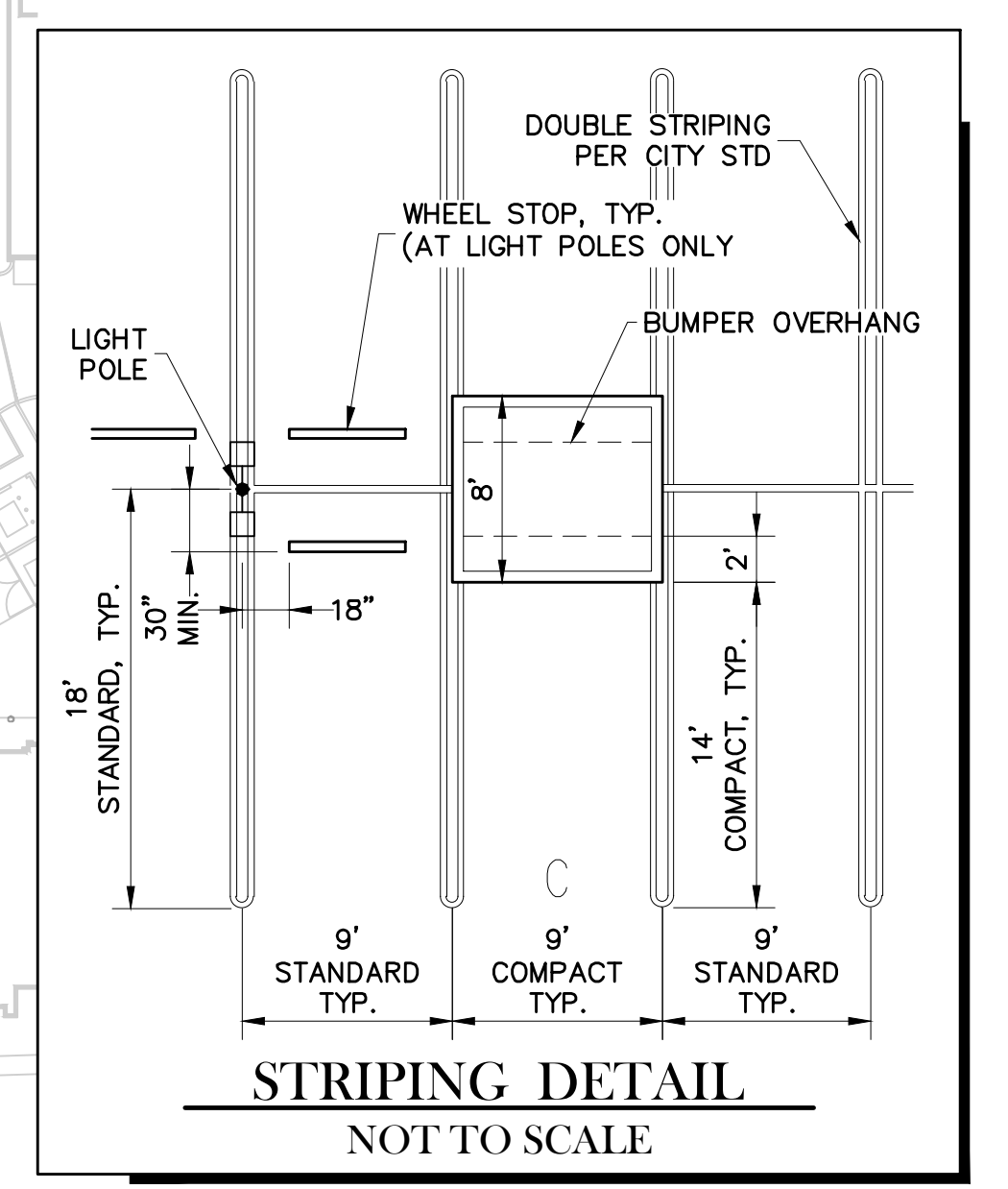
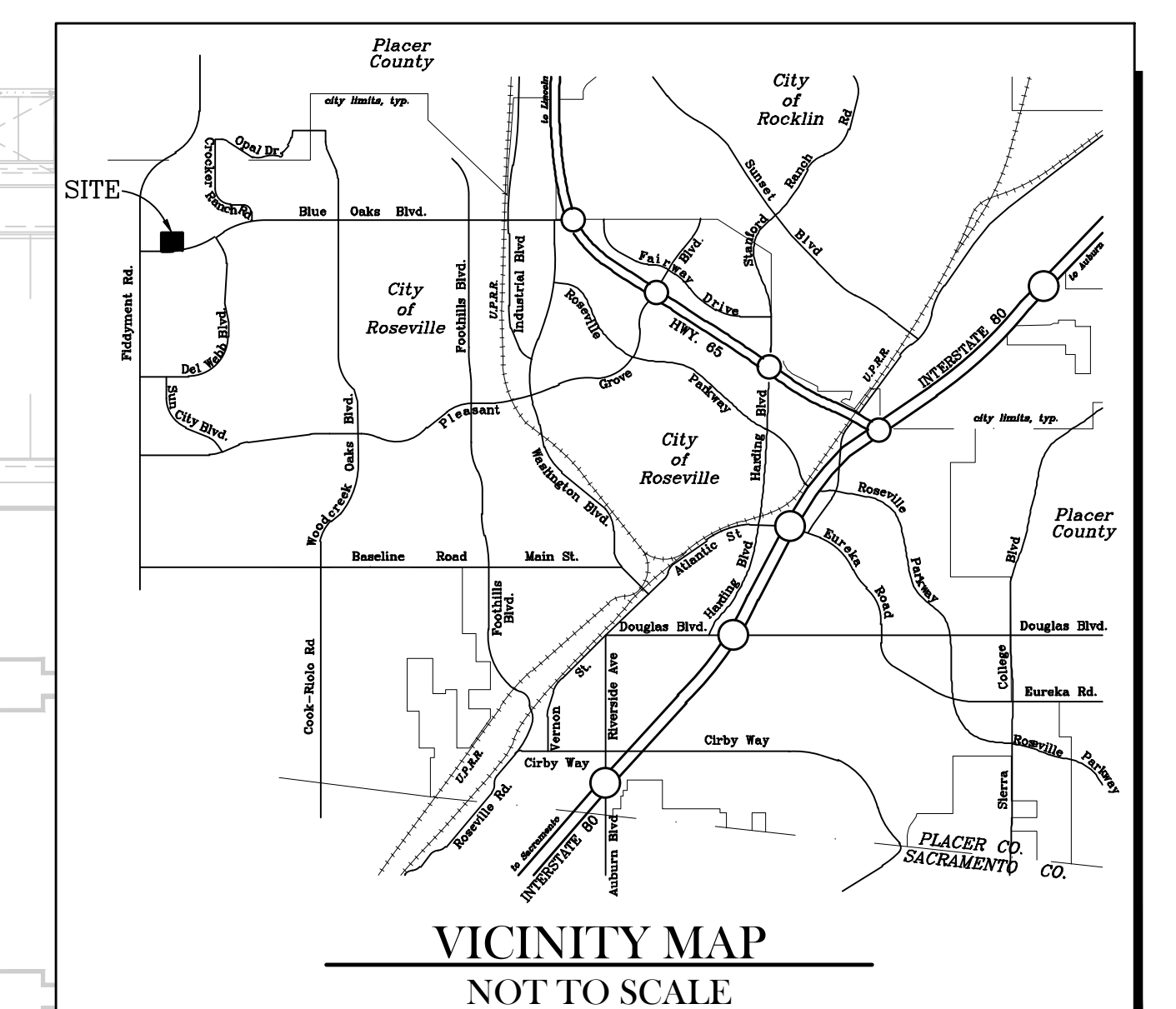
THE PLAZA AT BLUE OAKS

1950 BLUE OAKS BLVD
FIDDYMENT F-31
ROSEVILLE, CA

SITE LEGEND	
	ASPHALT PAVEMENT
	PERVIOUS PAVEMENT
	LANDSCAPE AREA
	NATIVE LANDSCAPE AREA
	BUILDING AREA
	CONCRETE SIDEWALK
	ENHANCED PAVEMENT
	BIORETENTION BASIN

CC EXHIBIT B

BUILDING SUMMARY	
OWNER WEST ROSEVILLE DEVELOPMENT CO. 4670 WILLOW ROAD, SUITE 200 PLEASANTON, CA 94588 ATTN: JOE ZAWODSKI jezawodski@hotmail.com	FLOOR AREA MAJOR 1 35,000 SF SHOPS 1 9,750 SF SHOPS 2 5,200 SF PAD 1 4,000 SF PAD 2 3,750 SF PAD 3 3,500 SF PAD 4 6,600 SF PAD 5 8,255 SF PAD 6 6,045 SF TOTAL 82,100 SF
APPLICANT/DEVELOPER FIDDYMENT F-31 RETAIL, LLC 4670 WILLOW ROAD, SUITE 200 PLEASANTON, CA 94588 ATTN: JOE ZAWODSKI jezawodski@hotmail.com	REQUIRED PARKING 1/300 SF 117 1/200 SF 49 1/200 SF 26 1/200 SF 20 1/200 SF 19 1/300 SF 12 1/200 SF 33 1/200 SF 42 1/200 SF 31 REQUIRED 349
PARKING SUMMARY	
STANDARD SPACES 364 COMPACT SPACES 32 ACCESSIBLE SPACES (9x18 MIN.) 23 (5.5%) TOTAL PROPOSED 419	
PROPOSED USE COMMERCIAL/RETAIL	
ZONING CC - COMMUNITY COMMERCIAL	
ASSESSORS PARCEL NO & AREA APN: 017-117-093 AREA: ±13.35 AC	
PROPOSED LOT 1 AREA: ±2.866 AC PROPOSED LOT 2 AREA: ±1.569 AC PROPOSED LOT 3 AREA: ±1.479 AC PROPOSED LOT 4 AREA: ±0.655 AC PROPOSED LOT 5 AREA: ±0.881 AC PROPOSED LOT 6 AREA: ±1.064 AC PROPOSED LOT 7 AREA: ±2.178 AC PROPOSED LOT 8 AREA: ±2.528 AC	
BIKE PARKING SUMMARY	
SHORT-TERM BICYCLE SPACES (5% OF 419) (5,106.4.1.1) 21 LONG-TERM BICYCLE SPACES (5% OF 419) (5,106.4.1.2) 21 RETAIL BUILDING w/ INTERNAL 6-BIKE STORAGE 6	
CALGREEN REQUIREMENTS	
CLEAN AIR / CARPOOL / ELECTRIC VEHICLE (8% OF 419) (5,106.5.2) 34 ELECTRIC VEHICLE CHARGING CAPABLE (8% OF 419) (5,106.5.3.3) 26	



TSD ENGINEERING, INC.
expect more.
785 Orchard Drive, Suite #110
Folsom, CA 95630
Phone: (916) 608-0707
Fax: (916) 608-0701

SP-1

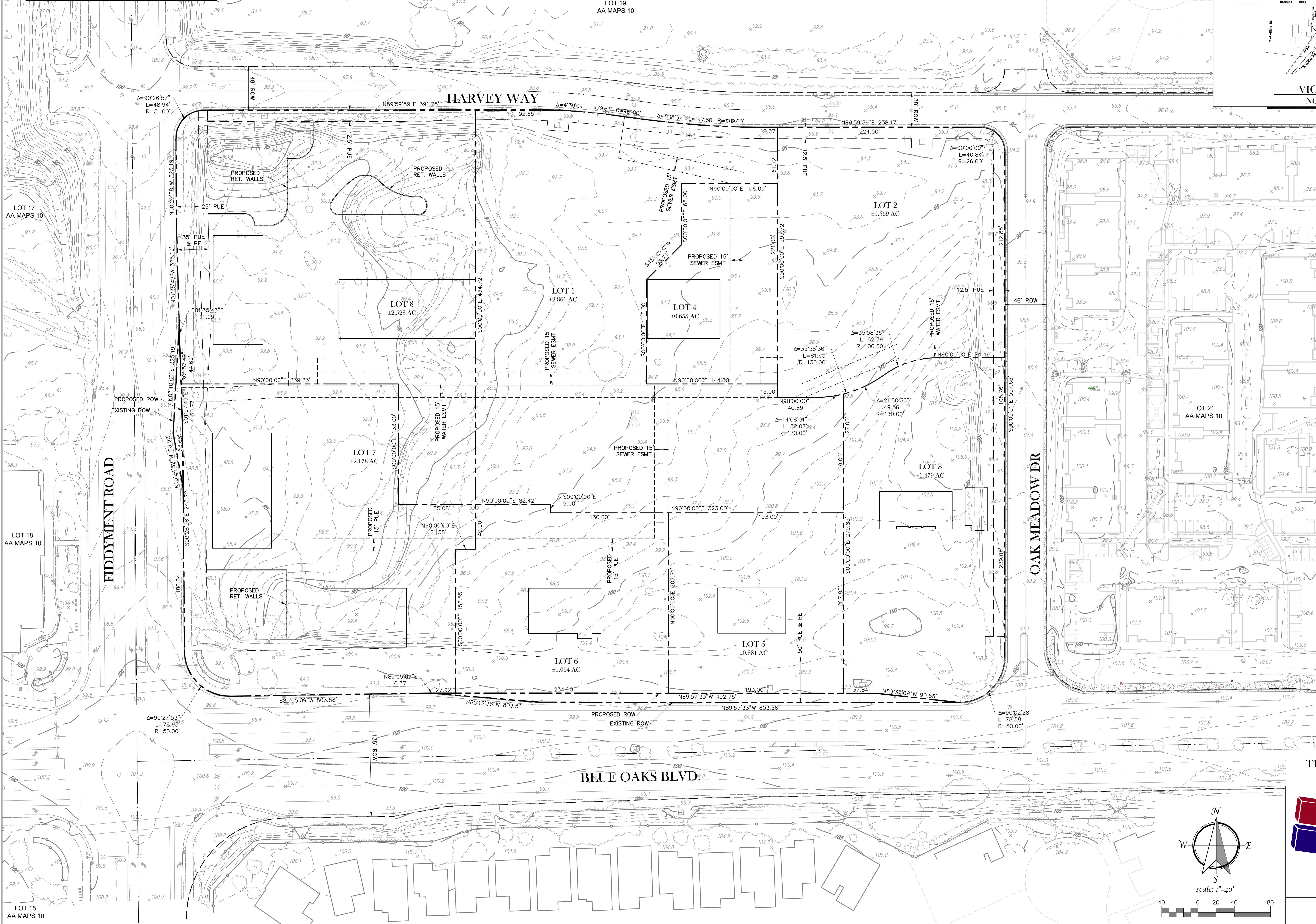
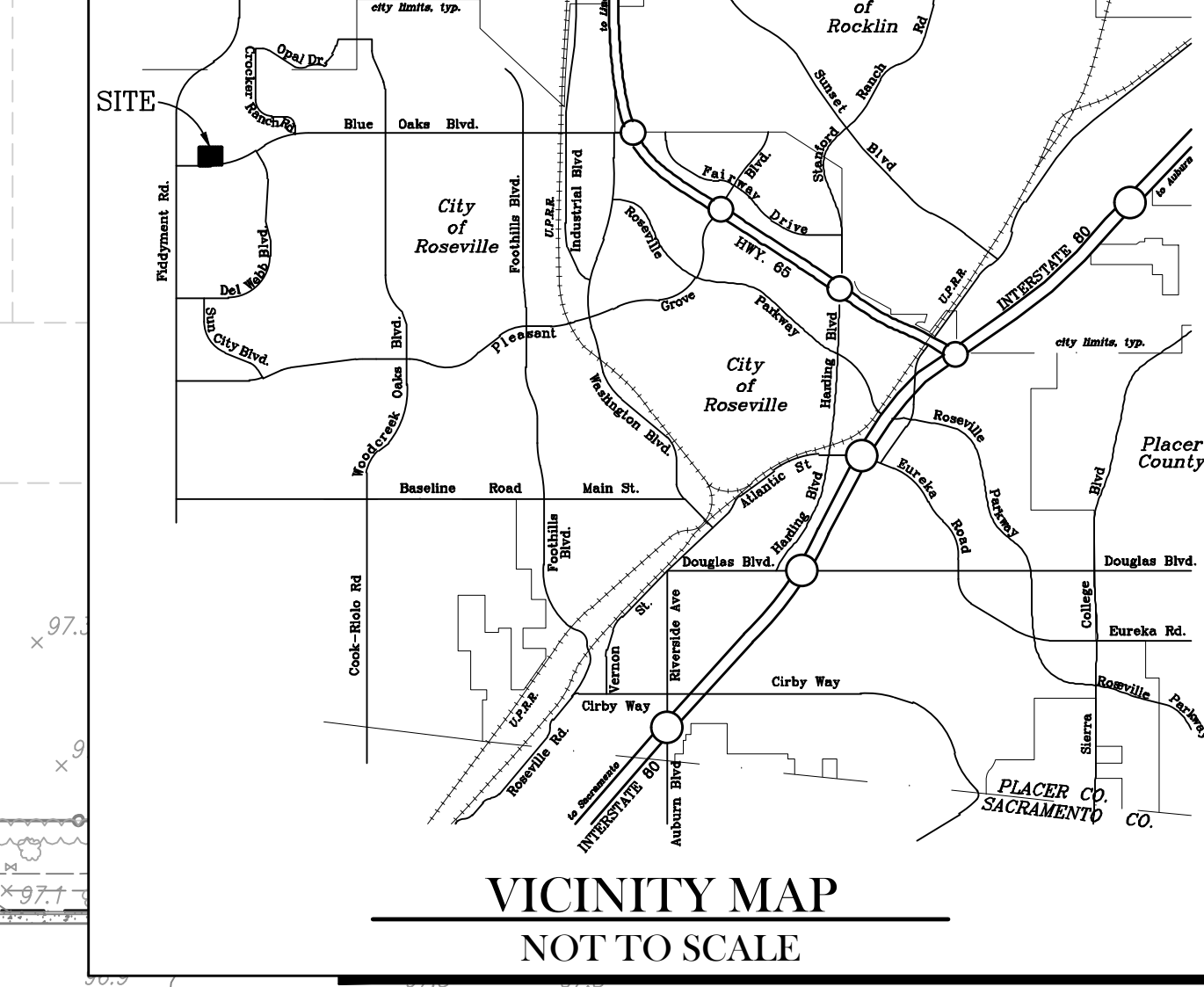
- GENERAL NOTES
1. THIS TENTATIVE PARCEL MAP SUBDIVIDES LOT 22 OF BOOK AA OF MAPS, AT PAGE 10, RECORDS OF PLACER COUNTY.
 2. PARCEL DIMENSIONS AND AREAS ARE APPROXIMATE.
 3. PARCEL LINES AND AREAS MAY BE ADJUSTED AT THE TIME OF THE FINAL PARCEL MAP PROVIDED NO NEW ADDITIONAL PARCELS ARE CREATED, SUBJECT TO THE APPROVAL OF THE CITY OF ROSEVILLE.
 4. THE FINAL MAPPING AND SUBSEQUENT DEVELOPMENT OF LOTS MAY BE PHASED IN ANY SEQUENCE PROVIDED EACH PHASE PROVIDES FOR ACCESS AND FOR BACKBONE INFRASTRUCTURE, SUBJECT TO THE APPROVAL OF THE CITY OF ROSEVILLE.
 5. THE EXTENT OF CONSTRUCTION OF PUBLIC STREETS MAY ALSO BE PHASED, SUBJECT TO THE APPROVAL OF THE CITY OF ROSEVILLE.
 6. PURSUANT TO GOVERNMENT CODE SECTION 66456.1, THE SUBDIVIDER MAY FILE MULTIPLE FINAL MAPS BASED UPON THIS TENTATIVE PARCEL MAP. THE FILING OF A FINAL MAP ON A PORTION OF THIS TENTATIVE PARCEL MAP SHALL NOT INVALIDATE ANY PART OF THIS TENTATIVE PARCEL MAP.
 7. RECIPROCAL ACCESS, PARKING, DRAINAGE, AND UTILITY INFRASTRUCTURE AGREEMENTS ARE TO BE RECORDED WITH THE FILING OF EACH PARCEL MAP RELATING TO THIS TENTATIVE PARCEL MAP.
 8. EASEMENTS TO ACCOMMODATE NEW PUBLIC UTILITY IMPROVEMENTS, ACCESS REQUIRED FOR PARCEL DEVELOPMENT, OR OTHER SIMILAR MAPPING REQUIREMENTS NEEDED TO ACCOMPLISH THE FINAL DESIGN MAY BE ADDED PRIOR TO EACH FINAL MAP BASED ON THIS TENTATIVE PARCEL MAP.

