

CITY OF SEBASTOPOL



NOTICE TO BIDDERS, PROPOSAL, CONTRACT

FOR

CONSTRUCTION OF THE

PARQUET STREET WATER AND SEWER REPLACEMENT & SLURRY SEAL PROJECT

CONTRACT NO. 2023-03

BID OPENING DATE:

March 28, 2023

**CITY OF SEBASTOPOL
ENGINEERING DEPARTMENT
714 Johnson Street**

**SEBASTOPOL, CALIFORNIA 95472
PHONE: (707) 823-2151**

Approved for Release:

A handwritten signature in blue ink, appearing to read "Mario Landeros", is written over a horizontal line.

Mario Landeros, City Engineer

03/02/2023

Date

NOTICE TO BIDDERS

NOTICE IS HEREBY GIVEN that sealed bids will be received by the City Engineer of the City of Sebastopol at the Engineering Department Office, 714 Johnson Street, Sebastopol, County of Sonoma, State of California, until the hour of **2:00 p.m.**, on the **28th** day of **March, 2023** at which time they will be publicly opened and read aloud in the conference room of the Public Works Department, 714 Johnson Street, Sebastopol, California, for:

PARQUET STREET WATER AND SEWER REPLACEMENT & SLURRY SEAL PROJECT City Contract No. 2023-03

Project plans and specifications may only be obtained by registering for the project plan holders list. Contact DraTech at (707) 578-9442 or visit <https://www.draftechplanroom.com/> for more information on obtaining project documents and registering for the project plan holders list. Any bidder not registered for the plan holders list prior to the bid opening date shall have their bid deemed non-responsive. Questions may be directed to engineering@cityofsebastopol.org.

The Work in general consists of furnishing all labor, equipment, materials and supplies to verify existing utility locations, install new water mains, abandonment and partial removal of existing asbestos cement water mains, replacement of water services, water main connections, gate valves, new and relocated fire hydrants, removal of existing sanitary sewer mains, installation of new sanitary sewer mains, new and replacement sanitary sewer manholes, replacement of sanitary sewer laterals and cleanouts, permanent trench restoration, slurry seal of Parquet Street and a portion of Calder Avenue. The Engineer's estimate of cost is \$824,000.

In accordance with California Public Contract Code Section 3300, a valid class A California contractor's license is required to bid on the project.

Pursuant to the provisions of Section 1720 et seq. of the Labor Code of California, the Director of Industrial Relations for the State of California has ascertained the current general prevailing rate of wages for employer purposes, in Sonoma County, State of California. Not less than the general prevailing rate of per diem wages for work of a similar character in Sonoma County and not less than the general prevailing rate of per diem wages for holiday work fixed as provided in the California Labor Code must be paid to all workers engaged in performing the project.

In accordance with the California Labor Code Section 1773.2, copies of the applicable determinations of the Director are on file in the City of Sebastopol City Engineer's Office and may be reviewed upon request.

In accordance with California Public Contract Code Section 3400, bidders may propose equals of products listed in the Special Provisions or project plans by manufacturer name, brand, or model number, unless the Special Provisions or plans specify that the product is necessary to match others in use. Complete information for products proposed as equals must be submitted to the City Engineer's Office for review at least seven (7) working days before the time specified for bid opening in accordance with the information for bidders contained in the bid package.

In accordance with California Public Contract Code Section 20170, all bids must be presented under sealed cover and include one of the following forms of bidder's security: cash, cashier's check made payable to the City, certified check made payable to the City, or a bidder's bond. The

amount of bidder's security provided must equal at least ten (10) percent of the total of the bid price for the base bid and the additive or deductive items listed in this notice. The successful bidder must submit to the City complete, executed copies of all required documents within ten (10) working days of receiving written notice of award of the project. Bidder's security of any successful bidder that fails to do so will be forfeited to the City. Such required documents include, but are not limited to, a payment or labor and materials bond in an amount of at least 100 percent of the amount payable by the terms of the project contract and that satisfies the requirements of California Civil Code Section 9554, and a performance bond in an amount of at least 100 percent of the amount payable by the terms of the contract. All project bonds must be executed by an admitted surety insurer in accordance with applicable law and acceptable to the City.

In accordance with California Public Contract Code Section 22300, except where prohibited by federal regulations or policies, the successful bidder may, on request and at its expense, substitute securities in lieu of amounts withheld by the City from progress payments to ensure performance under the contract in accordance with the contract documents.

The City of Sebastopol reserves the right to postpone the date and time for the opening of proposals at any time prior to the date and time announced in the advertisement in accordance with applicable law.

The City of Sebastopol reserves the right to reject any and all bids or to waive any defects or irregularity in bidding in accordance with applicable law. In accordance with California Public Contract Code Section 20103.8, if the City elects to award a contract for performance of the project, the contract will be awarded in accordance with California Public Contract Code Section 20162 and other applicable law to the responsible bidder submitting a responsive bid with the lowest total bid price for the base bid without consideration of the bid price for any additive or deductive items. All bids will remain valid for 90 days after the bid opening. Except as permitted by law and subject to all applicable remedies, including forfeiture of bidder's security, bidders may not withdraw their bid during the 90-day period after the bid opening.

Questions regarding this Notice may be submitted to engineering@cityofsebastopol.org.

By order of the City Council of the City of Sebastopol, Sonoma County, California.

PUBLISH: 3/07/2023 and 3/14/2023

/s/ Reyna Ramirez
Management Analyst

Date 3/02/2023

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INFORMATION FOR BIDDERS

1. DEFINITIONS

- 1.1 Bid forms. The bid forms are the forms listed in the Bid Forms Section in the bid package Table of Contents.
- 1.2 Bid package. A complete bid package consists of the following documents: Notice to Bidders, Information for Bidders, Bidder's Check List, Proposal and Schedule of Bid Prices, Bid Bond, Contractor License Information, List of Proposed Subcontractors, Workers Compensation Insurance Certification, Acknowledgement of Indemnity and Insurance Requirements Non-collusion Affidavit, Public Contract Code Section 10285.1, Public Contract Code Section 10162 Questionnaire, Public Contract Code Section 10232 Statement, Debarment and Suspension Certification, Bidder's Signature Page, Contract Document Check List, Contract, Part 1, Performance Bond, Payment and Maintenance Bond, Maintenance Bond, Escrow Agreement, General Provisions, Special Provisions , the Project Plans.
- 1.3 Business day. The City is open for business Monday through Thursday, excluding holidays, from 7:00 a.m. to 5:30 p.m. (Note that the office is closed noon – 12:30 p.m. for lunch.)
- 1.4 Contract documents. All of the documents incorporated into the final Project contract as listed in the contract, as described in the Contract.
- 1.5 Project. The Project is the Parquet Street Water and Sewer Replacement and Slurry Seal Project as described in the bid package.
- 1.6 Project Plans. The Project Plans are the primarily graphic detailed requirements concerning the Project contained in the bid package.
- 1.7 Special Provisions, Part 3. The Special Provisions provide detailed requirements concerning the Project.

2. BIDDER'S REPRESENTATIONS

Each bidder by submitting a bid represents that:

- 2.1 The bidder has read and understands the bid package and the bid is in accordance with all the requirements of the bid package and applicable law.
- 2.2 Neither the bidder nor any subcontractor included on the list of proposed subcontractors submitted with the bid are ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7.
- 2.3 The bidder understands that quantities of unit price items may vary from the estimates provided in the Special Provisions.
- 2.4 Representatives of the bidder have visited the Project site and have familiarized themselves with the conditions under which the Project work is to be performed so as to ensure that the Project work may be performed for the amount bid.

- 2.5 The bidder has informed the City in writing no later than five (5) working days prior to the time specified for bid opening of any apparent conflicts, errors, or ambiguities contained in the bid package or between the contents of the bid package and the Project site.

3. PRE-BID COMMUNICATION AND INTERPRETATION OF THE BID PACKAGE

- 3.1 Any bidder that discovers any apparent conflicts, errors, or ambiguities contained in the bid package or between the contents of the bid package and the Project site, or that has questions or requires clarification concerning the bid package or its intent must inform the City in writing as soon as reasonably possible, but no later than five (5) working days before the date specified for bid opening. Such notice to the City must be sent to the address specified in the Notice to Bidders for questions concerning the bid package. Questions received less than five (5) working days before the time specified for opening bids may not be answered.
- 3.2 Any interpretation, correction or change of the bid package prior to bid opening will be made by addendum signed by an authorized representative of the City and transmitted to all bid package recipients. No other interpretation or information concerning the bid package issued prior to the date specified for opening bids will be binding. All addenda signed by an authorized representative of the City and issued prior to the time and date specified for opening bids will form a part of the contract documents and must be acknowledged on the bid forms. Any changes, exceptions or conditions concerning the Project and/or the bid package submitted by any bidder as part of a bid may render that bid non-responsive.

4. PRE-BID ACCESS TO THE PROJECT SITE

- 4.1 Prior to submitting a bid, it will be the sole responsibility of each bidder to conduct any additional examination, investigation, exploration, test, study or other inquiry and to obtain any additional information pertaining to the physical conditions (including surface, subsurface, and underground utilities) at or near the Project site that may affect the cost, progress, or performance of the Project, and that the bidder deems are necessary to prepare its bid for performance of the Project in accordance with the bid package and contract documents. Bidders seeking any such additional examination or other inquiries or information concerning the Project will do so at the bidder's sole expense.
- 4.2 Bidders seeking to conduct any additional examination or other inquiry at the Project site must request site access from the City at least two (2) working days in advance. The location of any excavation, boring or other invasive testing will be subject to approval on behalf of the City and any other agencies with jurisdiction over such testing. Bidders may not conduct tests at the Project site prior to obtaining City approval. The City may require bidders to execute an access agreement prior to approving testing at the Project site. Once approved testing is complete, Bidders must fill all trenches or holes, restore all pavement to match existing structural section, and otherwise clean up and restore the test site to its pre-test condition.

5. BIDDING PROCEDURE

- 5.1 Bids must be delivered to the City of Sebastopol, 714 Johnson Street, Sebastopol, California 95472, no later than the time and date specified in the Notice to Bidders. Bids will be opened and read publicly at that time. Bids that are submitted late according to

the official time kept by the Public Works Management Analyst or a designee will be returned unopened. Telephones for use by bidders are not available at the City offices.

- 5.2 In accordance with California Public Contract Code Section 20170, bids must be presented under sealed cover. Bids must be submitted using the bid forms furnished with the bid package. Bids must include all documents listed in the Bidder's Check List completed in accordance with the bid package. Bids must bear the bidder's legal name and be signed by a representative authorized to bind the bidder. Bids must be typed or written in ink. Corrections may be made if initialed by the individual signing the bid. No oral or telegraphic modifications of bids, including facsimile modifications, will be considered. Bids that are incomplete or that are not presented on the bid forms furnished with the bid package may be deemed non-responsive.
- 5.3 Each bid must give the full business address of the bidder. Bids of partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership, or by an authorized representative, followed by the printed name and title of the person signing. Bids of corporations must be signed with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the president, secretary or other person authorized to bind the corporation. The name of each person signing must also be typed or printed below the signature. Upon request of the City, bidders will furnish satisfactory evidence of the authority of the person signing the bid. Bids of joint ventures must include a certified copy of the legal agreement constituting the joint venture.
- 5.4 No person, firm, corporation, partnership or legal joint venture may submit more than one bid for the Project. However, a person, firm, corporation, partnership or legal joint venture that has submitted a subcontract proposal to a bidder, or that has quoted prices on materials to a bidder may submit a subcontract proposal, quote prices to other bidders and submit its own bid.
- 5.5 In accordance with California Public Contract Code Section 20170, all bids must include one of the forms of bidder's security specified in the Notice to Bidders in an amount of at least ten (10) per cent of the total of the bid prices for the base bid and those additive or deductive items specifically identified in the Notice to Bidders for the purpose of determining the lowest price bid. Bidders that elect to provide bidder's security in the form of a bid bond must execute a bid bond using the form provided in the bid forms. The bidder's security is tendered as a guarantee that the successful bidder, if issued a notice of award concerning the Project contract, will execute and submit to the City all required bonds, certificates of insurance, completed contract forms and other documents listed in the Contract Check List and enter into a contract with the City within ten (10) working days of receipt of the notice of award. The bidder's security of any successful bidder that fails to do so will be forfeited to the City. All bidders' security not forfeited to the City will be returned once a successful bidder provides all required documents and enters a contract with the City in accordance with all applicable bid package requirements. Forfeiture of the bidder's security to the City will not waive or otherwise limit any other remedy available to the City under applicable law.
- 5.6 In accordance with California Business and Professions Code Section 7028.15, Public Contract Code Section 20103.5, and as specified in the Notice to Bidders, all Project work must be performed by properly licensed contractors and subcontractors with active licenses in good standing as of the date and time specified for bid opening, or, if the Project involves federal funds, no later than the time the Project contract is awarded. Bidders must verify their Contractor's License number and license expiration date in the

proposal under penalty of perjury. Bids that do not satisfy applicable licensing requirements will be considered non-responsive and rejected and may subject the bidder to criminal and/or civil penalties.

- 5.7 Pursuant to Labor Code Section 1771.1(a), 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 Part 7, Chapter 1 of the Labor Code., 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 Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Labor Code Section 1725.5 at the time the contract is awarded.
- 5.8 If the bid forms include a bidder's questionnaire, all bids must include a completed bidder's questionnaire on the forms provided. By submitting a bid, bidders authorize City representatives to verify any and all information provided on the bidder's questionnaire and agree to indemnify, defend and hold harmless the City and its officials, officers, employees, agents and volunteers to the full extent permitted by law from and against any claims, liability or causes of action, including, without limitation, legal fees and costs, arising out of verification of the information provided on the bidder's questionnaire, and/or arising out of use of information provided in the bidder's questionnaire to determine, in accordance with applicable law, the qualification of the bidder to perform the Project.
- 5.9 Bids may be withdrawn prior to the time set for bid opening by a written request signed by an authorized representative of the bidder filed with the Management Analyst. The bid security submitted with bids so withdrawn will be returned to the bidder. Bidders that have withdrawn their bid in accordance with this provision may submit a new bid prior to the time set for bid opening in accordance with all applicable bid package requirements. Bids may not be withdrawn during the ninety-day period after the time set for bid opening except as permitted by law pursuant to California Public Contract Code Section 5100 and following. Any other bid withdrawal will result in forfeiture of the bidder's bid security to the City.