TENTATIVE PARCEL MAP

THE PLAZA AT BLUE OAKS

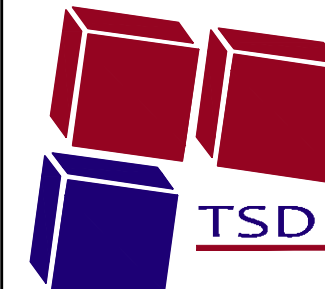
1950 BLUE OAKS BLVD
FIDDYMENT F-31
ROSEVILLE, CA

CC EXHIBIT C



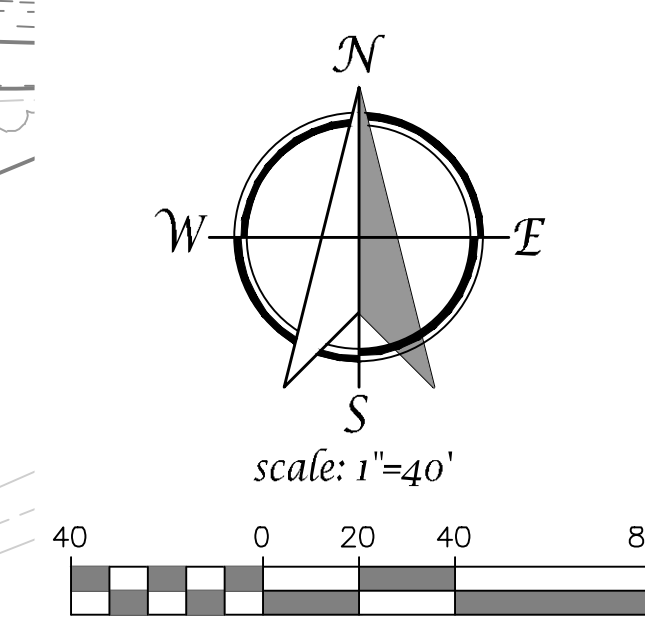
PROJECT SUMMARY	
OWNER	WEST ROSEVILLE DEVELOPMENT CO. 4670 WILLOW ROAD, SUITE 200 PLEASANTON, CA 94588 ATTN: JOE ZAWIDSKI joezawidski@hotmail.com
APPLICANT/DEVELOPER	FIDDYMENT F-31 RETAIL, LLC 4670 WILLOW ROAD, SUITE 200 PLEASANTON, CA 94588 ATTN: JOE ZAWIDSKI joezawidski@hotmail.com
ENGINEER	TSD ENGINEERING, INC 785 ORCHARD DRIVE, SUITE 110 FOLSOM, CA 95630 ATTN: CASEY FEICKERT cfeickert@tsdeng.com
PROPOSED USE	COMMERCIAL/RETAIL
ZONING	CC - COMMUNITY COMMERCIAL
NUMBER OF PARCELS	1 EXISTING PARCEL 8 PROPOSED LOTS
ASSESSORS PARCEL NO & AREA	APN: 017-117-093 AREA: ±13.35 AC
PROPOSED LOT 1	AREA: ±2.866 AC
PROPOSED LOT 2	AREA: ±1.569 AC
PROPOSED LOT 3	AREA: ±1.479 AC
PROPOSED LOT 4	AREA: ±0.655 AC
PROPOSED LOT 5	AREA: ±0.881 AC
PROPOSED LOT 6	AREA: ±1.064 AC
PROPOSED LOT 7	AREA: ±2.178 AC
PROPOSED LOT 8	AREA: ±2.528 AC
SERVICE PROVIDERS	
PARKS & RECREATION DISTRICT	
CITY OF ROSEVILLE	
(916) 772-PLAY (7529)	
SCHOOL DISTRICT	
ROSEVILLE CITY SCHOOL DISTRICT	
(916) 771-1600	
ROSEVILLE JOINT UNION HIGH SCHOOL	
(916) 786-2051	
WATER	
CITY OF ROSEVILLE (916) 774-5750	
SANITARY SEWER	
CITY OF ROSEVILLE (916) 774-5750	
STORM DRAIN	
CITY OF ROSEVILLE (916) 774-5780	
SOLID WASTE	
CITY OF ROSEVILLE (916) 774-5780	
GAS	
PG&E (916) 386-5722	
ELECTRIC	
ROSEVILLE ELECTRIC (916) 797-6937	
TELEPHONE	
CONSOLIDATED COMMUNICATIONS	
(916) 780-8000	
CABLE	
COMCAST 1 (800) 266-2278	
POLICE DEPARTMENT	
CITY OF ROSEVILLE (916) 774-5800	
FIRE DEPARTMENT	
CITY OF ROSEVILLE (916) 774-5000	

TENTATIVE PARCEL MAP
MARCH 16, 2020

**TSD ENGINEERING, INC.**
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Fax: (916) 608-0701

TPM-1



PRELIMINARY GRADING & DRAINAGE PLAN
THE PLAZA AT BLUE OAKS
1950 BLUE OAKS BLVD
FIDDYMENT F-31
ROSEVILLE, CA

CC EXHIBIT D

GRADING SECTION
SCALE: 1" = 20'-0"
VERTICAL: 1:1

GRADING SECTION
SCALE: 1" = 20'-0"
VERTICAL: 1:1

GRADING SECTION
SCALE: 1" = 20'-0"
VERTICAL: 1:1

GRADING SECTION
SCALE: 1" = 20'-0"
VERTICAL: 1:1

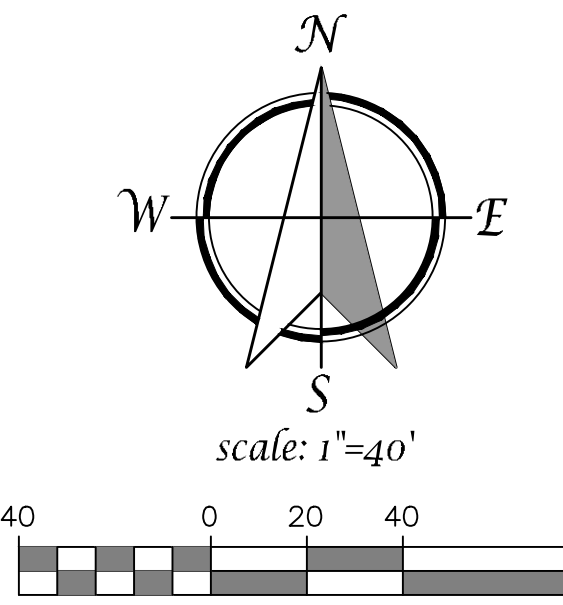
GRADING SECTION
SCALE: 1" = 20'-0"
VERTICAL: 1:1

LEGEND		
DESCRIPTION	PROPOSED	EXISTING
DESIGN ELEVATION	130.0 FG	(98.0) FF
CONTOUR	99	99
STORM DRAIN	100	100
MANHOLE	●	●
DROP INLET	■	■
GRADE BREAK	≡	≡
OVERLAND RELEASE	→	→

FLOOD ZONE
ZONE X (AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOOD-PLAIN) PER THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP, MAP NO. 06061C0394 F, DATED JUNE 8, 1998.

EARTHWORK
(FOLLOWING NUMBERS ARE FOR PERMITTING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR THEIR OWN EARTH WORK QUANTITIES)
OUT: ±24,000 CUBIC YARDS
FILL: ±40,500 CUBIC YARDS
NET: ±16,500 CUBIC YARDS - IMPORT
THE ABOVE EARTHWORK ASSUMES 15% SHRINKAGE. PRIOR TO SITE CONSTRUCTION, CONTRACTOR SHALL PROVIDE CITY INSPECTOR THE LOCATION OF THE IMPORT (OR EXPORT) SITE AND THE ASSOCIATED GRADING PERMIT FOR THE CORRESPONDING SITE.

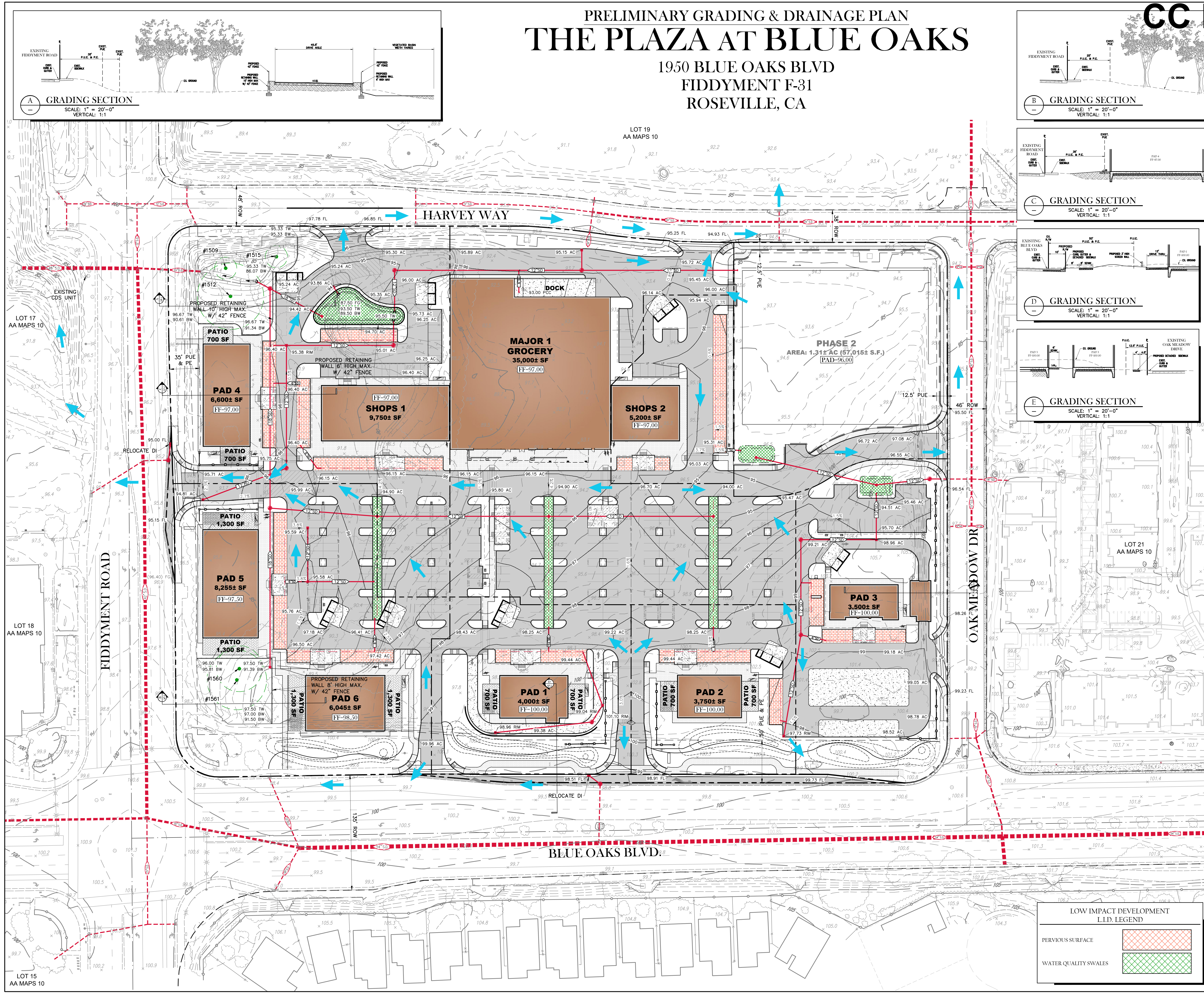
- GRADING NOTES**
- ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE.
 - THE PROPOSED UTILITIES AND INFRASTRUCTURE SHOWN ARE CONCEPTUAL ONLY AND ARE SUBJECT TO REVISION.
 - UTILITIES MAY BE PHASED DEPENDING UPON THE DEVELOPMENT SEQUENCE OF THE PROJECT, SUBJECT TO THE REVIEW OF THE CITY OF ROSEVILLE.
 - THE EXISTING GROUND CONTOURS SHOWN ON THIS EXHIBIT REPRESENT THE EXISTING GRADE CONDITION AND ARE FOR PLANNING LEVEL STUDIES ONLY.
 - THE CONCEPTUAL GRADING PLAN IS BASED ON A CONCEPTUAL SITE PLAN AND IS SUBJECT TO CHANGE.
 - FINAL SITE DESIGN MAY ALTER THE GRADING AND EARTHWORK DESIGN SHOWN HEREON.



PRELIMINARY
GRADING & DRAINAGE PLAN
MARCH 16, 2020

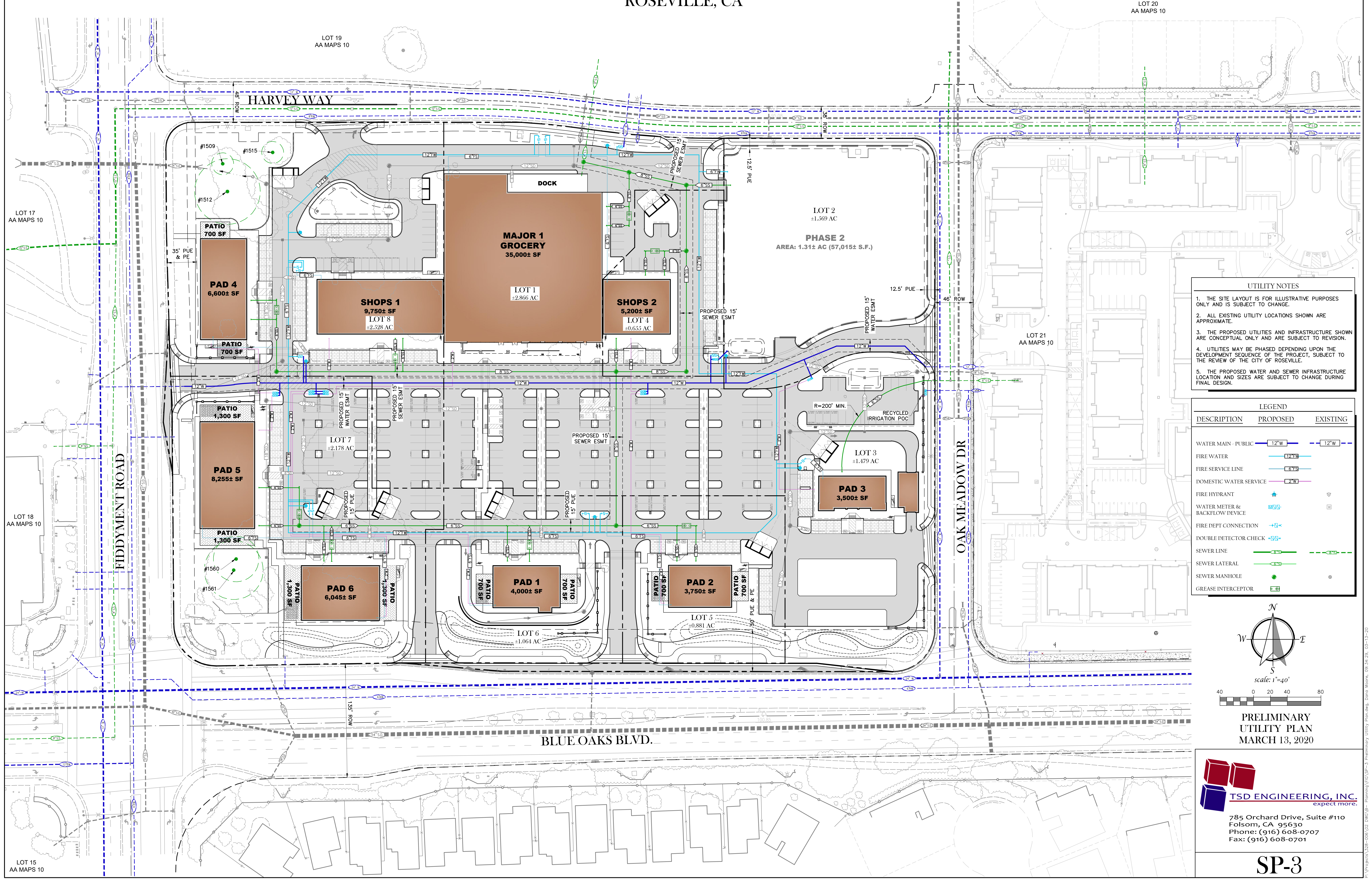
TSD ENGINEERING, INC.
expect more.
785 Orchard Drive, Suite #110
Folsom, CA 95630
Phone: (916) 608-0707
Fax: (916) 608-0701

LOW IMPACT DEVELOPMENT L.I.D. LEGEND	
PERVIOUS SURFACE	
WATER QUALITY SWALES	



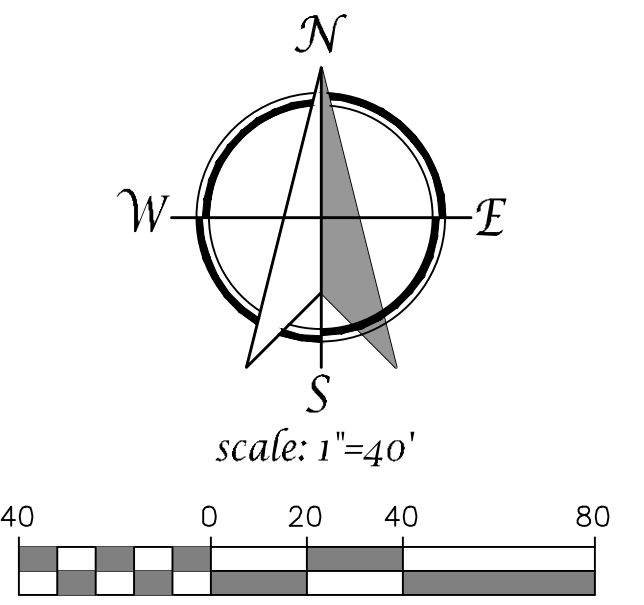
PRELIMINARY UTILITY PLAN
THE PLAZA AT BLUE OAKS
1950 BLUE OAKS BLVD
FIDDYMENT F-31
ROSEVILLE, CA

CC EXHIBIT E



- UTILITY NOTES**
- 1. THE SITE LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY AND IS SUBJECT TO CHANGE.
 - 2. ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE.
 - 3. THE PROPOSED UTILITIES AND INFRASTRUCTURE SHOWN ARE CONCEPTUAL ONLY AND ARE SUBJECT TO REVISION.
 - 4. UTILITIES MAY BE PHASED DEPENDING UPON THE DEVELOPMENT SEQUENCE OF THE PROJECT, SUBJECT TO THE REVIEW OF THE CITY OF ROSEVILLE.
 - 5. THE PROPOSED WATER AND SEWER INFRASTRUCTURE LOCATION AND SIZES ARE SUBJECT TO CHANGE DURING FINAL DESIGN.