6. BID PROTESTS

- 6.1 Any protest of the proposed Project award must be submitted in writing to the City and received at the City, Public Works Office, 714 Johnson Street, Sebastopol, no later than 5:00 PM on the third business day following the date of the bid opening.
- 6.2 The protest must contain a complete statement of the basis for the protest.
- 6.3 The protest must state the facts and refer to the specific portion of the document or the specific statute that forms the basis for the protest. The protest must include the name, address, and telephone number of the person representing the protesting party.
- 6.4 The party filing the protest must concurrently transmit a copy of the protest to the proposed awardee.

- 6.5 The party filing the protest must have submitted a bid for the Project. A subcontractor of a party filing a bid for the Project may not submit a bid protest. A party may not rely on the bid protest submitted by another bidder but must timely pursue its own protest.
- 6.6 The procedure and time limits set forth in these Information for Bidders are mandatory and are the bidders' sole and exclusive remedy in the event of a bid protest. Any bidder's failure to fully comply with these procedures will constitute a waiver of any right to further pursue a bid protest, including filing of a challenge of the award pursuant to the California Public Contract Code, filing of a claim pursuant to the California Government Code, or filing of any other legal proceedings.
- 6.7 The City will review all timely protests prior to award of the contract. The City will not be required to hold an administrative hearing to consider any protests, but may do so at its option. At the time of the City Council's consideration of the award, the City Council will also consider the merits of any timely protests. The City Council may either reject the protest and award to the lowest responsible bidder or accept the protest and award the bid to the next lowest responsible bidder. Nothing in this section will be construed as a waiver of the City Council's right to reject all bids.

7. AWARD

- 7.1 In accordance with applicable law, the City reserves the right to reject any or all bids and to waive any informality in any bid. The City reserves the right to accept any portion of any bid, unless the bid package expressly provides that the award will be made as a whole. If the City elects to award a contract for performance of the Project, the contract will be awarded in accordance with California UPCCAA under the Public Contract Code Section 22000, et. seq. and other applicable law to the responsible bidder submitting a responsive bid with the lowest total bid price for the base bid and the additive or deductive alternate items listed in the Notice to Bidders. In accordance with the contract documents and applicable law, the City may add or deduct items of work from the Project after the lowest responsible bidder is determined.
- 7.2 The successful bidder must submit to the City complete, executed copies of all documents specified in the Contract Checklist within ten (10) working days of receiving written notice of award of the Project. Bidder's security of any successful bidder that fails to do so will be forfeited to the City.
- 7.3 The successful bidder and any subcontractors and others engaged in performance of the Project must have valid local business license(s), as applicable, before commencing work on the Project.
- 7.4 Upon verifying that the successful bidder has provided complete, executed copies of all documents specified in the Contract Checklist an authorized City representative will execute the Project contract, and the City will issue to the successful bidder a notice to proceed specifying the Project commencement date. The number of days within which the Project must be complete begins to run on the Project commencement date.

8. PRICING

- 8.1 If an inconsistency exists between the amount listed for a unit price in a bid and the total listed for that bid item (e.g., if the total listed for a bid item does not equal the unit price listed in the bid multiplied by the quantity listed), subject to applicable law, the unit price will be deemed to accurately reflect the bidder's intent concerning the bid item and the

intended total for the bid item will be deemed to be the unit price as listed in the bid multiplied by the quantity listed.

- 8.2 If the Project bid price is a lump sum total made up of smaller individual bid item prices and an inconsistency exists between the lump sum total bid price and any individual bid item price, subject to applicable law, the individual bid item prices as listed in the bid will be deemed to accurately reflect the bidder's intended bid for the Project and the intended lump sum total bid for the Project will be deemed to be the sum of the individual bid item prices as listed in the bid, even if that sum is different from the amount actually listed as the lump sum total bid for the Project.
- 8.3 Any federal, state, or local tax payable on articles to be furnished for the Project will be included in the lump sum total bid price and paid by the Contractor under the contract. The City is exempt from federal excise tax and will provide a certificate of exemption to the successful bidder upon request.

9. QUANTITIES

- 9.1 Quantities, including but not limited to, material or labor quantities, that are provided in the bid package concerning the Project are estimates only and are provided solely as a general indication of the Project scope. The City does not warrant that such quantity estimates provided in the bid package represent the actual quantities required to perform the Project in accordance with the contract documents. Such quantity estimates do not bind the City, and bidders should not rely on them in preparing their bids. Each bidder is solely responsible for determining the quantities on which to base their bids in light of information contained in the bid package, bidder investigation and analysis of the Project and the Project site, and any other analysis or expertise of the bidder concerning the Project.
- 9.2 The City may amend, decrease or increase the Project work in accordance with the bid package and the contract documents. If the City amends, decreases or increases the Project work prior to award of the Project each bidder will be solely responsible for determining the revised quantities, if any, on which to base their bid in light of information contained in the bid package and any amendments or addenda to the bid package, bidder investigation and analysis of the Project as amended, decreased or increased, the Project site, and any other analysis or expertise of the bidder concerning the Project.

10. SUBSTITUTION OF "OR EQUAL" ITEMS

- 10.1 In accordance with California Public Contract Code Section 3400, where the Special Provisions or Project Plans list products by manufacturer's name, brand or model number such information indicates the quality and utility of the items desired and does not restrict bidders to that manufacturer's name, brand or model number, unless the Special Provisions or Project Plans specify that the listed product is necessary to match others in use on a particular public improvement either completed or in the course of completion. Except where the Special Provisions indicate that a particular brand product is necessary to match others in use, when a manufacturer's name, brand or model number is listed, it will be construed to be followed by the words "or equal" whether or not those words in fact follow the manufacturer's name, brand name or model number listed in the Special Provisions or Project Plans. Unless the Special Provisions or Project Plans indicate that a particular brand product is necessary to match others in use, bidders may propose equals of products listed by manufacturer name, brand name or model number.

- 10.2 Complete information for products proposed as equals must be submitted to the City for review at least seven (7) working days before the time specified for opening bids. To be considered, proposals concerning products proposed as equals must include sufficient information to permit the City to determine whether the products proposed as equals will satisfy the same performance requirements as products listed by manufacturer name, brand or model number. Such performance requirements may include, but are not limited to, size, strength, function, appearance, ease of maintenance and repair, and useful life requirements. Proposals concerning products proposed as equals that are submitted less than seven (7) days before the time specified for opening bids will not be considered. Failure to bid products specified by manufacturer name, brand name or model number where the Special Provisions or Project Plans specify that a particular product is necessary to match others in use, or where no proposal concerning products proposed as equals has been submitted in accordance with this provision may render a bid non-responsive.

11. SUBCONTRACTING

- 11.1 Bids must be in accordance with the requirements of the Subletting and Subcontracting Fair Practices, Act, California Public Contract Code Section 4100 and following. Bids must include a completed list of proposed subcontractors on the form included in the bid package. In accordance with California Public Contract Code Section 4104, completed lists of proposed subcontractors must include the name, business location, the portion (type or trade), and dollar amount of the Project work to be subcontracted for each subcontractor that will perform a portion of the Project work (including special fabrication and installation of a portion of the work) valued in excess of one half of one percent of the total Project bid price. If the Project work includes construction of streets or highways, the completed list of proposed subcontractors must include the subcontractor name, business location, type of work and dollar amount to be subcontracted for each subcontractor that will perform a portion of the Project work (including special fabrication and installation of a portion of the work) valued in excess of one half of one percent of the total Project bid price, or ten thousand dollars (\$10,000), whichever is greater.
- 11.2 In accordance with California Public Contract Code Section 4106, for any portion of the Project work with a value of more than one half of one percent of the total Project bid price for which no subcontractor is listed, or for which more than one subcontractor is listed, bidders certify by submitting their bids that they are qualified to perform that portion of the Project work and that they will perform that portion of the Project work with their own forces. Bidders may not substitute another subcontractor for a subcontractor listed in their bid except as permitted by the City in accordance with Section 4107 and following of the California Public Contract Code.
- 11.3 The Contractor must perform with his or her own organization a value of work amounting to not less than 50% of the contract amount in accordance with the Contract.
- 11.4 Subcontractors must meet all applicable indemnification and insurance requirements as detailed in the Acknowledgement of Indemnity and Insurance Requirement.

12. ASSIGNMENT

- 12.1 Bidders may not assign, sublet, sell, transfer, or otherwise dispose of their bid or any right, title or interest in their bid, or their obligations under their bid, without the written

consent of an authorized representative of the City. Any purported assignment, subletting, sale, transfer or other disposition of a bid or any interest in a bid, or of any obligations under a bid without such written consent will be void and of no effect.

13. BONDS

- 13.1 The successful bidder must submit to the City a performance bond within ten working days of receiving written notice of award. If the Project involves expenditures in excess of twenty-five thousand dollars (\$25,000), the successful bidder must submit to the City a payment or labor and materials bond within 10 days of the date of mailing of the notice of award. Prior to issuance of the final Project payment, the successful bidder must submit a warranty or maintenance bond. All bonds must be executed by corporate sureties who are admitted surety insurers in the State of California in accordance with applicable law and acceptable to the City. Individual sureties will not be accepted. All Project bonds must be executed using the forms provided in the bid package.
- 13.2 In accordance with California Civil Code Section 9554, the payment or labor and materials bond must be in the amount of one hundred percent of the total amount payable by the terms of the Project contract and guarantee payment to persons listed in California Civil Code Section 9100(a) for work performed and for charges for materials, supplies, and equipment provided under the Project contract (including amounts due under or subject to the Unemployment Insurance Code) in accordance with the requirements of California Civil Code Section 9554.
- 13.3 The performance bond must be in the amount of one hundred percent of the amount payable by the terms of the Project contract to guarantee the faithful performance of the Project work.
- 13.4 The warranty or maintenance bond must be in the amount of ten percent of the final Project contract amount and guaranty the Project work against defects in materials, equipment, workmanship, or needed repair for one year from the City's acceptance of the Project work. A warranty or maintenance bond that meets these requirements must be submitted to the City prior to issuance of final Project payment.

14. LABOR LAWS

- 14.1 Bidders must comply with applicable provisions of the California Labor Code.
- 14.2 In accordance with California Labor Code Section 1861, bids must include a workers compensation insurance certification on the form included in the bid package.
- 14.3 In accordance with California Labor Code Section 1771, not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the Project is to be performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed as provided in the California Labor Code must be paid to all workers engaged in performing the Project.
- 14.4 In accordance with California Labor Code Sections 1770, 1773, and 1773.2 et seq, the Director of Industrial Relations has determined the general prevailing wage per diem rates for work in the locality in which the Project is to be performed. In accordance with California Labor Code Section 1773, the City has obtained the general prevailing rate of per diem wages and the general rate for holiday and overtime work in the locality in which the Project is to be performed for each craft, classification or type of worker

needed to perform the Project. In accordance with California Labor Code Section 1773.2, copies of the prevailing rate of per diem wages are on file at the City offices and will be made available on request. The Contractor may also obtain the Director of Industrial Relations General Prevailing Wages Determinations at the following site: <https://www.dir.ca.gov/oprl/dprevwagedetermination.htm>.

- 14.5 In accordance with California Labor Code Section 1777.1, contractors and subcontractors that are found guilty of willfully violating Chapter 1 of Part 7 of Division 2 of the Labor Code (except for Section 1777.5), or that are found guilty of such violations with intent to defraud, and entities in which such contractors or subcontractors have any interest, may be ineligible to bid on, be awarded, or perform Project work as a subcontractor.
- 14.6 Pursuant to, Labor Code Section 1771.1(a), 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 Part 7, Chapter 1 of the Labor Code, 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 Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Labor Code Section 1725.5 at the time the contract is awarded.

BIDDER'S CHECK LIST

Did You:

- _____ Submit equal product proposals, if any, in accordance with the information for bidders included in the bid package at least 7 days before the time specified for bid opening?

- _____ Include with your bid properly completed, accurate copies of the following documents in the following order using the forms included in the bid package:
 - _____ Bidder's check list
 - _____ Proposal and Schedule of Bid Prices that state the bid as intended
 - _____ Copies of each Addendum issued signed and dated on behalf of the bidder
 - _____ Executed Bid Bond
 - _____ Contractor License Information
 - _____ List of Proposed Subcontractors
 - _____ Signed Title 23 USC Section 112 and Public Contract Code 7106 Non-Collusion Affidavit
 - _____ Signed Workers compensation insurance & Public Contract Code 6109 Debarment certification
 - _____ Signed Acknowledgment of Insurance and Indemnity Requirements
 - _____ Signed Title 49 CFR Part 29 Debarment and Suspension Certifications
 - _____ Public Contract Code Section 10285.1 Statement
 - _____ Public Contract Code Section 10162 Questionnaire
 - _____ Public Contract Section 10232 Statement
 - _____ Executed Bidder's Signature Page

- _____ Arrange to have the sealed bid delivered to the City of Sebastopol offices at 714 Johnson Street, Sebastopol, California, 95472 on or before 2:00 p.m. on the Bid Date specified in the Notice to Bidders, or as amended by Addendum.

PROPOSAL

For: Construction of Parquet Street Water and Sewer Replacement and Slurry Seal Project

For the City of Sebastopol, Sonoma County, California.

TO THE HONORABLE CITY COUNCIL
OF THE CITY OF SEBASTOPOL

The undersigned, as bidder, declares that he/she has carefully examined the work, the annexed proposed form of contract, and agrees that if this Proposal is accepted that he/she will contract with the City of Sebastopol, under the form of contract annexed of hereto, to provide all the necessary tools, apparatus, and other means of accomplishing the work as specified in the contract in the manner and time herein prescribed, and in accordance with the requirements of the Engineer as therein set forth, and he/she will take in full payment therefore the following prices for the work to be done completely performed to the satisfaction of the City of Sebastopol, to-wit:

SCHEDULE OF BID PRICES

Item No.	Item Description	Estimated Quantity	Unit of Measure	Unit Cost (in figures)	Total Cost (in figures)
1	Water Pollution Control	1	LS		
2	Shoring and Trench Safety - Sewer & Water	1	LS		
3	Temporary Traffic Control	1	LS		
4	Utility Clearances	1	LS		
5	Utility Conflict Resolution	1	FA	\$21,000.00	\$21,000.00
6	Abandon or Remove Sewer System Components	1	LS		
7	Remove Curb & Gutter	90	LF		
8	Remove Sidewalk	475	SF		
9	6-inch PVC Water Main	650	LF		
10	6-inch Gate Valve	1	EA		
11	Abandon, Remove and Salvage Water System Components	1	LS		
12	3/4-inch Single Water Service	13	EA		
13	1-1/2-inch Dual Water Service	3	EA		
14	Fire Hydrant and Lateral Assembly	3	EA		
15	8-inch Sanitary Sewer Pipe	743	LF		
16	6-inch Sanitary Sewer Pipe	22	LF		
17	48-inch Sewer Manhole	5	EA		
18	6-inch Sanitary Sewer Lateral and Cleanout	20	EA		
19	Slurry Seal	28,000	SF		
20	Permanent Trench Paving	150	TON		
21	Curb & Gutter	95	LF		
22	Sidewalk	485	SF		
23	Landscape Restoration	1	LS		
24	City Monument	1	EA		

Total Base Bid \$ _____

Written in words _____

Within 10 days of the date of mailing of the notice of award, the undersigned agrees to enter into and execute and provide to the City the necessary contract with the necessary bonds and other required documents, and in case of default in executing the necessary contract within the time fixed by the Information for Bidders, the bidder's security accompanying this bid will become the property of and be forfeited to the City of Sebastopol.