LEGEND		
DESCRIPTION	PROPOSED	EXISTING
WATER MAIN - PUBLIC	12" W	12" W
FIRE WATER	12" W	
FIRE SERVICE LINE	8" TS	
DOMESTIC WATER SERVICE	2" W	
FIRE HYDRANT		
WATER METER & BACKFLOW DEVICE		
FIRE DEPT CONNECTION	+5"	
DOUBLE DETECTOR CHECK	+5"	
SEWER LINE	8" TS	8" TS
SEWER LATERAL	4" TS	
SEWER MANHOLE		
GREASE INTERCEPTOR	6" TS	

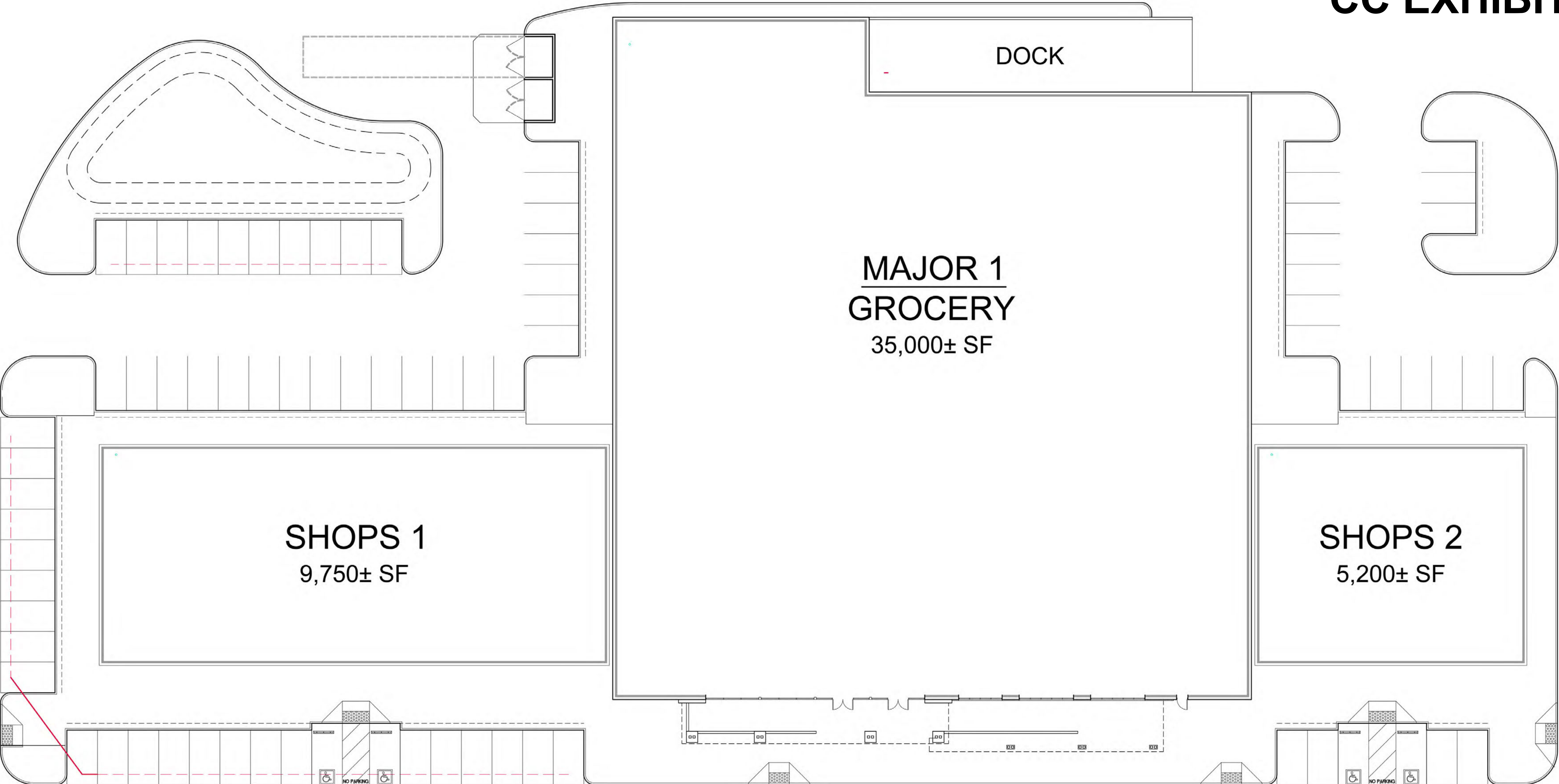


PRELIMINARY
UTILITY PLAN
MARCH 13, 2020

TSD ENGINEERING, INC.
expect more.

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SP-3



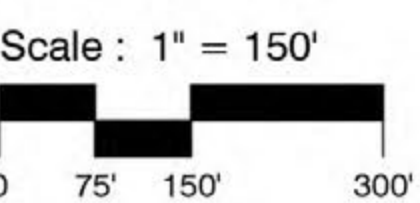
BUILDING ELEVATIONS

MAJOR 1, SHOPS 1&2

DATE: 10/29/2019
MCG JOB #: 16.480.01

DATE	REVISIONS

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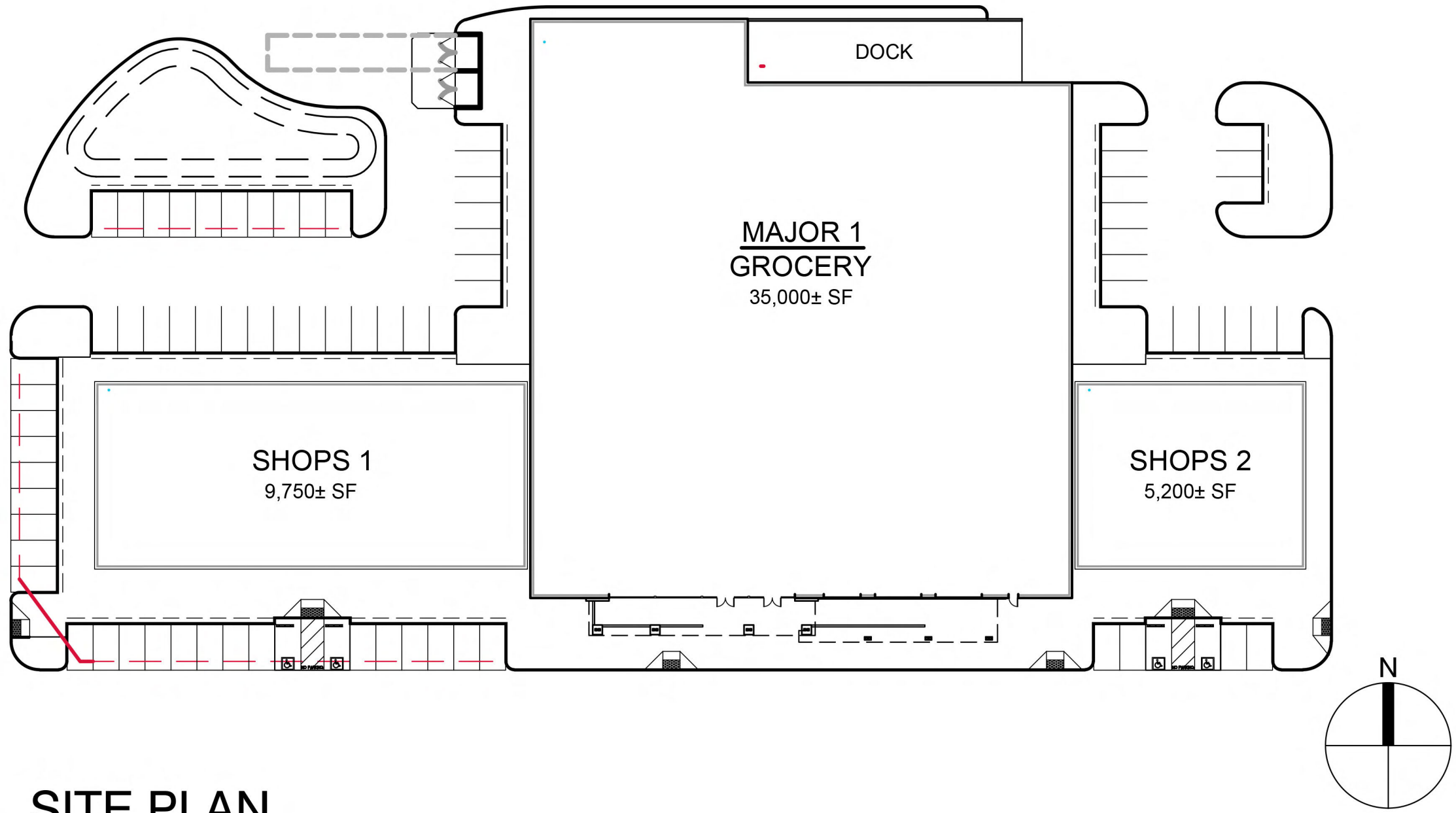
BLUE OAKS PLAZA
ROSEVILLE, CA 95744

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San Francisco, California 94108-4461
415.974.6002 415.974.1556
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EAST ELEVATION



SITE PLAN
NTS



SOUTH ELEVATION

DATE: 10/29/2019
MCG JOB #: 16.480.01

DATE	REVISIONS

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MAJOR 1, SHOPS 1&2

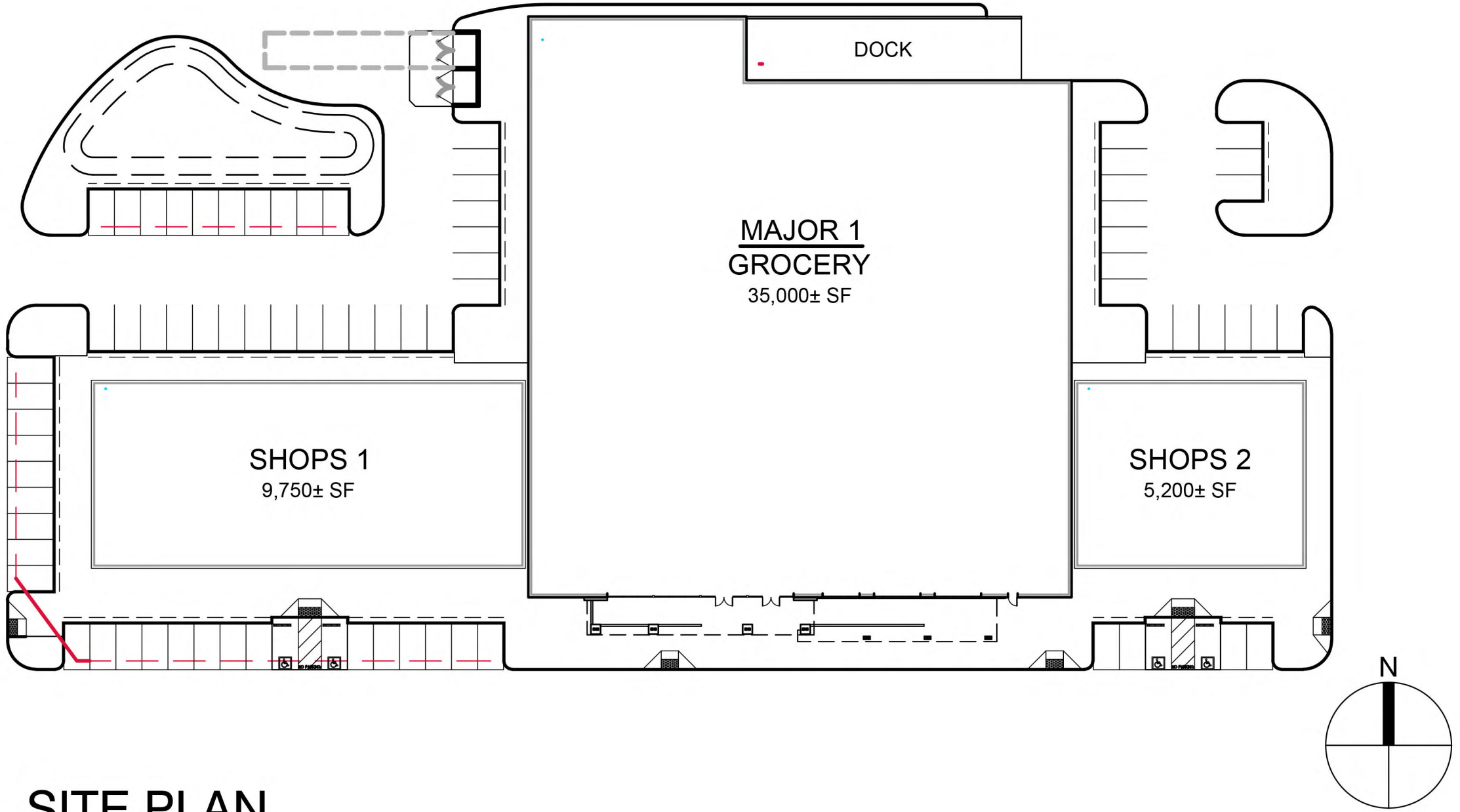
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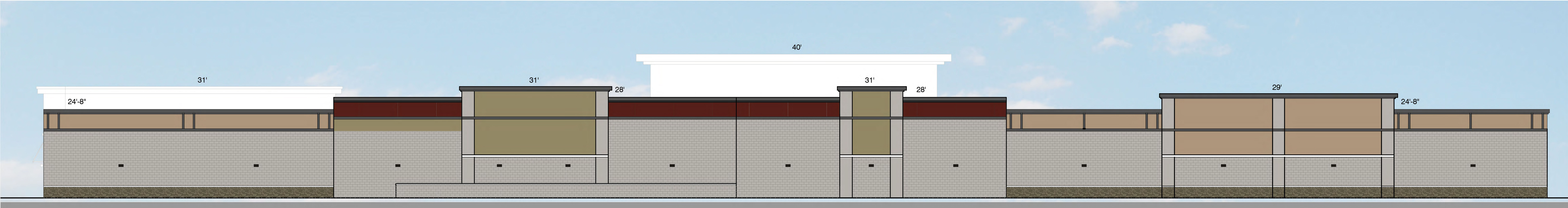




WEST ELEVATION



SITE PLAN
NTS



NORTH ELEVATION

BUILDING ELEVATIONS

MAJOR 1, SHOPS 1&2

DATE: 10/29/2019
MCG JOB #: 16.480.01

DATE	REVISIONS

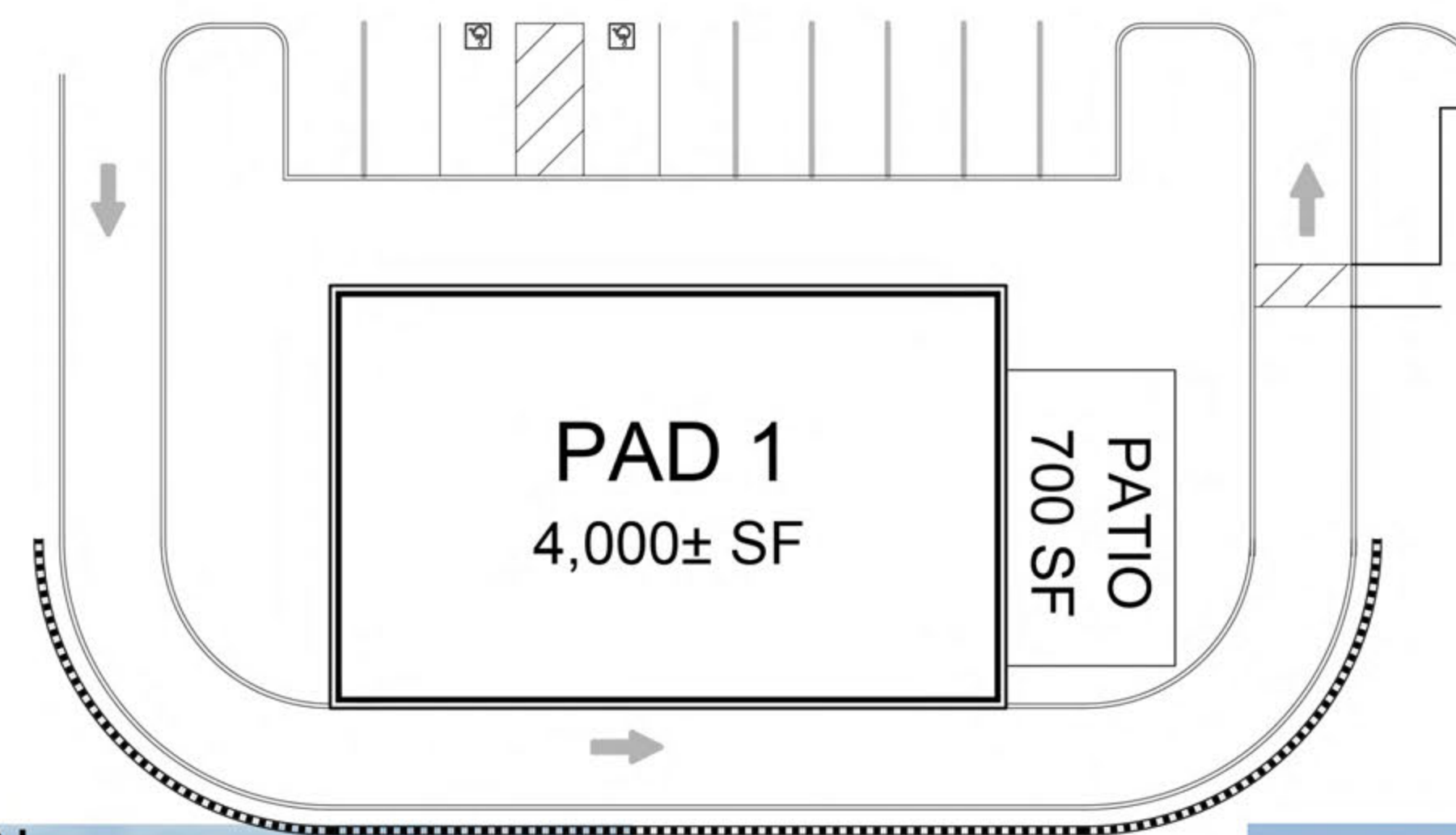
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Scale : 3/32" = 1'-0"
0 5'-4" 10'-8" 21'-4"