Prime Contractor _____

License # _____ Expiration Date: _____

Name of person submitting bid: _____ Email: _____

The Contractor's license number and expiration date are herein stated under penalty of perjury.

By: _____ Title: _____

Dated this _____ day of _____, 20__

CORPORATION

(Corporate Seal)

Corporate signature

Address: _____

Phone No.: _____

President's signature _____

Secretary's signature _____

Corporation organized under the laws of the State of _____

PARTNERSHIP

Partnership Name: _____

Address: _____

Names of Co-Partners and Addresses: _____

SOLE PROPRIETORSHIP

Names of Individuals and Addresses: _____

NOTE: Sign in proper space above.

BID BOND

(NOTE: Bidders must use this form. Use of any other bond form may render a bid non-responsive)

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal, and _____ as Surety, are hereby held and firmly bound unto the CITY OF SEBASTOPOL, as owner in the penal sum of \$ _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed this _____ day of, _____ 20.

The condition of the above obligation is such that whereas the Principal has submitted to the CITY OF SEBASTOPOL a certain Bid, attached hereto and hereby made a part hereof to enter in a contract in writing for the

**Construction of Parquet Street Water and Sewer Replacement and Slurry Seal Project
Contract No. 2023-03**

NOW, THEREFORE,

- a) If said Bid shall be rejected, or in the alternate,
- b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder, in no event, exceed the penal amount of this obligation as herein stated. The Surety for value received, hereby stipulated and agrees that the obligations of said surety and its bond shall be in no way impaired or affected by any extension of the time within which the City may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal

Surety

SEAL

BY: _____

(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bid bond.)

CONTRACTOR LICENSE INFORMATION

The bidder acknowledges that the license required for performance of the Construction of Parquet Street Water and Sewer Replacement and Slurry Seal Project Project is a Class A.

The bidder holds the following California Contractors License(s):

1. License No. _____, Class _____, Expiration Date _____
2. License No. _____, Class _____, Expiration Date _____
3. License No. _____, Class _____, Expiration Date _____
4. License No. _____, Class _____, Expiration Date _____
5. License No. _____, Class _____, Expiration Date _____
6. License No. _____, Class _____, Expiration Date _____
7. License No. _____, Class _____, Expiration Date _____
8. License No. _____, Class _____, Expiration Date _____
9. License No. _____, Class _____, Expiration Date _____
10. License No. _____, Class _____, Expiration Date _____

Bidder's Taxpayer Identification No. _____

Public Works Contractor DIR Registration # _____

LIST OF PROPOSED SUBCONTRACTORS

In accordance with the requirements of the Subletting and Subcontracting Fair Practices, Act, California Public Contract Code Section 4100 and following, listed below are the name, business location, and the portion (type or trade) of the Project work to be subcontracted to each subcontractor that will perform a portion of the Project work (including special fabrication and installation of a portion of the work) valued in excess of one half of one percent of the total bid price. If the Project work includes construction of streets or highways, listed below are the name, business location, and the portion (type or trade) of the Project work to be subcontracted to each subcontractor that will perform a portion of the Project work (including special fabrication and installation of a portion of the work) valued in excess of one half of one percent of the total Project bid price, or ten thousand dollars, whichever is greater. Also listed below are the proposed subcontract dollar amount and current California Contractor's License Number(s) for each proposed subcontractor. Bids that fail to include complete proposed subcontractor information in accordance with this form and Public Contract Code Section 4100 and following may be deemed non-responsive.

In accordance with California Public Contract Code Section 4106, for any portion of the Project work with a value of more than one half of one percent (0.5%) of the total bid price for which no subcontractor is listed, or for which more than one subcontractor is listed, the bidder certifies by submission of its bid that the bidder is qualified to perform that portion of the Project work and that the bidder will perform that portion of the Project work with its own forces. The penalties listed in California Public Contract Code Section 4111 will apply to any substitution of another subcontractor for a subcontractor listed below except as permitted by the City in accordance with Section 4107 and following of the California Public Contract Code.

The Contractor must perform with his or her own organization, a value of work amounting to not less than fifty percent (50%) of the contract amount, except that the bid amount for "Specialty Items" so designated in any Special Provisions if included may be eliminated from the contract amount and not considered as sub-contracted for the purposes of calculating the value of work to be performed by the Contractor. For the purposes of determining the value of work to be performed by the Contractor pursuant to this provision, materials, equipment, incidentals, etc., shall be considered to have been purchased by the contractor or subcontractor that is to install them. Where a portion of an item is subcontracted, the value of work subcontracted will be based on the estimated cost of such portion of the subcontracted item, as determined from information submitted by the Contractor, subject to approval by the Engineer.

1. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____

2. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____

3. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____
4. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____
5. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____
6. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____
7. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____
8. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____

9. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____

10. Subcontractor Name _____
Business Location _____
Trade _____
Subcontract Amount _____
Current Contractor's License No.(s) _____
Public Works Contractor DIR Registration # _____

NON-COLLUSION AFFIDAVIT

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

(Title 23 United States Code Section 112 and Public Contract Code Section 7106)

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 _____, at _____, _____.

Signature of Bidder

WORKERS COMPENSATION INSURANCE CERTIFICATION

By submitting its bid, the bidder certifies as follows:

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

DEBARMENT CERTIFICATION

By submitting its bid, the bidder certifies in accordance with California Public Contract Code Section 6109 that neither the bidder nor any subcontractor included on the list of proposed subcontractors submitted with the bid is ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7. In accordance with California Public Contract Code Section 6109, contractors and subcontractors who are ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7 may neither bid on, be awarded, or perform as a contractor or subcontractor on public works projects.

Signature of Bidder

Printed Name

ACKNOWLEDGMENT OF INSURANCE AND INDEMNITY REQUIREMENTS

Contractor shall procure and maintain for the duration of the contract, and for 2 years thereafter, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors.

MINIMUM SCOPE AND LIMIT OF INSURANCE

Coverage shall be at least as broad as:

1. Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than \$5,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability: Insurance Services Office Form CA 0001 covering Code 1 (any auto), with limits no less than \$2,000,000 per accident for bodily injury and property damage.
3. Workers' Compensation insurance as required by the State of California, with Statutory Limits, and Employers' Liability insurance with a limit of no less than \$1,000,000 per accident for bodily injury or disease.
4. Surety Bonds. Contractor shall provide the following Surety Bonds:
 1. Bid bond
 2. Performance bond
 3. Payment bond
 4. Maintenance bondThe Payment Bond and the Performance Bond shall be in a sum equal to the contract price. If the Performance Bond provides for a one-year warranty a separate Maintenance Bond is not necessary. If the warranty period specified in the contract is for longer than one year, a Maintenance Bond equal to 10% of the contract price is required. Bonds shall be duly executed by a responsible corporate surety, authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California.
5. Professional Liability (if Design/Build), with limits no less than \$2,000,000 per occurrence or claim, and \$2,000,000 policy aggregate. The retroactive date must be shown, and this date must be before the execution date of the contract or the beginning of contract work. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective, or start of work date, the Contractor must purchase extended reporting period coverage for a minimum of five (5) years after completion of contract work. A copy of the claims reporting requirements must be submitted to the City of Sebastopol for review.
6. Contractors' Pollution Legal Liability and/or Asbestos Legal Liability and/or Errors and Omissions (if project involves environmental hazards) with limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate. If the services involve lead-based paint or asbestos identification/remediation, the Contractors Pollution Liability policy shall not contain lead-based paint or asbestos exclusions.

7. If the services involve mold identification/remediation, the Contractors Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.

If the contractor maintains broader coverage and/or higher limits than the minimums shown above for all policies, the City of Sebastopol requires, and shall be entitled to, the broader coverage and/or higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City of Sebastopol.

Self-Insured Retentions

Self-insured retentions must be declared to and approved by the City of Sebastopol. At the option of the City of Sebastopol, either: the contractor shall cause the insurer to reduce or eliminate such self-insured retentions as respects the City of Sebastopol, its officers, officials, employees, and volunteers; or the Contractor shall provide a financial guarantee satisfactory to the City of Sebastopol guaranteeing payment of losses and related investigations, claim administration, and defense expenses. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or the City of Sebastopol.

Other Insurance Provisions:

Additional Insured: The City of Sebastopol, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy 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 and automobiles owned, leased, hired, or borrowed by or on behalf of the Contractor. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance at least as broad as one of the following ISO ongoing operations Forms: CG 20 10 or CG 20 26 or CG 20 33 (not allowed from subcontractors), or CG 20 38; and one of the following ISO completed operations Forms: CG 20 37, 2039 (not allowed from subcontractors), or CG 20 40.

Primary Insurance: For any claims related to this project, the Contractor's insurance coverage shall be primary insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the City of Sebastopol, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the City of Sebastopol, its officers, officials, employees, or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

Notice of Cancellation: Contractor shall provide immediate written notice if (1) any of the required insurance policies is terminated; (2) the limits of any of the required policies are reduced; (3) or the deductible or self-insured retention is increased. In the event of any cancellation or reduction in coverage or limits of any insurance, Contractor shall forthwith obtain and submit proof of substitute insurance.

Acceptability of Insurers: Insurance is to be placed with insurers authorized to conduct business in the state with a current A.M. Best rating of no less than A: VII, unless otherwise acceptable to the City of Sebastopol.

Waiver of Subrogation: Contractor hereby agrees to waive rights of subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the City of Sebastopol has received a waiver of subrogation endorsement from the insurer. However, the Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the City of Sebastopol for all work performed by the Contractor, its employees, agents and subcontractors.

Verification of Coverage: Contractor shall furnish the City of Sebastopol with original Certificates of Insurance including all required amendatory endorsements (or copies of the applicable policy language effecting coverage required by this clause) and a copy of the Declarations and Endorsement Page of the CGL policy listing all policy endorsements to City of Sebastopol before work begins. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The City of Sebastopol reserves the right to require complete, certified copies of all required insurance policies, including endorsements, required by these specifications, at any time.

Subcontractors: Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Contractor shall ensure that the City of Sebastopol is an additional insured on insurance required from subcontractors. For CGL coverage subcontractors shall provide coverage with a form at least as broad as CG 20 38 04 13.

Special Risks or Circumstances: The City of Sebastopol reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other circumstances.

Indemnities

The Contractor shall defend, indemnify and hold the City of Sebastopol, its officials, officers, employees, volunteers and agents free and harmless from any and all claims, demands, causes of action, costs, expenses, liability, loss, damage or injury, in law or equity, to property or persons, including wrongful death, in any manner which actually or allegedly arise out of or are incident to any alleged acts, omissions, negligence or willful misconduct of Contractor, its officials, officers, employees, agents, and subcontractors arising out of or in connection with the performance of the Services, the Project or this Agreement, including without limitation the payment of all consequential damages and attorney's fees and other related costs and expenses except where caused by the active negligence, sole negligence, or willful misconduct of the City, its officers, officials, employees and volunteers. The Contractor shall defend, at Contractor's own cost, expense, and risk, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against the City, its directors, officials, officers, employees, agents, or volunteers. The Contractor shall pay and satisfy any judgment, award or decree that may be rendered against the City or its directors, officials, officers, employees, agents, or volunteers, in any such suit, action or other legal proceeding. The Contractor shall reimburse the City and its directors, officials, officers, employees, agents and/or volunteers, for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided. The Contractor's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the City, its directors, officials, officers, employees, agents or volunteers.

I have read, understand, and agree to comply with the Indemnity and Insurance requirements supplied with this notice to bidders.

Signature of Bidder

Printed Name

TITLE 49, CODE OF FEDERAL REGULATIONS - PART 29
DEBARMENT AND SUSPENSION CERTIFICATION

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any person associated therewith in the capacity of City, partner, director, officer, manager:

1. Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency;
2. Has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal Agency within the past 3 years;
3. Does not have a proposed debarment pending; and,
4. Has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space:

Exceptions will not necessarily result in denial of award but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Signature of Bidder

Printed Name

PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT

In accordance with Public Contract Code Section 10285.1 (Chapter 376, Stats, 1986), the bidder hereby declares under penalty of perjury under the laws of the State of California, that the bidder has ___ / has not ___ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a check mark after "has" or "has not" in one of the blank spaces provided.

The above Statement is part of the Proposal.

Bidders are cautioned that making false certification may subject the certifier to criminal prosecution.

Signature of Bidder

Printed Name

PUBLIC CONTRACT CODE SECTION 10162 QUESTIONNAIRE

In accordance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a 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.

Signature of Bidder

Printed Name

PUBLIC CONTRACT SECTION 10232 STATEMENT

In accordance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two-year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Signature of Bidder

Printed Name

BIDDER'S SIGNATURE PAGE

By signing this proposal the bidder certifies, under penalty of perjury under the laws of the State of California, that the information submitted with this proposal for the Construction of Parquet Street Water and Sewer Replacement and Slurry Seal Project ("Project"), which information includes, but is not limited to, the Bidder's Check List, Proposal and Schedule of Bid Prices, Bid Bond, Contractor License Information, List of Subcontractors, Workers Compensation Insurance Certification, Non-collusion Affidavit, Debarment Certification, Debarment and Suspension Certification, Public Contract Code Section 10285.1 Statement, Public Contract Code Section 10162 Questionnaire, and Public Contract Code Section 10232 Statement, is accurate, true and correct, and is submitted in accordance with the requirements of the bid package issued by the City of Sebastopol concerning the Project and applicable law. By signing this proposal, the bidder representative specified below certifies that he or she is legally authorized to bind the bidder.

The bidder agrees to deliver and to complete the Project within **130 working days** from the date of issuance, by the Engineer, of instructions to proceed with the Project, and within 10 days of the date of mailing of the notice concerning the award, to enter into and execute and provide to the City the Project contract, bonds, insurance, and all other documents specified in the Contract Check List included in the bid package, and in case of default in executing the Project contract within the time fixed by the Information for Bidders, the bidder's security accompanying this bid shall become the property of and be forfeited to the City of Sebastopol.