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DATE: 12/04/2017
MCG JOB #: 16.480.01

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BUILDING ELEVATIONS

Scale : 3/16" = 1'-0"
0 5'-4" 10'-8" 21'-4"

PAD 1

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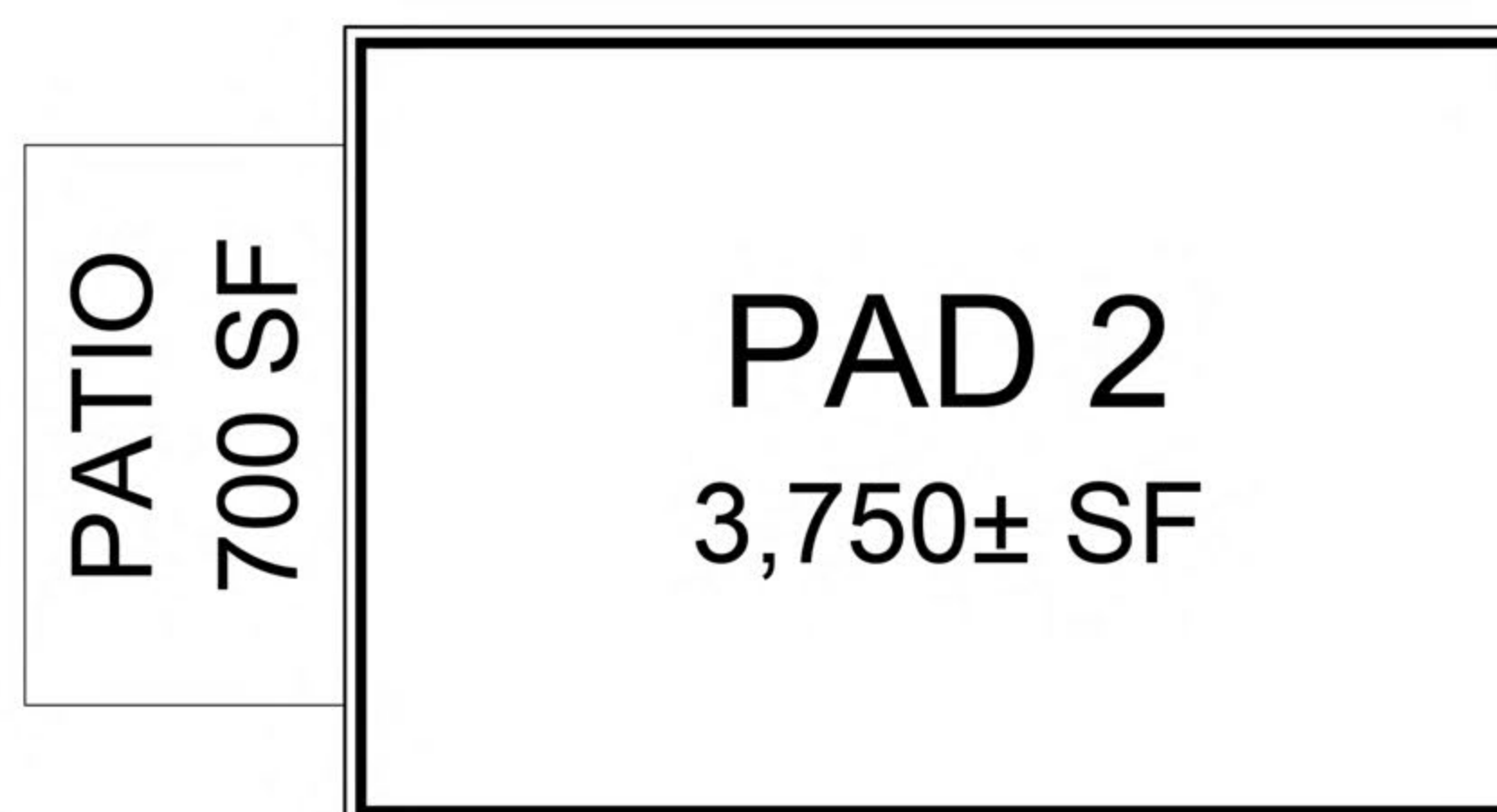




NORTH ELEVATION



WEST ELEVATION



SITE PLAN
NTS



SOUTH ELEVATION



EAST ELEVATION

BUILDING ELEVATIONS

PAD 2

DATE: 12/04/2017
MCG JOB #: 16.480.01

DATE	REVISIONS

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Scale : 3/16" = 1'-0"
0 5'-4" 10'-8" 21'-4"

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NORTH ELEVATION



EAST ELEVATION



WEST ELEVATION



SOUTH ELEVATION

PATIO
700 SF

PAD 4
7,200± SF

PATIO
700 SF

SITE PLAN
NTS

BUILDING ELEVATIONS

PAD 4

BLUE OAKS PLAZA
ROSEVILLE, CA 95744

DATE: 11/27/2017
MCG JOB #: 16.480.01

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Scale : 3/16" = 1'-0"
0 5'-4" 10'-8" 21'-4"

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NORTH ELEVATION



SOUTH ELEVATION



WEST ELEVATION

PATIO
1,300 SF

PAD 5
8,255± SF

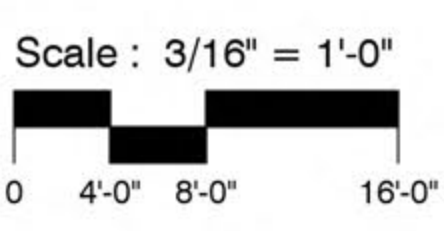


EAST ELEVATION

SITE PLAN
NTS

BUILDING ELEVATIONS

PAD 5



DATE:	11/27/2017
MCG JOB #:	16.480.01
DATE	REVISIONS

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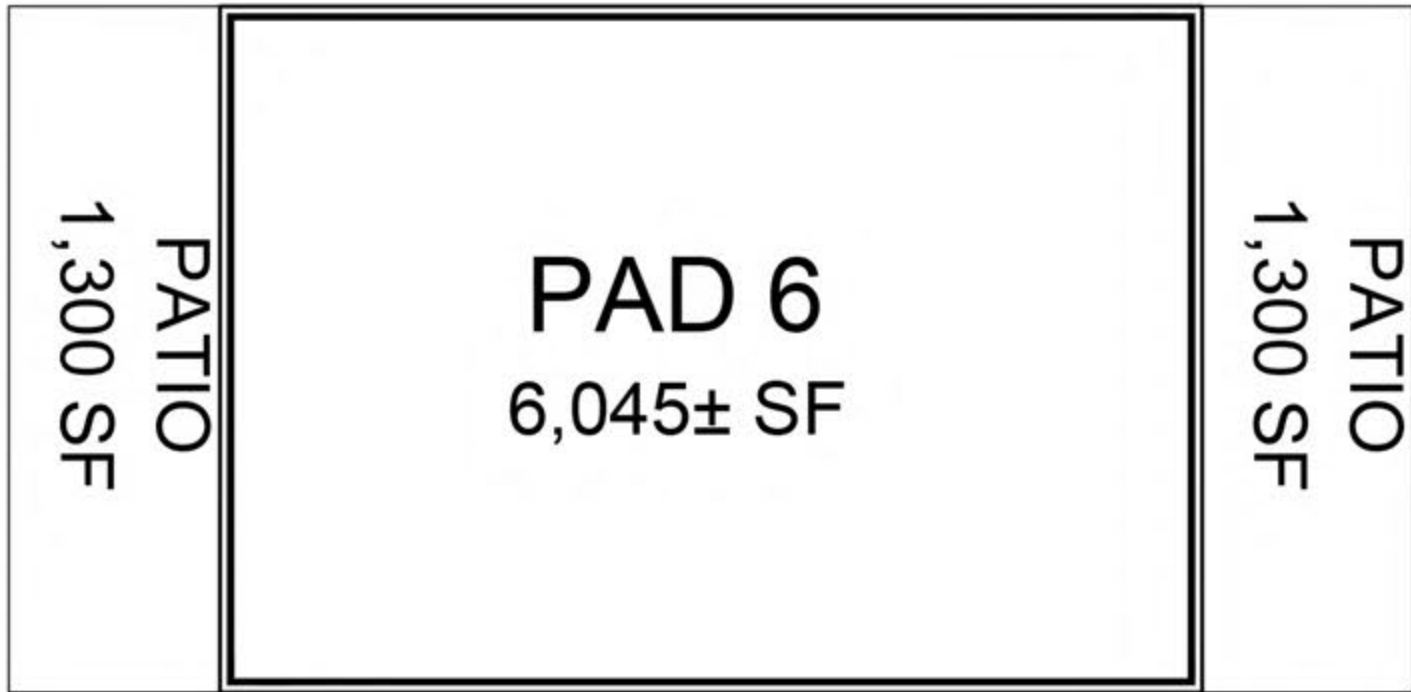




NORTH ELEVATION



WEST ELEVATION



SITE PLAN
NTS



SOUTH ELEVATION



EAST ELEVATION

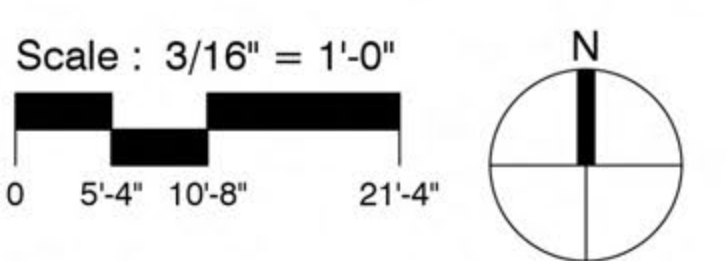
BUILDING ELEVATIONS

PAD 6

DATE: 02/20/2018
MCG JOB #: 16.480.01

DATE	REVISIONS

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PAINTS



P1
BENJAMIN MOORE,
#AF100, PASHMINA



P2
BENJAMIN MOORE,
#201, GOLD LEAF



P3
BENJAMIN MOORE
#420, AGAVE



P4
BENJAMIN MOORE
#AF1, KONA



P5
BENJAMIN MOORE,
#2115-20, INCENSE STICK



AW1 UNITY LEAF



P6
BENJAMIN MOORE,
#CW250, CARRIAGE RED



P7
BENJAMIN MOORE,
#AF185, VENETIAN PORTICO



P8
BENJAMIN MOORE,
#HC166, KENDALL CHARCOAL

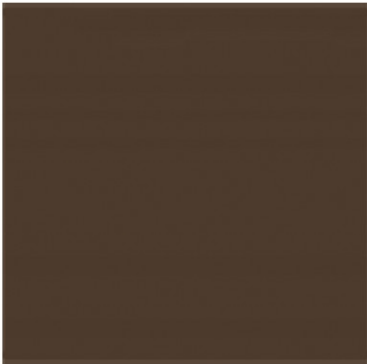


P9
BENJAMIN MOORE,
#F705, CINDER



AW2 EMBER

STOREFRONT



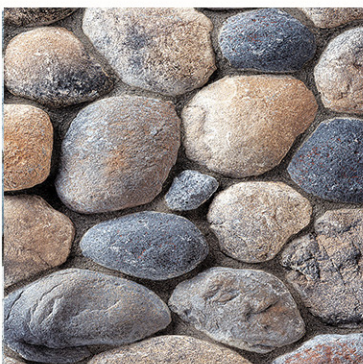
SF1
KAWNEER
ANODIZED #28 MEDIUM BRONZE

BRICK WALL



W1
BELDEN BRICK
BERWICK BLEND

STONE WALL



W2
CORONADO
RIVER ROCK,
RENO BLEND

METAL GRILLE



G1
BOK MODERN,
PATTERN #C1, COLOR P5,
POWDER COAT ALUMINUM

MAJOR 1&2, SHOPS 1&2, & PAD BUILDINGS

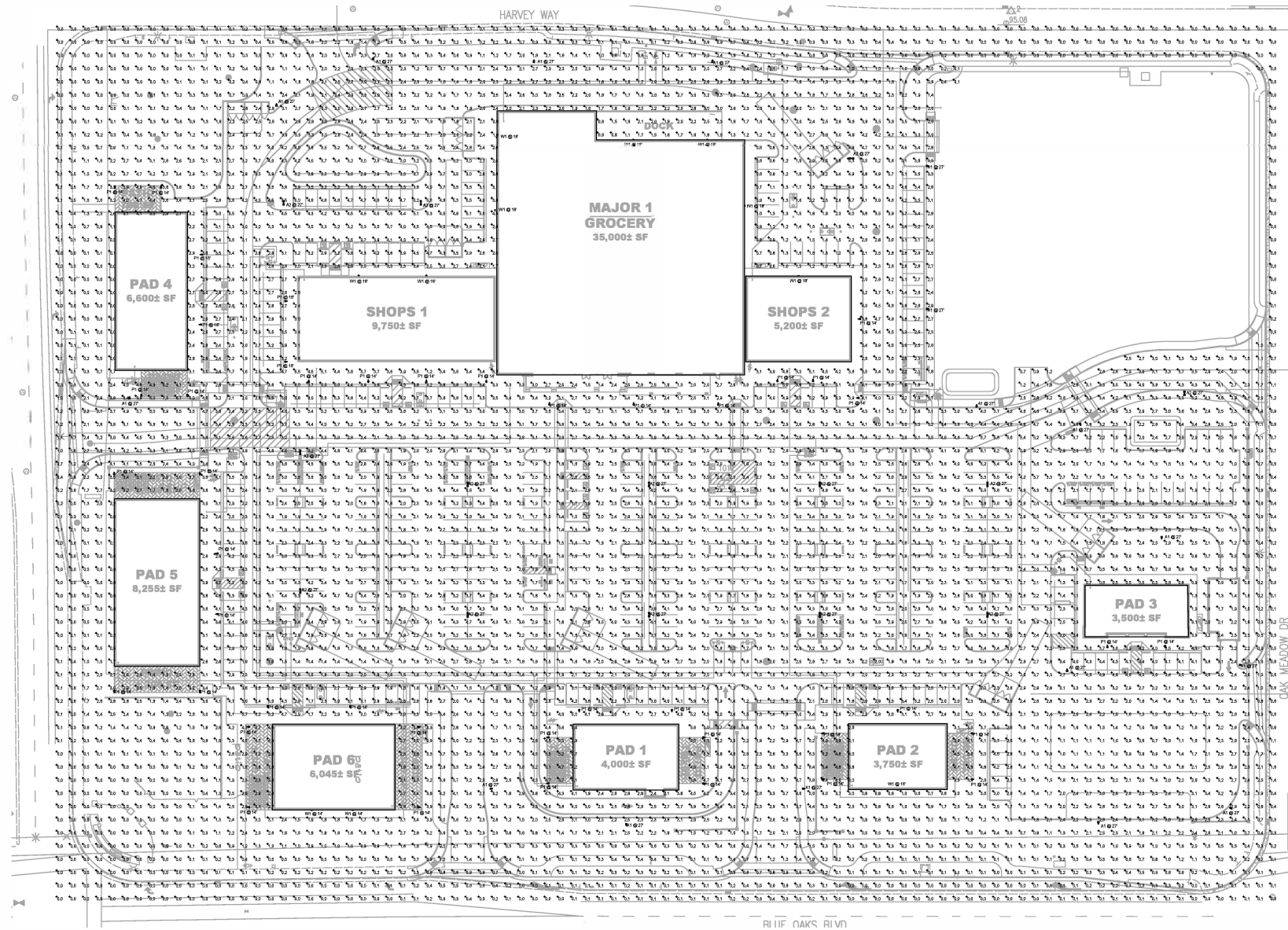
MATERIALS AND COLOR BOARD

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CC EXHIBIT H



Statistics					
Description	Symbol	Avg	Min	Max	Angle
Site	+	2.16	7.38	0.00	NA

DATE: 05/04/2020
 18:12:01

DATE: 18:12:01

DATE: 18:12:01

DATE: 18:12:01

DATE: 18:12:01

DATE: 18:12:01

DATE: 18:12:01

DATE: 18:12:01

DATE: 18:12:01

DATE: 18:12:01

SITE LIGHTING PHOTOMETRIC PLAN

Scale: 1" = 30'
 0' 10' 20' 30'

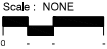
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 ☎ 415.974.0002 ☎ 415.974.1555
mgarchitects.com



Schedule											
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	File Name	Lumens Per Lamp	Light Loss Factor	Wattage
	A2	14	EATON-MSGRAV-EDISON (FORMER COOPER LIGHTING)	GLEDIAF-034-LED-E1-T3	GALLERIE AREA AND ROADWAY LUMINAIRE (3) 70 CRI 4000K 1000mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS Retail, Roadway, Sidewalk, Site, Street, Substation, Security, Corrosion Resistant, Vandal Resistant, Wet Location ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING LAB LUMEN STANDARDS IN GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET		48	GLEDIAF-034-LED-E1-T3.mlx	388	0.91	332
		17	EATON-MSGRAV-EDISON (FORMER COOPER LIGHTING)	GLEDIAF-034-LED-E1-T3	GALLERIE AREA AND ROADWAY LUMINAIRE (3) 70 CRI 4000K 1000mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS Retail, Roadway, Sidewalk, Site, Street, Substation, Security, Corrosion Resistant, Vandal Resistant, Wet Location ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING LAB LUMEN STANDARDS IN GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET		48	GLEDIAF-034-LED-E1-T3.mlx	388	0.91	166
	A1										
		44	EATON-INVUE (FORMER COOPER LIGHTING)	EMAL050-LED-E1-M00	EPIC MODERN MEDIUM DECORATIVE LED LUMINAIRE (3) LIGHTSQUARES WITH ADJUSTED OPTICS-TYPE 5 SQUARE MEDIUM	(B3) 4000K CCT, 70 CRI LEDS ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING LAB LUMEN STANDARDS IN GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET Hospitality, Hotel, Industrial, Institutional, Library, Manufacturing, Office, Parking, Parks, Pathway, Pedestrian, Prison, Recreation, Residential, Retail, Roadway, Sidewalk, Site, Street, Substation, Utility Walkway, Warehouse, Wet Location	63	EMAL050-LED-E1-M00.mlx	145	0.91	75.2
	P1										
		11	EATON-MSGRAV-EDISON (FORMER COOPER LIGHTING)	BSAIF-1004-LED-E1-TW	IMPACT ELITE LED QUARTER SPHERE LUMINAIRE LIGHT SQUARE WITH ACCU-LED OPTICS-TYPE IV MDE	(16) 4000K CCT, 70 CRI LEDS Wet Location ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING LAB LUMEN STANDARDS IN GONIOPHOTOMETER	16	BSAIF-1004-LED-E1-TW.mlx	369	0.91	54.8
	W1										

LIGHT FIXTURE SCHEDULE



BLUE OAKS PLAZA
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mcp@mcgarchitects.com



[illegible][illegible]

FIG. 7

CONCENTRATIONS

HOUSE

NO SECTION

SHED

MOUNTING CRIPION

POWER AND LINERS BY BAR COUNT (7 LBS. LIGHTBARE)