Prime Contractor

By: _____ Title: _____

Dated this _____ day of _____, 20__

(Corporate Seal)

Corporate signature

Address: _____

Phone No.: _____

President's signature _____

Secretary's signature _____

Corporation organized under the laws of the State of _____

Partnership Name: _____

Address: _____

Names of Co-Partners and Addresses:

Names of Individuals and Addresses:

NOTE: Sign in proper space above.

Date: _____

(Typed or printed name)

(Signature)

(Bidder)

Bidder business address (street, city, state and zip code)

Bidder Business phone: () _____

Bidder Business fax: () _____

CONTRACT DOCUMENTS CHECK LIST

Complete, accurate, executed copies of the following documents must be submitted to the City of Sebastopol in accordance with the bid package issued by the City within ten (10) working days of receiving written notice concerning award of the project. The bidder's security of any successful bidder that fails to do so will be forfeited to the City.

- _____ Contract Part 1 - Agreement
- _____ Performance Bond
- _____ Payment Bond/Labor and Material Bond
- _____ Certificates of Insurance, Declarations page(s) and Endorsements
- _____ Escrow Agreement, if applicable
- _____ Contract Part 2 - General Provisions
- _____ Special Provisions
- _____ Project Plans
- _____ Contractor Safety Program
- _____ Report of Use/Storage of Hazardous Substances

CONTRACT

PART 1 - AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20____, by and between CITY OF SEBASTOPOL, herein called "Owner," acting herein through its CITY MANAGER and

STRIKE OUT (A Corporation) (A Partnership)
INAPPLICABLE (An Individual doing business as _____)
TERMS

of _____, County of _____, State of _____, hereinafter called "Contractor."

WITNESSETH: That for and in consideration of the payment and agreement hereinafter mentioned, to be made and performed by the OWNER, the CONTRACTOR hereby agrees with the OWNER to commence and complete the construction described as follows:

Construction of Parquet Street Water and Sewer Replacement and Slurry Seal Project Contract No. 2023-03

hereinafter called the project, for the sum of _____ Dollars (\$_____) and all extra work in connection therewith, under the terms as stated in the General Conditions and Special Provisions of the Contract; and at his or her (its or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in Notice to Bidders, Bidders Proposal, the General Conditions, and Special Provisions of the Contract, the plans, which include all maps, plats, blue prints, and other drawings or written explanation matter thereof, the specifications and contract documents therefor as prepared by the City of Sebastopol Public Works Department, herein entitled the Engineer all of which are made a part hereof and collectively evidence and constitute the contract.

The Contractor hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" of the Owner, and to fully complete the project within 130 working days. The Contractor further agrees to pay, as liquidated damages, the sum of \$1000.00 for each consecutive working day thereafter as provided in Section 7, "Prosecution and Progress of the Work" of the General Provisions.

The Owner agrees to pay the Contractor in current funds for the performance of the Contract, subject to additions and deductions, as provided in the General Conditions of the contract, and to make payments on account thereof as provided in Section 9, "Measure and Payment" of the General Provisions.

IN WITNESS WHEREOF, the parties to these presents have executed this contract in three (3) counterparts, each of which shall be deemed an original, in the year and day above mentioned.

SEAL CITY OF SEBASTOPOL
(Owner)

Attest: BY: _____

(City Clerk) (City Manager)

SEAL _____
(Contractor)

BY: _____

(Secretary) (Title)

(Witness)

NOTE: Secretary of the Owner should attest. If Contractor is a corporation, Secretary should attest.

100% PERFORMANCE BOND

(NOTE: The successful bidder must use this form. Use of any other bond form may prevent a contract from forming and/or result in forfeiture of the successful bidder's bid bond)

KNOW ALL MEN BY THESE PRESENTS: That we (1) _____
_____ a (2) _____
_____ hereinafter called "Principal" and (3) _____ of _____
_____ State of _____ hereinafter called "Surety", are held and firmly
bound into (4) CITY OF SEBASTOPOL of SEBASTOPOL, CALIFORNIA hereinafter
called "Owner", in the penal sum of _____
Dollars (\$ _____) in lawful money of the United States, for the payment of which sum
well and truly to be made, 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 entered into a
certain contract with the Owner dated the _____ day of _____, 20 __, a copy of which is
hereto attached and made a part hereof for the construction of:

Construction of Parquet Street Water and Sewer Replacement and Slurry Seal Project Contract No. 2023-03

NOW, THEREFORE, if the principal shall well, truly and faithfully perform its duties, all the
undertakings, covenants, terms, conditions and agreements of said contract during the original
term thereof, and any extensions thereof which may be granted by the Owner, with or without
notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract,
and shall fully indemnify and save harmless the Owner from all costs and damages which it may
suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and
expense which the Owner may incur in making good any default, then this obligation shall be void;
otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees
that no change, extension of time, alteration or addition to the terms of the contract or to the work
performed thereunder or the specifications accompanying the same shall in any wise affect its
obligation on this bond, and it does hereby waive notice of any such change, extension of time,
alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall
abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS THEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the _____, day of _____, 20____.

ATTEST:

(Principal)

By: _____

(Address)

(SEAL)

Witness as to Principal

(Address)

(Surety)

ATTEST:

By: _____
Attorney-in-Fact

(Surety) Secretary

(Address)

(SEAL)

Witness as to Principal

(Address)

NOTE: Date of Bond must not be prior to date of Contract.

- (1) Correct Name of Contractor
- (2) A Corporation, a Partnership or an Individual, as case may be
- (3) Correct Name of Surety
- (4) Correct Name of Owner
- (5) If Contractor is Partnership, all partners should execute bond.

(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bond.)

50% PAYMENT BOND

(NOTE: The successful bidder must use this form. Use of any other bond form may prevent a contract from forming and/or result in forfeiture of the successful bidder's bid bond)

KNOW ALL MEN BY THESE PRESENTS: That we _____
(Name of Contractor)
a _____ hereinafter called
"Principal" and
(Corporation, Partnership or Individual)
_____ of _____ State of _____
(Surety)

hereinafter called "Surety", are held and firmly bound unto the CITY OF SEBASTOPOL, 7120 BODEGA AVENUE, SEBASTOPOL, CALIFORNIA 95472, hereinafter called "Owner", in the penal sum of _____ Dollars (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, 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 entered into a certain contract with the Owner dated the _____ day of _____, 20_____, a copy of which is hereto attached and made a part hereof for the construction of:

**Construction of Parquet Street Water and Sewer Replacement and Slurry Seal Project
Contract No. 2023-03**

NOW, THEREFORE, if the principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, and coal, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS THEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the ., day of _____, 20_____.

ATTEST:

(Principal)

By: _____(S)

(Address)

(SEAL)

Witness as to Principal

(Address)

(Surety)

ATTEST:

By: _____
Attorney-in-Fact

(Surety) Secretary

(Address)

(SEAL)

Witness as to Principal

(Address)

NOTE: Date of Bond must not be prior to date of Contract.

(1) If Contractor is a Partnership, all partners should execute bond.

(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bond.)

MAINTENANCE BOND

(NOTE: The Contractor must use this form. Use of any other bond form may prevent release of final payment and/or release of retention under the Contract)

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS the City Council of the City of Sebastopol has awarded to _____, (designated as the "PRINCIPAL") a contract for the Construction of PARQUET STREET WATER AND SEWER REPLACEMENT AND SLURRY SEAL Project, which contract and all of the contract documents as defined therein (designated as the "Contract") are hereby made a part hereof; and

WHEREAS, the PRINCIPAL is required under the terms of the Contract to furnish a bond for the correction of any defects due to defective materials or workmanship in the work performed under the Contract.