Power	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100																																																																																														
Power (Watts)	200W	250W	300W	350W	400W	450W	500W	550W	600W	650W	700W	750W	800W	850W	900W	950W	1000W	1050W	1100W	1150W	1200W	1250W	1300W	1350W	1400W	1450W	1500W	1550W	1600W	1650W	1700W	1750W	1800W	1850W	1900W	1950W	2000W	2050W	2100W	2150W	2200W	2250W	2300W	2350W	2400W	2450W	2500W																																																																																													
Power (HP)	0.27	0.34	0.41	0.48	0.55	0.62	0.69	0.76	0.83	0.90	0.97	1.04	1.11	1.18	1.25	1.32	1.39	1.46	1.53	1.60	1.67	1.74	1.81	1.88	1.95	2.02	2.09	2.16	2.23	2.30	2.37	2.44	2.51	2.58	2.65	2.72	2.79	2.86	2.93	3.00	3.07	3.14	3.21	3.28	3.35	3.42	3.49	3.56	3.63	3.70	3.77	3.84	3.91	3.98	4.05	4.12	4.19	4.26	4.33	4.40	4.47	4.54	4.61	4.68	4.75	4.82	4.89	4.96	5.03	5.10	5.17	5.24	5.31	5.38	5.45	5.52	5.59	5.66	5.73	5.80	5.87	5.94	6.01	6.08	6.15	6.22	6.29	6.36	6.43	6.50	6.57	6.64	6.71	6.78	6.85	6.92	6.99	7.06	7.13	7.20	7.27	7.34	7.41	7.48	7.55	7.62	7.69	7.76	7.83	7.90	7.97	8.04	8.11	8.18	8.25	8.32	8.39	8.46	8.53	8.60	8.67	8.74	8.81	8.88	8.95	9.02	9.09	9.16	9.23	9.30	9.37	9.44	9.51	9.58	9.65	9.72	9.79	9.86	9.93	10.00
Power (kW)	0.27	0.34	0.41	0.48	0.55	0.62	0.69	0.76	0.83	0.90	0.97	1.04	1.11	1.18	1.25	1.32	1.39	1.46	1.53	1.60	1.67	1.74	1.81	1.88	1.95	2.02	2.09	2.16	2.23	2.30	2.37	2.44	2.51	2.58	2.65	2.72	2.79	2.86	2.93	3.00	3.07	3.14	3.21	3.28	3.35	3.42	3.49	3.56	3.63	3.70	3.77	3.84	3.91	3.98	4.05	4.12	4.19	4.26	4.33	4.40	4.47	4.54	4.61	4.68	4.75	4.82	4.89	4.96	5.03	5.10	5.17	5.24	5.31	5.38	5.45	5.52	5.59	5.66	5.73	5.80	5.87	5.94	6.01	6.08	6.15	6.22	6.29	6.36	6.43	6.50	6.57	6.64	6.71	6.78	6.85	6.92	6.99	7.06	7.13	7.20	7.27	7.34	7.41	7.48	7.55	7.62	7.69	7.76	7.83	7.90	7.97	8.04	8.11	8.18	8.25																									

[illegible]

DECORATIVE POLES

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE WHY SIZE	WATER USE	DESIGN USE
	ACER RUBRUM ARMSTRONG ARMSTRONG COLUMNAR MAPLE	15 GAL 15'X40'	MOD	STREET TREE
	CEDRUS DEODORA DEODAR CEDAR	15 GAL 35'X65'	LOW	SCREEN TREE
	LAGERSTROEMIA INDICA 'ARAPAH0' CRAPE MYRTLE	15 GAL 15'X20'	LOW	ACCENT TREE
	LAURUS NOBILIS GRECIAN LAUREL	15 GAL 20'X20'	MOD	SCREEN TREE
	MAGNOLIA GRANDIFLORA LITTLE GEM LITTLE GEM MAGNOLIA	24" BOX 15'X20'	LOW	ACCENT TREE
	NYSSA SYLVATICA SOUR GUM	24 BOX 25'X45'	LOW	STREET TREE
	OLEA EUROPAEA 'MAJESTIC BEAUTY' FRUITLESS OLIVE	15 G/VARIES	LOW	ACCENT TREE
	PISTACIA CHINENSIS CHINESE PISTACHE	24" BOX 40'X40'	MOD	SHADE TREE
	TILIA CORDATA GREENSPIRE LITTLE LEAF LINDEN	15 GAL 30' X 40'	MOD	SCREEN TREE
	QUERCUS WISLIZNII INTERIOR LIVE OAK	24" BOX NAT. 50'X60'	LOW	STREET TREE
	ULMUS PARVIFOLIA 'TRUE GREEN' EVERGREEN ELM	24" BOX 30'X35'	MOD	SHADE TREE

NOTE: 33% OF TOTAL TREE QUANTITY SHALL BE 24" BOX.

SHRUBS: BACKGROUND/SCREEN

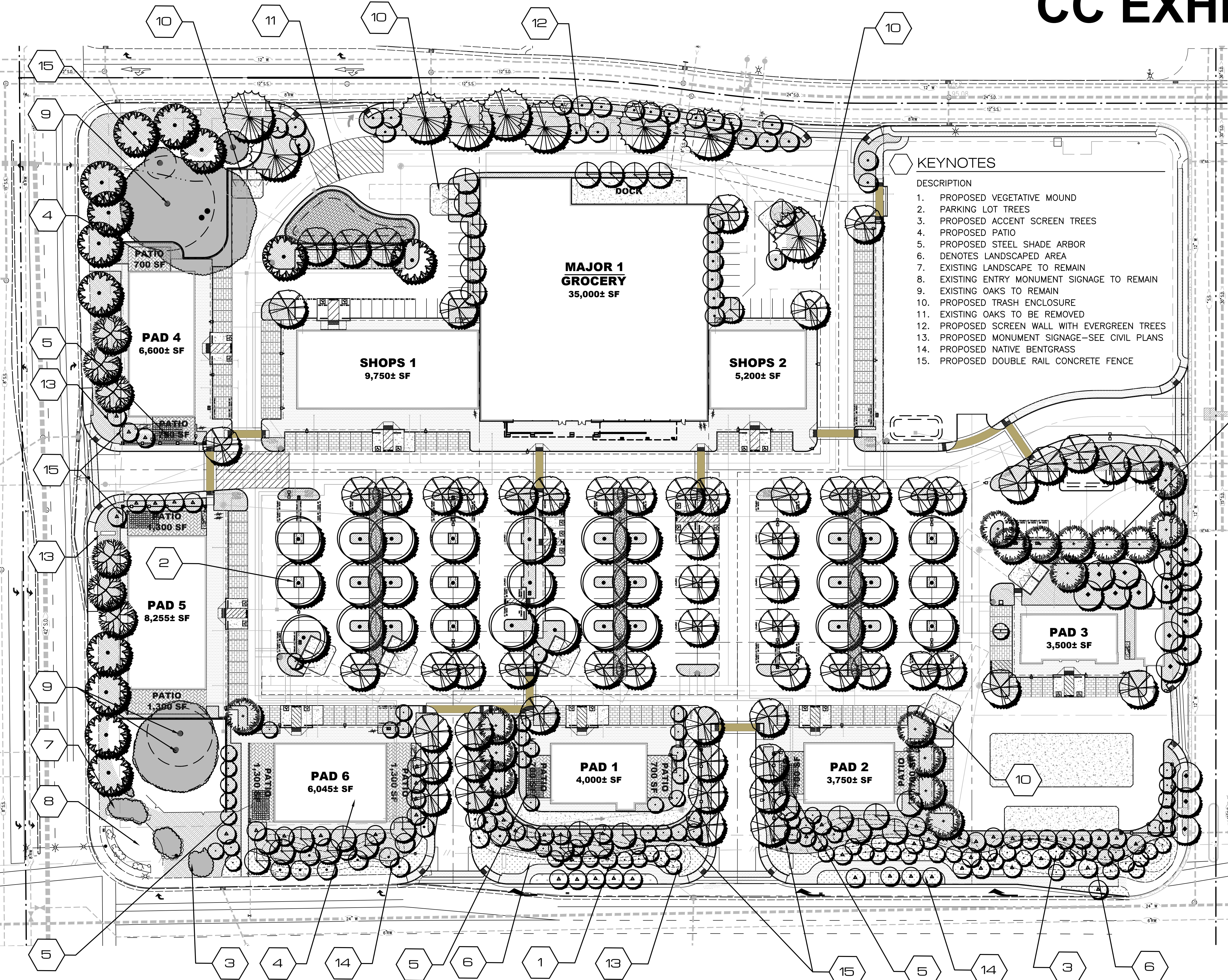
SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	WATER USE
	BACKGROUND / SCREEN SHRUBS - EVERGREEN, LARGE SHRUBS TO 6'-0" USED FOR REDUCING BUILDING MASS OR SCREENING UNDESIRABLE VIEWS.		
	ELAEAGNUS X EBBINGEI GILT EDGE GILT EDGE SILVERBERRY	5 G	LOW
	ARCTOSTAPHYLOS HOWARD MCMINN HOWARD MCMINN MANZANITA	5 G	LOW
	ROSARINUS TUSCAN BLUE TUSCAN BLUE ROSEMARY	5 G	LOW
	HYPERICUM X MOSERIANUM GOLD FLOWER	5 G	MOD
	PODOCARPUS MACROPHYLLUS 'MAKI' SHRUBBY YEW PINE	5 G	MOD
	PRUNUS C. BRIGHT N TIGHT CAROLINA CHERRY	15 G	MOD
	RHAMNUS CALIFORNICA MOUND SAN BRUNO SAN BRUNO COFFEEBERRY	5 G	LOW
	XYLOPSA C. 'COMPACTA' COMPACT XYLOPSA	15 G	LOW

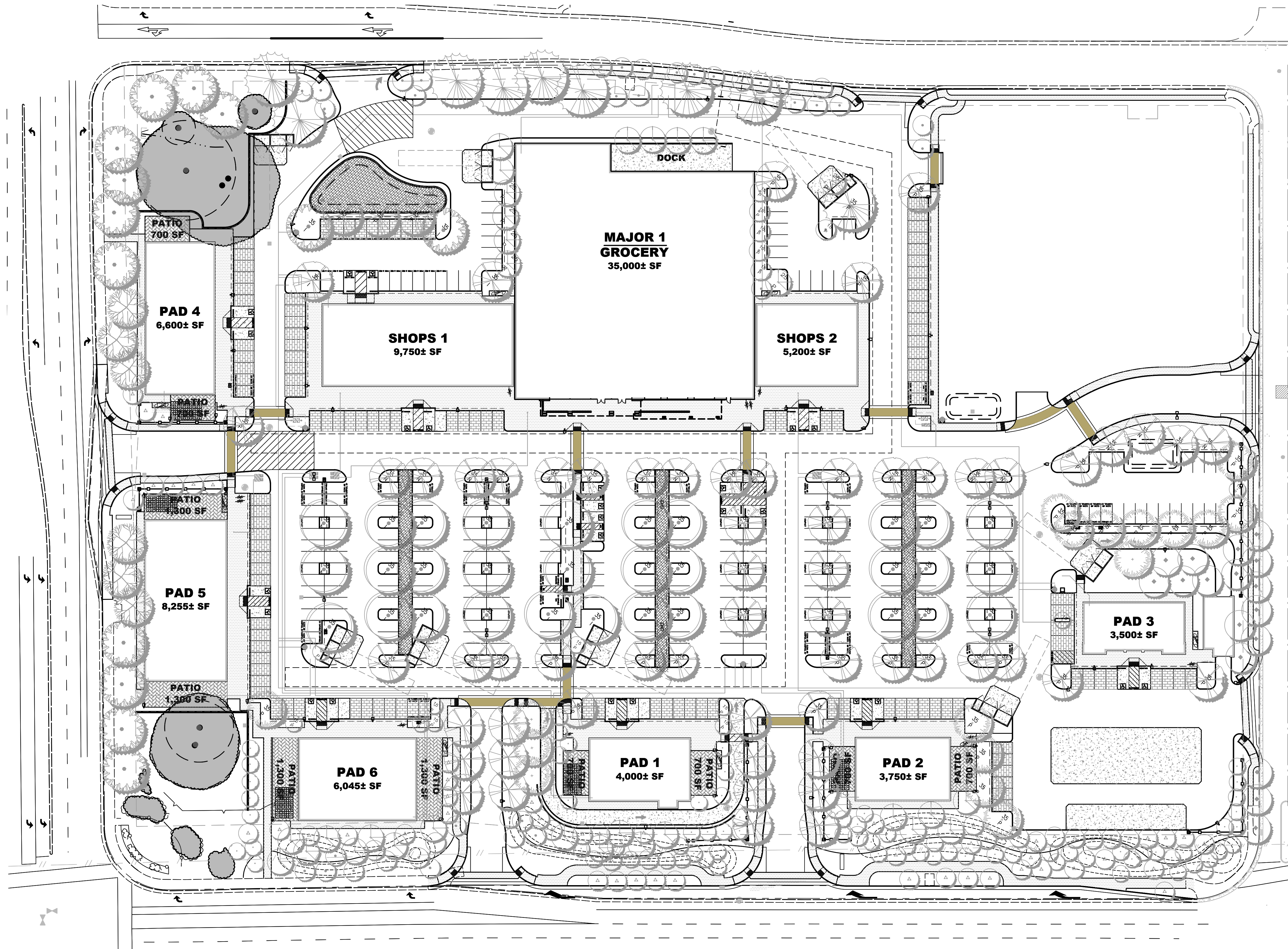
SHRUBS: FACER/FILLER

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	WATER USE
	FACER/FILLER SHRUBS & GRASSES EVERGREEN OR DECIDUOUS SHRUBS TO 4'-0". USED FOR "TERRACING" OF PLANT MATERIAL. SEASONAL COLOR AND SOFTENING OF BUILDING EDGES AND FOUNDATION SHRUBS.		
	AGAVE WEBERI WEBERS AGAVE	5 G	LOW
	CALLISTEMON V. 'LITTLE JOHN' DWARF BOTTLEBRUSH	5 G	LOW
	DIETES BICOLOR FORTNIGHT LILY	5 G	LOW
	LEPTOSPERMUM SCOPARIUM RUBY GLOW RUBY GLOW TEA TREE	5 G	LOW
	EUONYMUS JAPONICA GREENSPIRE GREENSPIRE EUONYMUS	5 G	LOW
	GREVILLEA CANBERRA HUMMINGBIRD BUSH	5 G	LOW
	PINUS MUGO MUGO MUGO MUGO PINE	5 G	LOW
	WESTRINGIA FRUTICOSA COAST ROSEMARY	5 G	LOW
	RHAPHIOLEPIS UMBELLATA SOUTHERN MOON YEDDO	5 G	LOW

SHRUBS AND GROUNDCOVERS

SYMBOL	BOTANICAL NAME COMMON NAME	SIZE	WATER USE
	PERENNIALS, GRASSES, AND GROUND COVER MATERIAL - SMALL SCALE DUE TO PROJECT TYPE, EVERGREEN OR PERENNIAL SHRUBS TO 24" HIGH. USED AS A FILLER BETWEEN SITE WORK EDGES AND FACER SHRUBS.		
	ARCTOSTAPHYLOS U. URSI MANZANITA	1 G	LOW
	BOULEDOIA GRACILIS 'BLONDE AMBITION' BLUE GRAMA GRASS	1 G	LOW
	CISTUS 'SUNSET' MAGENTA ROCKROSE	1 G	LOW
	COPROSMA KIRKII COPROSMA	1 G	LOW
	HYPERICUM CALYCIUM AARONS BEARD	1 G	MOD
	LANTANA MONTEVENDENSIS LANTANA	5 G	LOW
	MUHLBERGIA CAPILLARIS REGAL MIST PINK MUHL	1 G	LOW
	MYOPORUM PARVIFOLIUM CREEPING MYOPORUM	1 G	LOW
	ROSA FLOWER CARPET (WHITE AND RED) FLOWER CARPET ROSE	1 G	MOD
	TRACHELOSPERMUM JASMINODES STAR JASMINE	1 G	MOD
	NATIVE BENTGRASS "NO MOW" OR "MOW FREE" NATIVE FESCUE BLEND	SOD	MOD
	BIOREMEDIATION AREA AND OR WATER QUALITY BASIN		
	JUNCUS EFFUSUS RUSH	1 G	MOD
	CORNUS STOLONIFERA 'KELSEY' DWARF REDTIG DOGWOOD	1 G	MOD
	LOMANDRA LONGIFOLIA BREEZE DWARF MAT RUSH	1 G	LOW



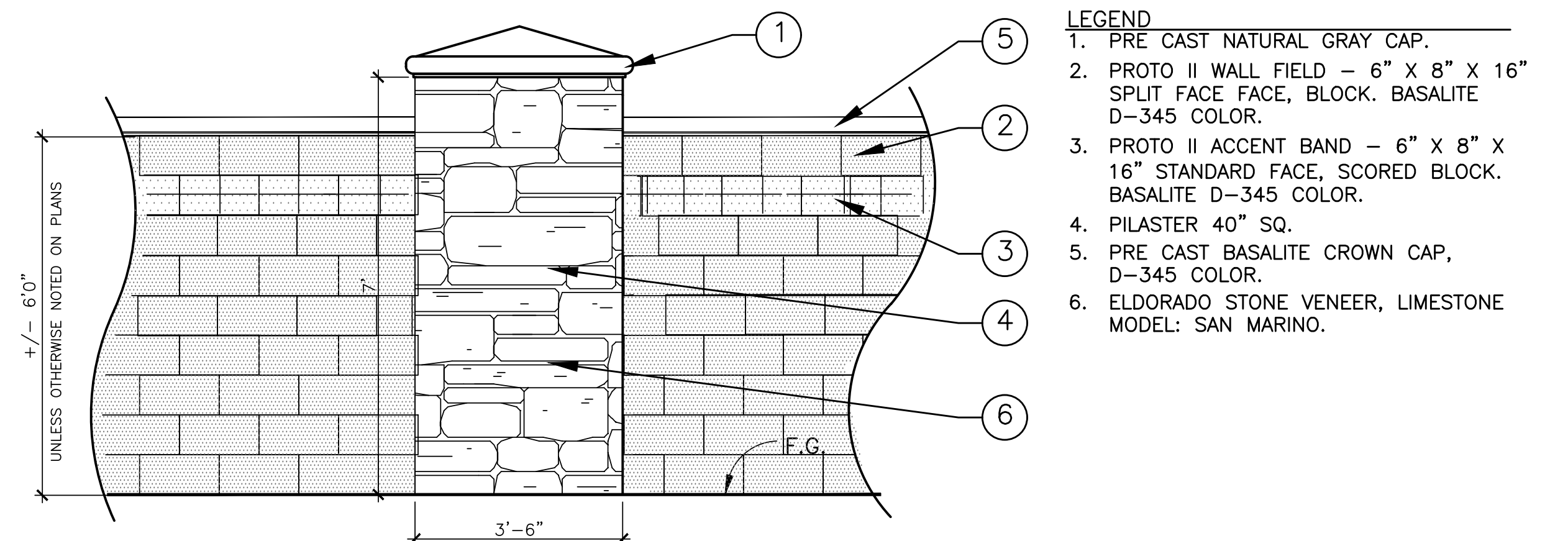


SHADE STUDY CALCULATIONS				
PROJECT:		THE PLAZA AT BLUE OAKS		12.4.2019
OVERALL SITE		QTY.	SQ. FT. AREA	
STANDARD STALLS		352	95,040	
COMPACT STALLS		34	8,568	
HANDICAP STALLS		25	6,300	
TOTAL PAVED PARKING AREA:			109,908	
TOTAL SHADE REQUIRED:		50%	54,954	
TOTAL SHADE PROVIDED:			64,731	
TOTAL SHADE PERCENTAGE			58.9%	
SYMBOL	PATTERN	QTY.	UNIT	TOTAL S.F.
30 TO 35' TREES				
Ulmus p., Quercus w., Cedrus d.	35-I	41	X 961	39,401
	35-P	37	X 481	17,797
	35-N	19	X 240	4,560
25' TO 30' TREES				
Nyssa s.	30-I	0	X 707	0
	30-P	0	X 354	0
	30-N	0	X 177	0
20' TO 25' TREES				
Laurus n.	25-I	0	X 491	0
	25-P	6	X 246	1,476
	25-N	0	X 123	0
15' TO 20' TREES				
	20-I	0	X 314	0
	20-P	0	X 157	0
	20-N	0	X 79	0
10' TO 15' TREES				
Acre r., Olea e., Magnolia g. Little Gem, Lagerstroemia i.	15-I	1	X 177	177
	15-P	15	X 88	1,320
	15-N	0	X 44	0
TOTAL				64,731

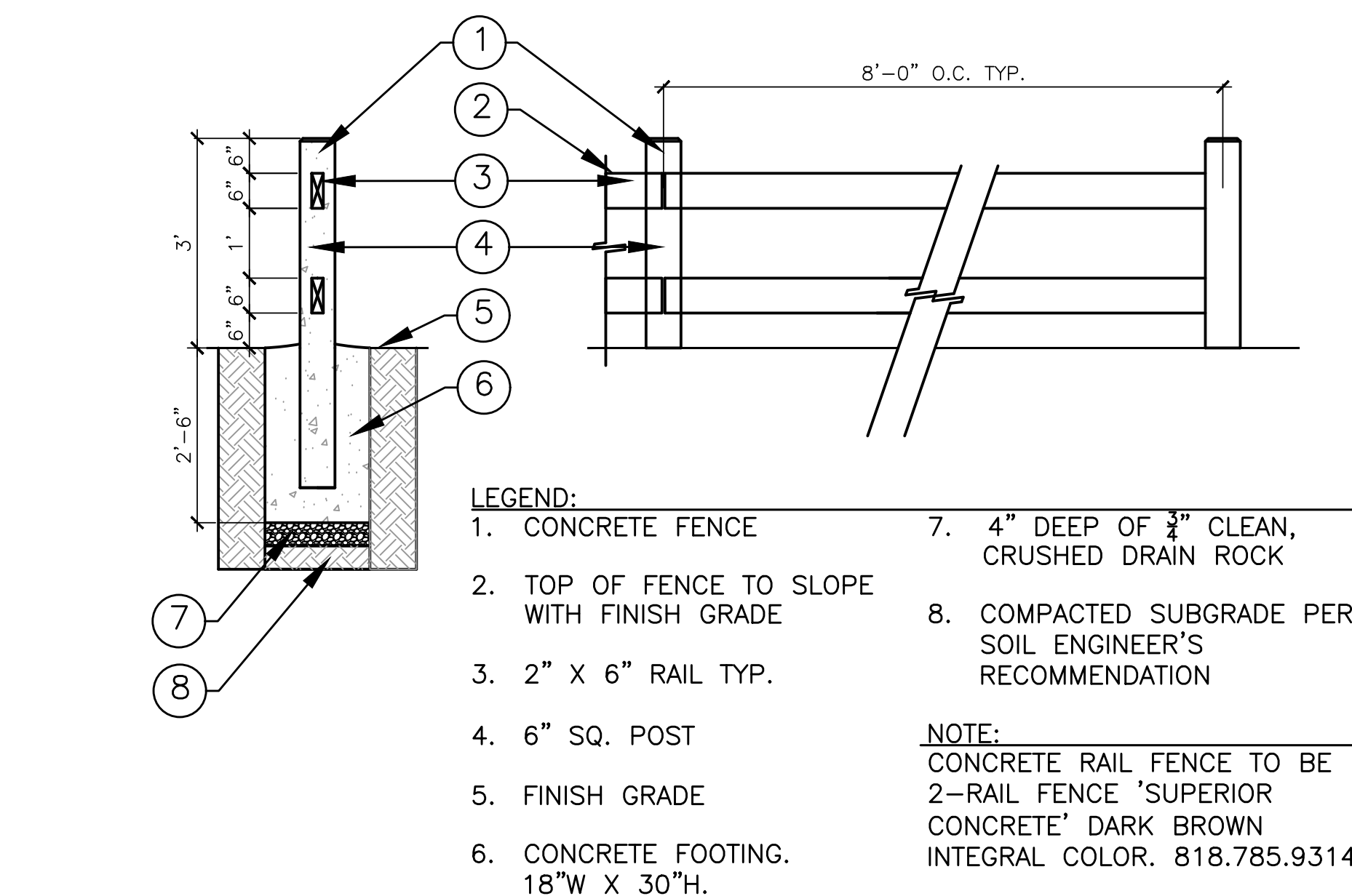
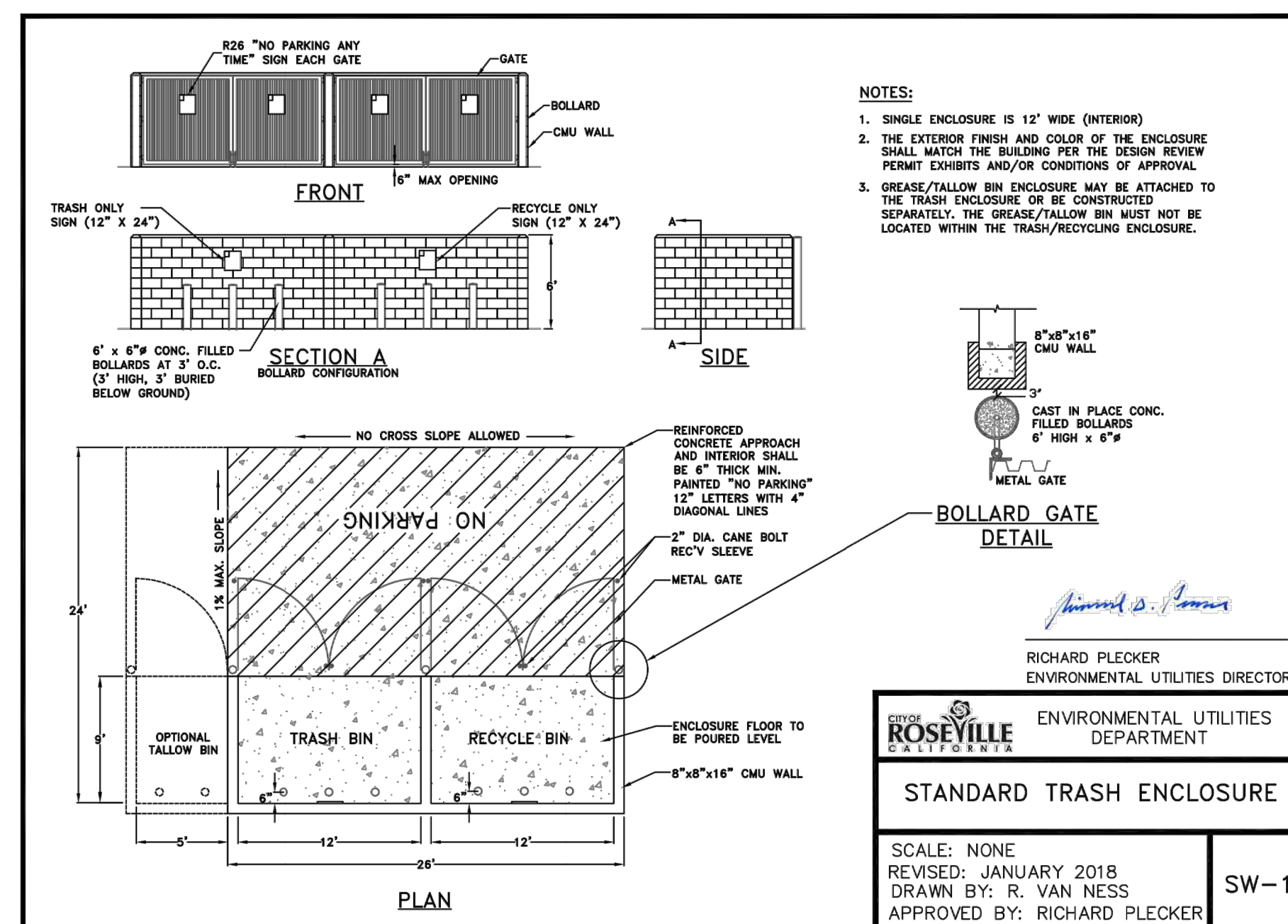




C CONCEPTUAL OUTDOOR PATIO SPACE
SCALE: NTS



A MASONRY WALL - ELEVATION
SCALE: 1/2" = 1'-0"



B CONCRETE RAIL FENCE
SCALE: 1/2" = 1' - 0"



California Tree and Landscape Consulting, Inc.

February 20, 2020

Joseph Zawidski
Signature Homes, Inc.
4670 Willow Road, Suite 200
Pleasanton, California 94588

Via Email: jzawidski@hotmail.com

PROPERTY TRANSITION ARBORIST REPORT

RE: Arborist Report and Tree Inventory for Fiddymment Farms, Unit 17 Project Site
City of Roseville, California

Executive Summary:

Signature Homes, Inc. contacted California Tree and Landscape Consulting, Inc. to document the trees on the property for a better understanding of the existing resource and any potential improvement obstacles that may arise. Signature Homes, Inc. requested an arborist report and tree inventory updates and impact assessment for the property located at Fiddymment Farms, Unit 17, suitable for submittal to the City of Roseville. This is an Updated Arborist Report and Tree Inventory for the filing of plans to develop the property.

Ed Stirtz, ISA Certified Arborist WE0510A, visited the property on February 17, 2020, to provide updated species identification, measurements of DBH and canopy, field condition notes, recommended actions, ratings, and approximate locations for the trees. A total of 26 trees were evaluated on this property, of which 26 are protected trees according to the City of Roseville's Municipal Code. Chapter 19.66, Tree Preservation, defines a "Protected Tree" as any native oak tree equal to or greater than 6 inches diameter at breast height (DBH) measured as a total of a single trunk or multiple trunks. The purpose of this field reconnaissance effort was to identify, inventory, and comment upon the current structure and vigor of the "protected trees" located within and/or overhanging the project site.

The vegetation on site includes those native oak trees as identified in the inventory and three to five other substandard size oak trees 1" to 2" diameter range.

TABLE 1

Tree Species	Trees on this Site	Protected Trees on the Site	Proposed for Removal for Development	Total Proposed for Retention
Blue Oak	13	13	11	2
Interior Live Oak	10	10	7	3
Valley Oak	3	3	2	1
TOTALS	26	26	20	6



ASSIGNMENT

Perform an examination of the site to document the presence and condition of trees protected by the City of Roseville. The “study area” for this effort includes the area as depicted on “The Plaza at Blue Oaks” preliminary tree impact plan prepared by TSD Engineering, Inc., dated February 5, 2020. (All trees protected by the City are included in the inventory.) Prepare a report of findings.

METHODS

Appendix 2 and Tables 1, 2 and 3 in this report are the detailed inventory and recommendations for the trees. The following terms and Table A – Ratings Descriptions will further explain our findings.

Species of trees is listed by our local common name and botanical name by genus and species.

DBH (diameter breast high) is normally measured at 4’6” (54” above the average ground, height but if that varies then the location where it is measured is noted here. A steel diameter tape was used to measure the trees.

Canopy radius is measured in feet. It is the farthest extent of the crown composed of leaves and small twigs measured by a Stanley digital distance meter. This measurement often defines the Critical Root Zone (CRZ) or Protection Zone (PZ), which is a circular area around a tree with a radius equal to this measurement.

Actions listed are recommendations to improve health or structure of the tree. Trees in public spaces require maintenance. If a tree is to remain and be preserved, then the tree may need some form of work to reduce the likelihood of failure and increase the longevity of the tree. Preservation requirements and actions based on a proposed development plan are not included here.

Arborist Rating is subjective to condition and is based on both the health and structure of the tree. All of the trees were rated for condition, per the recognized national standard as set up by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture (ISA) on a numeric scale of 5 (being the highest) to 0 (the worst condition, dead). The rating was done in the field at the time of the measuring and inspection.

Table A – Ratings Descriptions

No problem(s)	5	excellent
No apparent problem(s)	4	good
<u>Minor problem(s)</u>	<u>3</u>	<u>fair</u>
Major problem(s)	2	poor
Extreme problem(s)	1	hazardous, non-correctable
Dead	0	dead

Rating #0: This indicates a tree that has no significant sign of life.

Rating #1: The problems are extreme. This rating is assigned to a tree that has structural and/or health problems that no amount of work or effort can change. The issues may or may not be considered a dangerous situation.

Rating #2: The tree has major problems. If the option is taken to preserve the tree, its condition could be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, fertilization, etc. If the recommended actions are completed correctly, hazard can be reduced and the rating can be elevated to a 3. If no action is taken the tree is considered a liability and should be removed.

Rating #3: The tree is in fair condition. There are some minor structural or health problems that pose no immediate danger. When the recommended actions in an arborist report are completed correctly the defect(s) can be minimized or eliminated.

Rating #4: The tree is in good condition and there are no apparent problems that a Certified Arborist can see from a visual ground inspection. If potential structural or health problems are tended to at this stage future hazard can be reduced and more serious health problems can be averted.

Rating #5: No problems found from a visual ground inspection. Structurally, these trees have properly spaced branches and near perfect characteristics for the species. Highly rated trees are not common in natural or developed landscapes. No tree is ever perfect especially with the unpredictability of nature, but with this highest rating, the condition should be considered excellent.

Notes indicate the health, structure and environment of the tree and explain why the tree should be removed or preserved. Additional notes may indicate if problems are minor, extreme or correctible.

Remove is the recommendation that the tree be removed. The recommendation will normally be based either on poor structure or poor health and is indicated as follows:

Yes H – Tree is unhealthy

Yes S – Tree is structurally unsound

OBSERVATIONS AND CONCLUSIONS

The site is a partially developed commercial site in northwest Roseville. The east side of the site has been rough graded and has annual grasses and a single oak (#1535). The western portion of the site has two patches of oak trees, which are both well below the surrounding grade and on two sides of both patches are City arterial streets.

Development impacts to the two trees proposed to be retained in the south patch will sustain moderate impacts and are anticipated to adjust to the proposed site changes. The trees to be retained in the north patch will be subjected to some amount of summer irrigation runoff. It is difficult to say with any certainty if this will prove detrimental to the trees. It may, and it may be that the trees adjust and adapt to the presence of additional summer moisture.

Below is a summary of tree condition by Arborist Rating and Species.

TABLE 2

# Trees	Common Name	DBH	Canopy Radius	Arborist Rating	Defects Found	Retain/ Remove?
1	Blue Oak	28	33	1 Extreme Structure or Health Problems	Old callusing trunk, west side, 9' above grade with interior decay; slightly out of balance east; above average amount of deadwood.	1 Remove
1	Interior Live Oak	35	38	1 Extreme Structure or Health Problems	Old callusing basal trunk wound, north side; moderate to significant decay; out of balance north; slightly above average amount of deadwood.	1 Remove
1	Valley Oak	57	39	1 Extreme Structure or Health Problems	Numerous large scaffold failures, with resulting decay; scaffold limb failure, north side, resulting in a large callusing wound reaching from 2'-20' above grade, with moderate interior decay; above average amount of deadwood.	1 Remove

# Trees	Common Name	DBH	Canopy Radius	Arborist Rating	Defects Found	Retain/Remove?
1	Blue Oak	24	25	2 Major Structure or Health Problems	Measured 2' above grade. Old callusing trunk wound, south side, at point of limb failure, with interior decay; above average amount of deadwood.	1 Retain
11	Blue Oak	8-45	9-39	3 Fair - Minor Problems	See Tree Inventory.	11 Retain
9	Interior Live Oak	17-53	16-32	3 Fair - Minor Problems	See Tree Inventory.	9 Retain
2	Valley Oak	13-16	16-17	3 Fair - Minor Problems	Out of balance northwest.	1 Retain
26 TOTAL						3 Remove 23 Retain

RECOMMENDED REMOVALS

At this time, 3 trees (totaling 120 aggregate diameter inches) have been recommended for removal from the proposed project area due to the nature and extent of defects, compromised health, and/or structural instability noted at the time of field inventory efforts. If these trees were retained within the proposed project area, it is our opinion that they may be hazardous depending upon their proximity to planned development activities. For reference, the trees which have been recommended for removal due to the severity of noted defects, compromised health, and/or structural instability are highlighted in green within the accompanying Tree Inventory Summary and are briefly summarized as follows:

TABLE 3

Tag #	Protected By Code	Common Name	Species	Multi-Stems (inches)	DBH (inches)	Measured At	Measured Canopy Radius (feet)	Arborist Rating
1514	Yes	Blue Oak	<i>(Quercus douglasii)</i>		28	54	33	1 Extreme Structure or Health Problems
1539	Yes	Valley Oak	<i>(Quercus lobata)</i>		57	54	39	1 Extreme Structure or Health Problems
1540	Yes	Interior Live Oak	<i>(Quercus wislizeni)</i>	14,21	35	54	38	1 Extreme Structure or Health Problems

Trees numbered 1510, 1513, 1521, 1523, 1533, 1562, 1563 and 1564 were all identified as having failed and being in down and dead condition. Some of these trees were identified as down in previous updates and all have been removed from the improvement plans.

CONSTRUCTION REMOVALS

At this time, 20 trees (totaling 535 aggregate diameter inches) have been recommended for construction removal from the proposed project area. Those trees are briefly summarized as follows:

Tree #	Common Name	Species	Multi-Stems (inches)	Total DBH (inches)	DLR (feet)	Structure	Vigor
1522	Blue Oak	(<i>Quercus douglasii</i>)		18	22	Fair	Fair
1528	Blue Oak	(<i>Quercus douglasii</i>)		17	24	Poor to fair	Poor to fair
1529	Blue Oak	(<i>Quercus douglasii</i>)		26	32	Poor to fair	Fair
1530	Blue Oak	(<i>Quercus douglasii</i>)		27	33	Poor to fair	Fair
1531	Blue Oak	(<i>Quercus douglasii</i>)		24	31	Poor to fair	Fair
1532	Blue Oak	(<i>Quercus douglasii</i>)		8	9	Poor	Fair
1534	Blue Oak	(<i>Quercus douglasii</i>)		21	30	Poor	Fair
1535	Blue Oak	(<i>Quercus douglasii</i>)		14	17	Fair	Fair
1536	Interior Live Oak	(<i>Quercus wislizeni</i>)		21	22	Fair	Fair
1537	Blue Oak	(<i>Quercus douglasii</i>)		26	31	Fair	Fair
1538	Blue Oak	(<i>Quercus douglasii</i>)		45	37	Fair	Fair
1539	Valley Oak	(<i>Quercus lobata</i>)		57	39	Poor	Fair
1540	Interior Live Oak	(<i>Quercus wislizeni</i>)	14,21	35	38	Poor	Fair
1541	Blue Oak	(<i>Quercus douglasii</i>)		25	39	Fair	Fair
1542	Valley Oak	(<i>Quercus lobata</i>)		13	16	Poor to fair	Fair
1543	Interior Live Oak	(<i>Quercus wislizeni</i>)	12,12,13	37	32	Poor to fair	Fair
1544	Interior Live Oak	(<i>Quercus wislizeni</i>)	12,20,21	53	32	Poor to fair	Fair
1545	Interior Live Oak	(<i>Quercus wislizeni</i>)		21	29	Poor to fair	Fair
1559	Interior Live Oak	(<i>Quercus wislizeni</i>)		26	26	Poor to fair	Fair
1563	Interior Live Oak	(<i>Quercus wislizeni</i>)		21	32	Poor	Fair

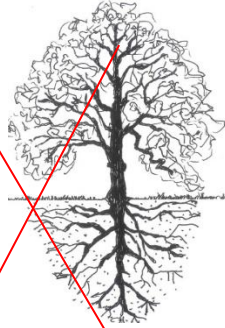
DISCUSSION

Trees need to be protected from normal construction practices if they are to remain healthy and viable on the site. Our recommendations are based on experience, and County ordinance requirements, so as to enhance tree longevity. This requires their root zones remain intact and viable, despite heavy equipment being on site, and the need to install foundations, driveways, underground utilities, and landscape irrigation systems. Simply walking and driving on soil has serious consequences for tree health.

Following is a summary of Impacts to trees during construction and Tree Protection measures that should be incorporated into the site plans in order to protect the trees. Once the plans are approved, they become the document that all contractors will follow. ***The plans become the contract between the owner and the contractor, so that only items spelled out in the plans can be expected to be followed. Hence, all protection measures, such as fence locations, mulch requirements and root pruning specifications must be shown on the plans.***

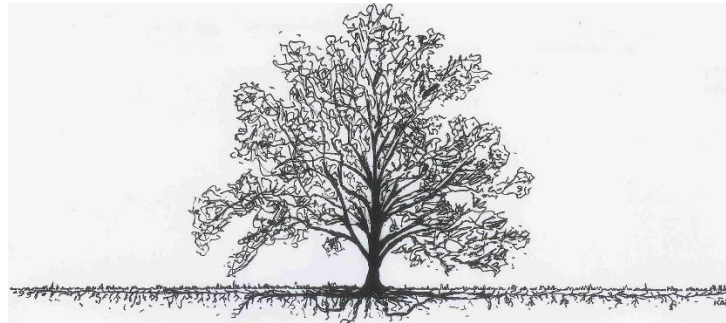
Root Structure

The majority of a tree's roots are contained in a radius from the main trunk outward approximately two to three times the canopy of the tree. These roots are located in the top 6" to 3' of soil. It is a common misconception that a tree underground resembles the canopy (see Drawing A below). The correct root structure of a tree is in Drawing B. All plants' roots need both water and air for survival. Surface roots are a common phenomenon with trees grown in compacted soil. Poor canopy development or canopy decline in mature trees is often the result of inadequate root space and/or soil compaction.



Drawing A

Common misconception of where tree roots are assumed to be located



Drawing B

The reality of where roots are generally located

Structural Issues

Limited space for canopy development produces poor structure in trees. The largest tree in a given area, which is 'shading' the other trees is considered Dominant. The 'shaded' trees are considered Suppressed. The following picture illustrates this point. Suppressed trees are more likely to become a potential hazard due to their poor structure.

Dominant Tree

Growth is upright

Canopy is balanced by limbs and foliage equally

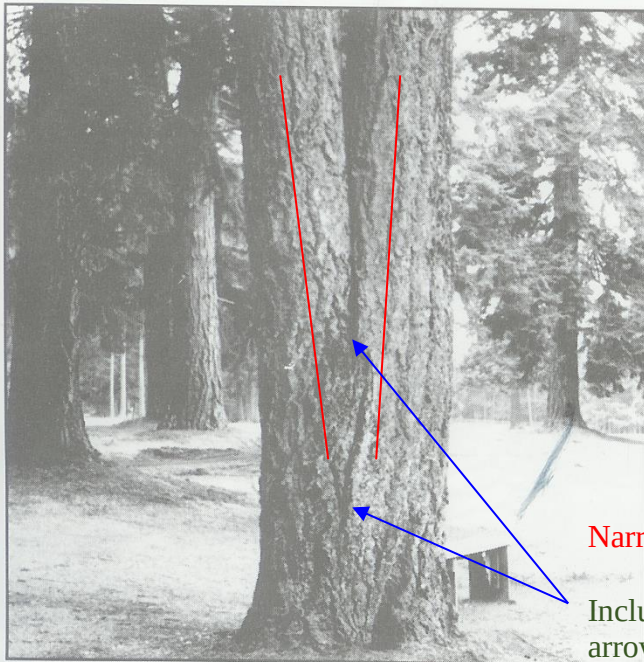


Suppressed Tree

Canopy weight all to one side

Limbs and foliage grow away from dominant tree

Co-dominant leaders are another common structural problem in trees.



The tree in this picture has a co-dominant leader at about 3' and included bark up to 7 or 8'. Included bark occurs when two or more limbs have a narrow angle of attachment resulting in bark between the stems – instead of cell to cell structure. This is considered a critical defect in trees and is the cause of many failures.

Narrow Angle

Included Bark between the arrows

Figure 6. Codominant stems are inherently weak because the stems are of similar diameter.

Photo from Evaluation of Hazard Trees in Urban Areas by Nelda P. Matheny and James R. Clark, 1994 International Society of Arboriculture

Pruning Mature Trees for Risk Reduction

There are few good reasons to prune mature trees. Removal of deadwood, directional pruning, removal of decayed or damaged wood, and end-weight reduction as a method of mitigation for structural faults are the only reasons a mature tree should be pruned. Live wood over 3" should not be pruned unless absolutely necessary. Pruning cuts should be clean and correctly placed. Pruning should be done in accordance with the American National Standards Institute (ANSI) A300 standards. It is far better to use more small cuts than a few large cuts as small pruning wounds reduce risk while large wounds increase risk.

Pruning causes an open wound in the tree. Trees do not "heal" they compartmentalize. Any wound made today will always remain, but a healthy tree, in the absence of decay in the wound, will 'cover it' with callus tissue. Large, old pruning wounds with advanced decay are a likely failure point. Mature trees with large wounds are a high failure risk.

Overweight limbs are a common structural fault in suppressed trees. There are two remedial actions for overweight limbs (1) prune the limb to reduce the extension of the canopy, or (2) cable the limb to reduce movement. Cables do not hold weight they only stabilize the limb and require annual inspection.



Photo of another tree – not at this site.

Normal limb structure

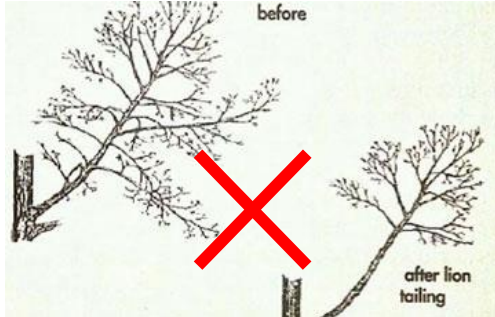
Over weight, reaching limb with main stem diameter small compared with amount of foliage present



Photo of another tree – not at this site

Lion's – Tailing is the pruning practice of removal of “an excessive number of inner and/or lower lateral branches from parent branches. Lion's tailing is not an acceptable pruning practice” ANSI A300 (part 1) 4.23. It increases the risk of failure.

Pruning – Cutting back trees changes their natural structure, while leaving trees in their natural form enhances longevity.



Arborist Classifications

There are different types of Arborists:

Tree Removal and/or Pruning Companies. These companies may be licensed by the State of California to do business, but they do not necessarily know anything about trees;

Arborists. Arborist is a broad term. It is intended to mean someone with specialized knowledge of trees but is often used to imply knowledge that is not there.

ISA Certified Arborist: An International Society of Arboriculture Certified Arborist is someone who has been trained and tested to have specialized knowledge of trees. You can look up certified arborists at the International Society of Arboriculture website: isa-arbor.org.

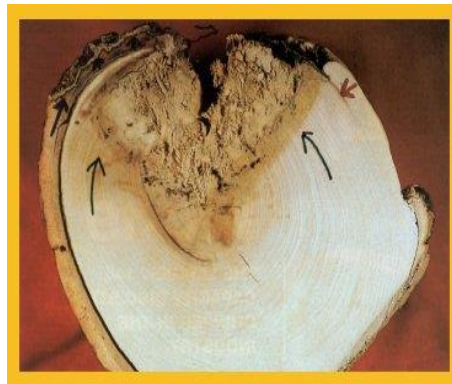
Consulting Arborist: An American Society of Consulting Arborists Registered Consulting Arborist is someone who has been trained and tested to have specialized knowledge of trees and trained and tested to provide high quality reports and documentation. You can look up registered consulting arborists at the American Society of Consulting Arborists website: <https://www.asca-consultants.org/>

Decay in Trees

Decay (in General): Fungi cause all decay of living trees. Decay is considered a disease because cell walls are altered, wood strength is affected, and living sapwood cells may be killed. Fungi decay wood by secreting enzymes. Different types of fungi cause different types of decay through the secretion of different chemical enzymes. Some decays, such as white rot, cause less wood strength loss than others because they first attack the lignin (causes cell walls to thicken and reduces susceptibility to decay and pest damage) secondarily the cellulose (another structural component in a cell walls). Others, such as soft rot, attack the cellulose chain and cause substantial losses in wood strength even in the initial stages of decay. Brown rot causes wood to become brittle and fractures easily with tension. Identification of internal decay in a tree is difficult because visible evidence may not be present.



According to Evaluation of Hazard Trees in Urban Areas (Matheny, 1994) decay is a critical factor in the stability of the tree. As decay progresses in the trunk, the stem becomes a hollow tube or cylinder rather than a solid rod. This change is not readily apparent to the casual observer. Trees require only a small amount of bark and wood to transport water, minerals and sugars. Interior heartwood can be eliminated (or degraded) to a great degree without compromising the transport process. Therefore, trees can contain significant amounts of decay without showing decline symptoms in the crown.



additional cells. The weakest of the vertical wall. Accordingly, decay progression inward at large are more than one pruning cut trunk of the tree, the likelihood of decay progression and the associated structural loss of integrity of the internal wood is high.

Compartmentalization of decay in trees is a biological process in which the cellular tissue around wounds is changed to inhibit fungal growth and provide a barrier against the spread of decay agents into the barrier zones is the formation of while a tree may be able to limit pruning cuts, in the event that there located vertically along the main

Oak Tree Impacts

Our native oak trees are easily damaged or killed by having the soil within the Critical Root Zone (CRZ) disturbed or compacted. All of the work initially performed around protected trees that will be saved should be done by people rather than by wheeled or track type tractors. Oaks are fragile giants that can take little change in soil grade, compaction, or warm season watering. Don't be fooled into believing that warm season watering has no adverse effects on native oaks. Decline and eventual death can take as long as 5-20 years with poor care and inappropriate watering. Oaks can live hundreds of years if treated properly during construction, as well as later with proper pruning, and the appropriate landscape/irrigation design.

RECOMMENTATIONS: SUMMARY OF TREE PROTECTION MEASURES

Hire a Project Arborist to help ensure protection measures are incorporated into the site plans and followed. The Project Arborist should, in cooperation with the Engineers and/or Architects:

- Identify the Root Protection Zones on the final construction drawings, prior to bidding the project.
- Show the placement of tree protection fences, as well as areas to be irrigated, fertilized and mulched on the final construction drawings.
- Clearly show trees for removal on the plans and mark them clearly on site. A Contractor who is a Certified Arborist should perform tree and stump removal. All stumps within the root zone of trees to be preserved shall be ground out using a stump router or left in place. **No trunk within the root zone of other trees shall be removed using a backhoe or other piece of grading equipment.**
- Prior to any grading, or other work on the site that will come within 50' of any tree to be preserved:
 1. Irrigate (if needed) and place a 3" layer of chip mulch over the protected root zone of all trees that will be impacted.
 2. Erect Tree Protection Fences. Place boards against trees located within 3' of construction zones, even if fenced off.
 3. Remove lower foliage that may interfere with equipment PRIOR to having grading or other equipment on site. The Project Arborist should approve the extent of foliage elevation, and oversee the pruning, performed by a contractor who is an ISA Certified Arborist.
- For cuts, expose roots by hand digging, potholing or using an air spade and then cut roots cleanly prior to further grading outside the tree protection zones.
- For fills, if a cut is required first, follow as for cuts.
- Where possible, specify geotextile fabric in lieu of compacting and root cutting, prior to placing fills on the soil surface. Any proposed retaining wall or fill soil shall be discussed with the engineer and arborist in order to reduce impacts to trees to be preserved.
- Clearly designate an area on the site outside the drip line of all trees where construction materials may be stored, and parking can take place. No materials or parking shall take place within the root zones of protected trees.
- Design utility and irrigation trenches to minimize disturbance to tree roots. Where possible, dig trenches with a hydraulic or air spade, placing pipes underneath the roots, or bore the deeper trenches underneath the roots.
- Include on the plans an Arborist inspection schedule to monitor the site during (and after) construction to ensure protection measures are followed and make recommendations for care of the trees on site, as needed.

General Tree protection measures are included as Appendix 3. These measures need to be included on the Site, Grading, Utility and Landscape Plans. A final report of recommendations specific to the plan can be completed as part of, and in conjunction with, the actual plans. This will require the arborist working directly with the engineer and architect for the project. If the above recommendations are followed, the amount of time required by the arborist for the final report should be minim this will require the arborist working directly

with the engineer and architect for the project. If the above recommendations are followed, the amount of time required by the arborist for the final report should be minimal.

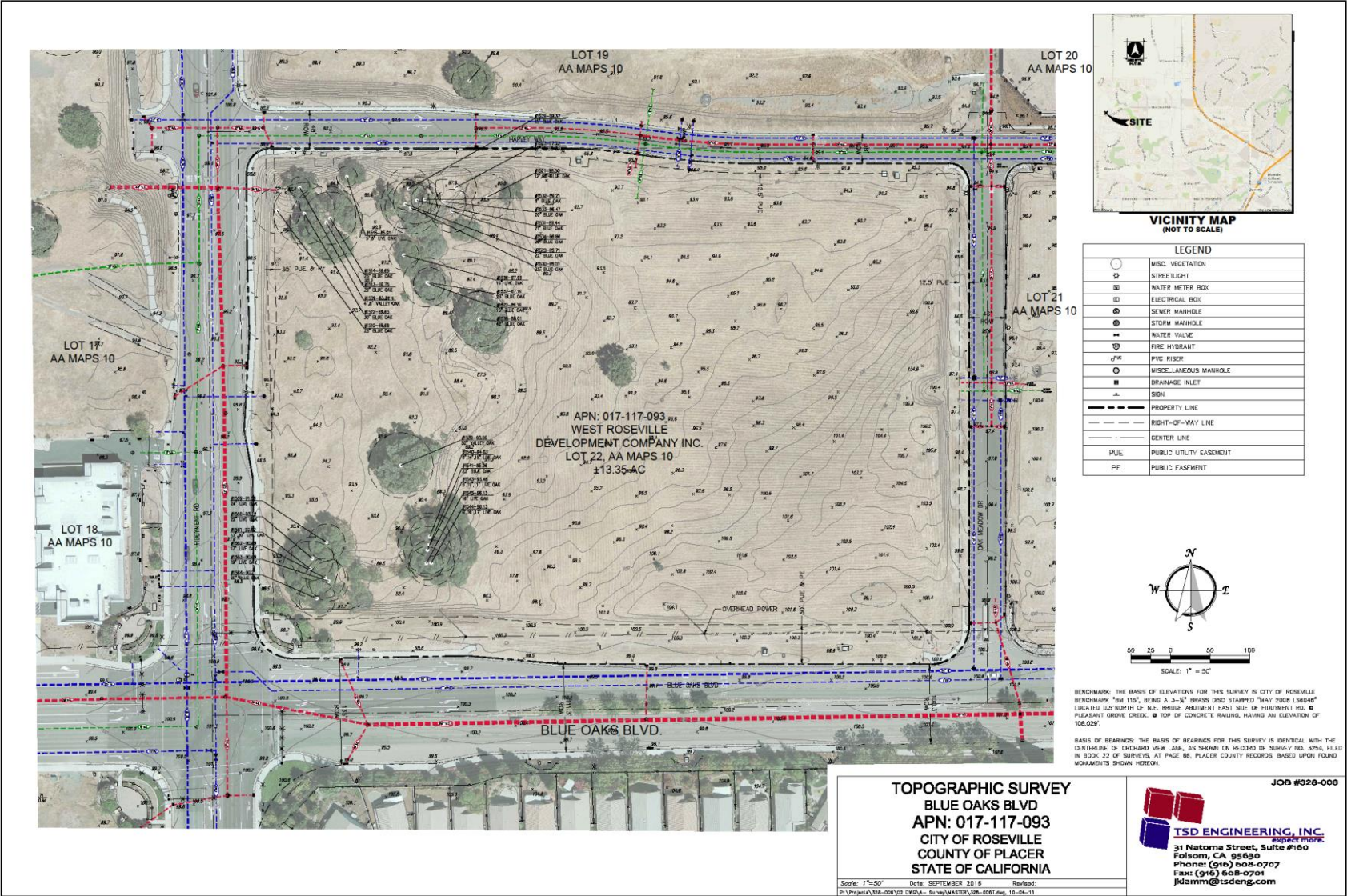
Report Prepared by:



Edwin E. Stirtz, Consulting Arborist
International Society of Arboriculture
Certified Arborist WE-0510A
ISA Tree Risk Assessment Qualified
Member, American Society of Consulting Arborists

Enc.: Appendix 1 – Map of The Property Showing Tree Locations
Appendix 2 – Tree Information Collected
Appendix 3 – General Practices for Tree Protection

APPENDIX 1 – MAP OF THE PROPERTY SHOWING TREE LOCATIONS



APPENDIX 2 – TREE INFORMATION COLLECTED

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1509	Valley Oak	(Quercus lobata)		16	17	Fair	Fair	Fair	Dormant	Fair	Fair	3 Fair - Minor Problems		No encroachment depicted.	None at this time.	
1512	Blue Oak	(Quercus douglasii)		24	25	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	2 Major Structure or Health Problems	AKA Tree 931 Measured 2' above grade. Old callusing trunk wound, south side, at point of limb failure, with interior decay; above average amount of deadwood.	Minor to negligible encroachment for retaining wall construction south side.	Perform decay detection and provide further recommendations. If retained, any excavation for retaining wall footings shall be monitored by the project arborist. May require root pruning. Will require canopy pruning.	
1514	Blue Oak	(Quercus douglasii)		28	33	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	1 Extreme Structure or Health Problems	AKA Tree 929 Old callusing trunk, west side, 9' above grade with interior decay; slightly out of balance to the east; above average amount of deadwood.	Arborist's tree removal.	Recommend removal due to nature and extent of noted defects	
1515	Interior Live Oak	(Quercus wislizeni)		17	16	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	Measured 1.5' above grade; trunk forks 2' above grade into codominant stems which then graft 6'-9' above grade; slightly above average amount of deadwood.	Minor to negligible encroachment for retaining wall construction south side.	Excavation for retaining wall footings shall be monitored by the project arborist. Root pruning may be necessary.	

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1522	Blue Oak	<i>(Quercus douglasii)</i>		18	22	Fair	Fair	Fair	Dormant	Fair	Fair	3 Fair - Minor Problems	AKA Tree 917 Above average amount of deadwood.	Tree removal.	None at this time.	18
1528	Blue Oak	<i>(Quercus douglasii)</i>		17	24	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Poor to fair	3 Fair - Minor Problems	AKA Tree 927 Out of balance to the south; above average amount of deadwood; poor bud formation.	Tree removal.	None at this time.	17
1529	Blue Oak	<i>(Quercus douglasii)</i>		26	32	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 926 Out of balance to the west; above average amount of deadwood; sprout growth on the larger wood.	Tree removal.	None at this time.	26
1530	Blue Oak	<i>(Quercus douglasii)</i>		27	33	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 925 Slightly out of balance to the south; above average amount of deadwood.	Tree removal.	None at this time.	27
1531	Blue Oak	<i>(Quercus douglasii)</i>		24	31	Fair	Poor to fair	Poor to fair	Dormant	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 924 Out of balance to the east; above average amount of deadwood.	Tree removal.	None at this time.	24
1532	Blue Oak	<i>(Quercus douglasii)</i>		8	9	Poor	Poor to fair	Poor to fair	Dormant	Poor	Fair	3 Fair - Minor Problems	Past partial root system failure, partially on grade.	Tree removal.	None at this time.	8
1534	Blue Oak	<i>(Quercus douglasii)</i>		21	30	Poor	Poor	Poor	Dormant	Poor	Fair	3 Fair - Minor Problems	AKA Tree 922 Tree suffered a partial root system failure in the past and is lying on grade to the south; above average amount of deadwood.	Tree removal.	None at this time.	21

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1535	Blue Oak	(Quercus douglasii)		14	17	Fair	Fair	Fair	Dormant	Fair	Fair	3 Fair - Minor Problems	AKA Tree 919 Out of balance to the east; slightly above average amount of deadwood.	Tree removal.	None at this time.	14
1536	Interior Live Oak	(Quercus wislizeni)		21	22	Fair	Fair	Poor to fair	Fair	Fair	Fair	3 Fair - Minor Problems	AKA Tree 918 Old callusing lower trunk wounds, north side, with minor decay; slightly above average amount of deadwood.	Tree removal.	None at this time.	21
1537	Blue Oak	(Quercus douglasii)		26	31	Fair	Poor	Poor to fair	Dormant	Fair	Fair	3 Fair - Minor Problems	AKA Tree 916 Out of balance to the west; inherently weak primary crotch; slightly above average amount of deadwood.	Tree removal.	None at this time.	26
1538	Blue Oak	(Quercus douglasii)		45	37	Fair	Fair	Fair	Dormant	Fair	Fair	3 Fair - Minor Problems	AKA Tree 915 Root crown and some buttresses exposed from bank erosion on the northwest side; above average amount of deadwood.	Tree removal.	None at this time.	45

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1539	Valley Oak	(Quercus lobata)		57	39	Fair	Poor	Poor to fair	Dormant	Poor	Fair	1 Extreme Structure or Health Problems	AKA Tree 913 Numerous large scaffold failures, with resulting decay; scaffold limb failure, north side, resulting in a large callusing wound reaching from 2'-20' above grade, with moderate interior decay; above average amount of deadwood.	Arborist's tree removal.	Recommend removal due to nature and extent of noted defects	57
1540	Interior Live Oak	(Quercus wislizeni)	14,21	35	38	Poor	Poor	Poor to fair	Fair	Poor	Fair	1 Extreme Structure or Health Problems	AKA Tree 911Old callusing basal trunk wound, north side; moderate to significant decay; out of balance to the north; slightly above average amount of deadwood.	Arborist's tree removal.	Recommend removal due to nature and extent of noted defects	35
1541	Blue Oak	(Quercus douglasii)		25	39	Poor to fair	Poor to fair	Fair	Fair	Fair	Fair	3 Fair - Minor Problems	AKA Tree 910 Buttress roots exposed due to bank erosion; out of balance east; slightly above average amount of deadwood.	Tree removal.	Clean out crown and perform weight/size reduction pruning.	25
1542	Valley Oak	(Quercus lobata)		13	16	Fair	Poor to fair	Fair	Dormant	Poor to fair	Fair	3 Fair - Minor Problems	Out of balance northwest.	Tree removal.	None at this time.	13

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1543	Interior Live Oak	(Quercus wislizeni)	12,12,13	37	32	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 909 Out of balance south; old callusing wounds in various locations on the scaffold branches, with minor decay evident.	Tree removal.	Clean out crown and perform weight/size reduction pruning.	37
1544	Interior Live Oak	(Quercus wislizeni)	12,20,21	53	32	Poor to fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 908 Old callusing basal trunk wound, west side, with minor decay; out of balance east; slightly above average amount of deadwood.	Tree removal.	None at this time.	53
1545	Interior Live Oak	(Quercus wislizeni)		21	29	Poor to fair	Fair	Poor to fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 907 Old callusing basal trunk wound, north side, with minor decay; out of balance south; slightly above average amount of deadwood.	Tree removal.	None at this time.	21
1559	Interior Live Oak	(Quercus wislizeni)		26	26	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 902 Old callusing wounds, various locations, with no obvious decay; above average amount of deadwood.	Tree removal.	None at this time.	26

Tree #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT						ARBORIST RATING	NOTABLE CHARACTERISTICS	PERCEIVED IMPACTS	RECOMMENDATIONS	Construction Removal Mitigation Inches
						RT CR	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR					
1560	Interior Live Oak	(Quercus wislizeni)		25	28	Fair	Fair	Fair	Fair	Fair	Fair	3 Fair - Minor Problems	AKA Tree 901	Moderate to significant encroachment from retaining wall construction 14' north of trunk.	Excavation for retaining wall footings shall be monitored by the project arborist. Root pruning may be necessary.	
1561	Interior Live Oak	(Quercus wislizeni)		40	30	Fair	Poor to fair	Fair	Fair	Poor to fair	Fair	3 Fair - Minor Problems	AKA Tree 903 Measured 2' above grade; callusing on the south side; suspect interior decay; out of balance south; slightly above average amount of deadwood.	Minor to moderate encroachment from retaining wall construction 126'4" north of trunk.	Excavation for retaining wall footings shall be monitored by the project arborist. Root pruning may be necessary.	
1563	Interior Live Oak	(Quercus wislizeni)		21	32	Poor	Poor	Fair	Fair	Poor	Fair	3 Fair - Minor Problems	AKA Tree 905 Partial failure of the root system has left the tree growing prone on grade toward the south; terminal 15' is dead.	Tree removal.	None at this time.	21

TOTAL INVENTORIED TREES = 26 trees (685 aggregate diameter inches)
TOTAL RECOMMENDED REMOVALS = 3 trees (120 aggregate diameter inches)
PRECAUTIONARY TREES HIGHLIGHTED FOR REFERENCE
TOTAL CONSTRUCTION REMOVALS = 20 Trees (535 aggregate diameter inches)

APPENDIX 3 – GENERAL PRACTICES FOR TREE PROTECTION

Definitions

Root zone: The roots of trees grow fairly close to the surface of the soil, and spread out in a radial direction from the trunk of tree. A general rule of thumb is that they spread 2 to 3 times the radius of the canopy, or 1 to 1 ½ times the height of the tree. It is generally accepted that disturbance to root zones should be kept as far as possible from the trunk of a tree.

Inner Bark: The bark on large valley oaks and coast live oaks is quite thick, usually 1" to 2". If the bark is knocked off a tree, the inner bark, or cambial region, is exposed or removed. The cambial zone is the area of tissue responsible for adding new layers to the tree each year, so by removing it, the tree can only grow new tissue from the edges of the wound. In addition, the wood of the tree is exposed to decay fungi, so the trunk present at the time of the injury becomes susceptible to decay. Tree protection measures require that no activities occur which can knock the bark off the trees.

Methods Used in Tree Protection:

No matter how detailed Tree Protection Measures are in the initial Arborist Report, they will not accomplish their stated purpose unless they are applied to individual trees and a Project Arborist is hired to oversee the construction. The Project Arborist should have the ability to enforce the Protection Measures. The Project Arborist should be hired as soon as possible to assist in design and to become familiar with the project. He must be able to read and understand the project drawings and interpret the specifications. He should also have the ability to cooperate with the contractor, incorporating the contractor's ideas on how to accomplish the protection measures, wherever possible. It is advisable for the Project Arborist to be present at the Pre-Bid tour of the site, to answer questions the contractors may have about Tree Protection Measures. This also lets the contractors know how important tree preservation is to the developer.

Root Protection Zone (RPZ): Since in most construction projects it is not possible to protect the entire root zone of a tree, a Root Protection Zone is established for each tree to be preserved. The minimum Root Protection Zone is the area underneath the tree's canopy (out to the dripline, or edge of the canopy), plus 10'. The Project Arborist must approve work within the RPZ.

Irrigate, Fertilize, Mulch: Prior to grading on the site near any tree, the area within the Tree Protection fence should be fertilized with 4 pounds of nitrogen per 1000 square feet, and the fertilizer irrigated in. The irrigation should percolate at least 24 inches into the soil. This should be done no less than 2 weeks prior to grading or other root disturbing activities. After irrigating, cover the RPZ with at least 12" of leaf and twig mulch. Such mulch can be obtained from chipping or grinding the limbs of any trees removed on the site. Acceptable mulches can be obtained from nurseries or other commercial sources. Fibrous or shredded redwood or cedar bark mulch shall not be used anywhere on site.

Fence: Fence around the Root Protection Zone and restrict activity therein to prevent soil compaction by vehicles, foot traffic or material storage. The fenced area shall be off limits to all construction equipment, unless there is express written notification provided by the Project Arborist, and impacts are discussed and mitigated prior to work commencing.

No storage or cleaning of equipment or materials, or parking of any equipment can take place within the fenced off area, known as the RPZ.

The fence should be highly visible, and stout enough to keep vehicles and other equipment out. I recommend the fence be made of orange plastic protective fencing, kept in place by t-posts set no farther apart than 6'.

In areas of intense impact, a 6' chain link fence is preferred.

In areas with many trees, the RPZ can be fenced as one unit, rather than separately for each tree.

Where tree trunks are within 3' of the construction area, place 2" by 4" boards vertically against the tree trunks, even if fenced off. Hold the boards in place with wire. Do not nail them directly to the tree.

The purpose of the boards is to protect the trunk, should any equipment stray into the RPZ.

Elevate Foliage: Where indicated, remove lower foliage from a tree to prevent limb breakage by equipment. Low foliage can usually be removed without harming the tree, unless more than 25% of the foliage is removed. Branches need to be removed at the anatomically correct location in order to prevent decay organisms from entering the trunk. For this reason, a contractor who is an ISA Certified Arborist should perform all pruning on protected trees.¹

Expose and Cut Roots: Breaking roots with a backhoe, or crushing them with a grader, causes significant injury, which may subject the roots to decay. Ripping roots may cause them to splinter toward the base of the tree, creating much more injury than a clean cut would make. At any location where the root zone of a tree will be impacted by a trench or a cut (including a cut required for a fill and compaction), the roots shall be exposed with either a backhoe digging radially to the trunk, by hand digging, or by a hydraulic air spade, and then cut cleanly with a sharp instrument, such as chainsaw with a carbide chain. Once the roots are severed, the area behind the cut should be moistened and mulched. A root protection fence should also be erected to protect the remaining roots, if it is not already in place. Further grading or backhoe work required outside the established RPZ can then continue without further protection measures.

Protect Roots in Deeper Trenches: The location of utilities on the site can be very detrimental to trees. Design the project to use as few trenches as possible, and to keep them away from the major trees to be protected. Wherever possible, in areas where trenches will be very deep, consider boring under the roots of the trees, rather than digging the trench through the roots. This technique can be quite useful for utility trenches and pipelines.

Protect Roots in Small Trenches: After all construction is complete on a site, it is not unusual for the landscape contractor to come in and sever a large number of "preserved" roots during the installation of irrigation systems. The Project Arborist must therefore approve the landscape and irrigation plans. The irrigation system needs to be designed so the main lines are located outside the root zone of major trees, and the secondary lines are either laid on the surface (drip systems), or carefully dug with a hydraulic or air spade, and the flexible pipe fed underneath the major roots.

Design the irrigation system so it can slowly apply water (no more than ¼" to ½" of water per hour) over a longer period of time. This allows deep soaking of root zones. The system also needs to accommodate infrequent irrigation settings of once or twice a month, rather than several times a week.

Monitoring Tree Health During and After Construction: The Project Arborist should visit the site at least twice a month during construction to be certain the tree protection measures are being followed, to monitor the health of impacted trees, and make recommendations as to irrigation or other needs. After construction is

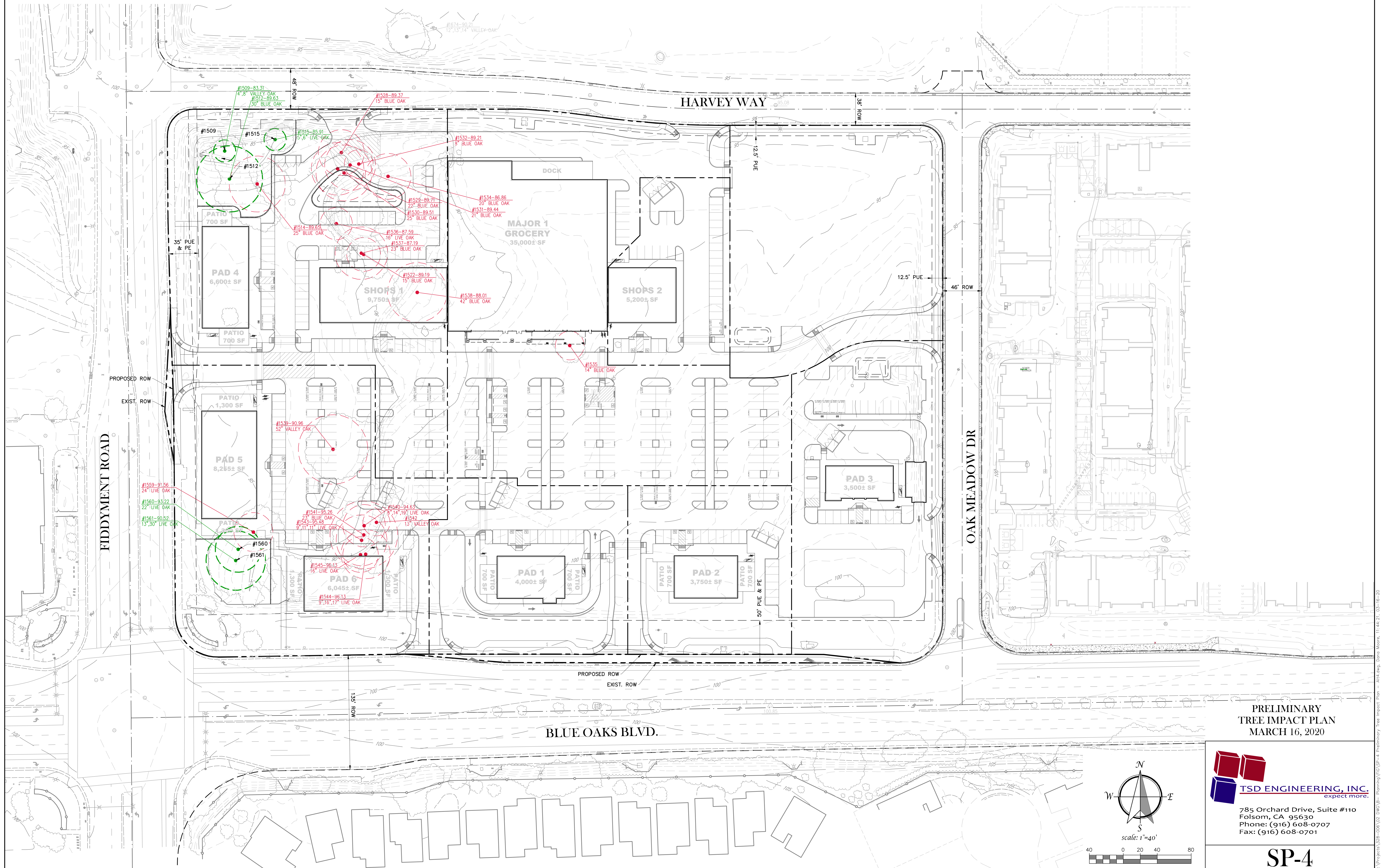
¹ International Society of Arboriculture (ISA), maintains a program of Certifying individuals. Each Certified Arborist has a number and must maintain continuing education credits to remain Certified.

complete, the arborist should monitor the site monthly for one year and make recommendations for care where needed. If longer term monitoring is required, the arborist should report this to the developer and the planning agency overseeing the project.

PRELIMINARY TREE IMPACT PLAN - ALT 4
THE PLAZA AT BLUE OAKS

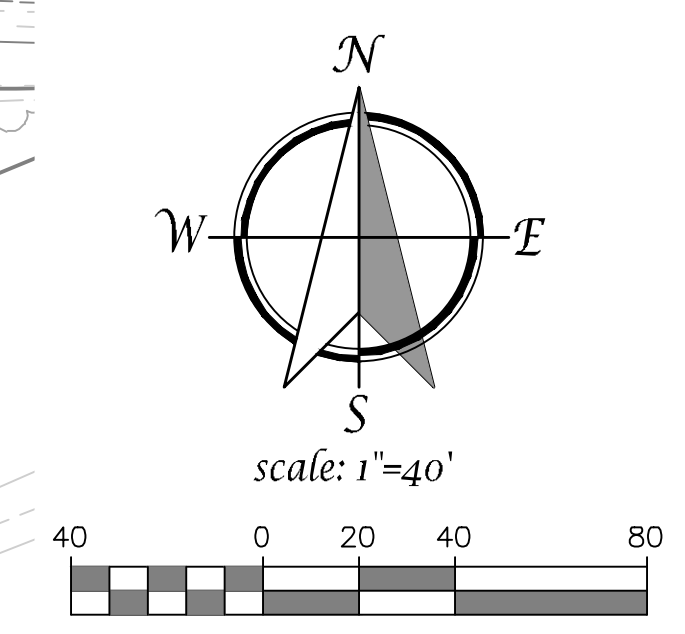
1950 BLUE OAKS BLVD
FIDDYMENT F-31
ROSEVILLE, CA

CC EXHIBIT K



PRELIMINARY
TREE IMPACT PLAN
MARCH 16, 2020

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SP-4