NOW, THEREFORE, we the PRINCIPAL and the undersigned _____, as surety (designated as "SURETY"), an admitted surety insurer authorized to do business in the State of California, are held and firmly bound unto the City of Sebastopol, (designated as the "OBLIGEE"), in the penal sum of _____ Dollars (\$ _____), lawful money of the United States, being a sum not less than ten percent (10%) of the final Contract price, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that if, during a maintenance period of one (1) year from the date of acceptance by the OBLIGEE of the contracted work, the PRINCIPAL upon receiving written notice of a need for repairs which are directly attributable to defective materials or workmanship, shall diligently take the necessary steps to correct said defects within seven (7) days from the date of said notice, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

If any action shall be brought by the OBLIGEE upon this bond, a reasonable attorney's fee, to be fixed by the Court, shall be and become a part of OBLIGEE's judgment in any such action. No right of action shall accrue on this bond to, or for the use of, any person or corporation other than the OBLIGEE named herein or the heirs, executors, administrator or successor of the OBLIGEE.

IN WITNESS WHEREOF, the above bound parties have executed this instrument under their seals this _____ day of _____, the name and corporate seals of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(Corporate Seal)

1. PRINCIPAL _____
2. By _____

(Acknowledgment) Title _____
SURETY _____

(Corporate Seal)

By _____
(Attorneys-in-fact)

(Acknowledgment) Title _____

(NOTE TO SURETY COMPANY: A certified copy of unrevoked resolution of authority for the attorney-in-fact must be submitted with and attached to the executed bond.)

ESCROW AGREEMENT

SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between the City of Sebastopol, whose address is 7120 Bodega Avenue, P.O. Box 1776, Sebastopol, California 95473, hereinafter called "City", _____, whose address is _____, hereinafter called "Contractor", and _____, whose address is _____, hereinafter called "Escrow Agent"

For consideration hereinafter set forth, the City, Contractor, and Escrow Agent agree as follows:

1. Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by City pursuant to the Construction Contract entered into between the City and Contractor for the project entitled Construction of PARQUET STREET WATER AND SEWER REPLACEMENT AND SLURRY SEAL PROJECT in the amount of _____ dated _____ (hereinafter referred to as the "Contract"). Alternatively, on written request of the Contractor, the City shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as substitute for Contract earnings, the Escrow Agent shall notify the City within 10 days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the City and Contractor. Securities shall be held in the name of City of Sebastopol and shall designate the Contractor as the beneficial owner.
2. The City shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.
3. When the City makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until such time as the escrow created under this contract is terminated. The Contractor may direct the investments of the payments into securities. All terms and conditions of this agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the City pays the escrow agent directly.
4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the City. These expenses and payment terms shall be determined by the City, Contractor, and Escrow Agent.
5. The interest earned on the securities, or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of the Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the City.
6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from City to the Escrow Agent that City consents to the withdrawal of the amount sought to be withdrawn by Contractor.
7. The City shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven day's written notice to the Escrow Agent from the City of the default, the Escrow

Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the City.

8. Upon receipt of written notification from the City certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payments of fees and charges.

9. Escrow Agent shall rely on the written notifications from the City and the Contractor pursuant to Sections (5) to (8) inclusive, of this agreement and the City and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the City and on behalf of Contractor in connection with the foregoing, and exemplars of their respective signatures, are as follows:

On Behalf of City:

Title

Name

On Behalf of Contractor

Title

Name

On Behalf of Escrow Agent:

Title

Name

Signature

Address

At the time the Escrow Account is opened, the City and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

City:

Contractor:

Title

Title

Name

Signature

Address

Name

Signature

Address

PART 2 – GENERAL PROVISIONS

SECTION 1 Definitions

The following terms as used in any agreement of which these General Provisions are a part are defined as follows:

- 1-1.01 Contract:** The agreement between the City and Contractor concerning the Project, as evidenced by and comprised of the Contract Documents.
- 1-1.02 Architect:** The person or persons so specified on the Special Provisions and/or Project Plans.
- 1-1.03 ASTM:** American Society for Testing and Materials latest edition.
- 1-1.04 Bid Package:** All of the documents listed as comprising the entire Bid Package as specified in the Information for Bidders and representing the full set of documents made available to bidders on the Project.
- 1-1.05 City:** City of Sebastopol
- 1-1.06 Public Works Standard Specifications and Details:** The City of Sebastopol Standard Details and Specifications last approved on November 15, 2022.
- 1-1.07 Contract Documents:** All those documents listed in the Contract as comprising the entire agreement between the City and the Contractor.
- 1-1.08 Contractor:** The successful bidder for the Project and party to the Contract with the City as specified in the Contract Documents.
- 1-1.09 Days:** Unless otherwise specified in the Contract Documents, days mean working days.
- 1-1.10 Engineer:** The City's authorized representative for administration and overall management of the Project, Contract, and Work. The Engineer is the official point of contact between the City and the Contractor.
- 1-1.11 Project:** The CONSTRUCTION OF PARQUET STREET WATER AND SEWER REPLACEMENT AND SLURRY SEAL PROJECT as described in the Special Provisions and Project Plans.
- 1-1.12 Project Plans:** The primarily graphic detailed requirements concerning the Project contained in the Bid Package and any addenda to the Project Plans signed by authorized City representatives and issued prior to bid opening, Equal Product Proposals accepted by the City and signed by authorized City representatives prior to bid opening, and change orders and other amendments to the Project Plans signed by authorized

representatives of the City and the Contractor in accordance with the requirements of the Contract Documents.

- 1-1.13 Project Inspector:** The party or parties charged by the City with inspecting the Work for compliance with the requirements of the Contract Documents and applicable laws and regulations. The Project Inspector acts under the direction of the City and must coordinate with the Engineer as directed by the City in accordance with the Contract Documents.
- 1-1.14 Caltrans Standard Specifications:** The State of California Department of Transportation Standard Specifications 2018 edition.
- 1-1.15 Caltrans Construction Manual:** The State of California Department of Transportation Construction Manual, latest edition
- 1-1.16 Subcontractor:** A person, firm or corporation that is obligated as a party to a contract with the Contractor to perform part of the Work. For purposes of these General Provisions Subcontractors include, but are not limited to, those that are obligated as parties to a contract with the Contractor to specially fabricate and install a portion of the Work according to the Special Provisions and/or Project Plans.
- 1-1.17 Special Provisions:** The detailed Project requirements contained in the Bid Package and any addenda to the Special Provisions signed by authorized City representatives and issued prior to bid opening, Equal Product Proposals accepted by the City and signed by authorized City representatives prior to bid opening, and change orders and other amendments to the Special Provisions signed by authorized representatives of the City and the Contractor in accordance with the requirements of the Contract Documents.
- 1-1.18 Work:** The furnishing of all equipment, tools, apparatus, facilities, material, labor and skill necessary to perform and complete in a good and workmanlike manner the Project as shown in the City Special Provisions and Project Plans in accordance with the Contract Documents and applicable law.
- 1-1.19 Written Notice:** Will be deemed to have been duly served for purposes of these General Provisions and any Contract of which they are a part if delivered in person to the individual or to a member of the firm or to any office of the corporation for whom the notice is intended, or if sent by registered or certified mail to the last known business address known to the party giving notice. Unless otherwise specified in the Contract Documents, the last known address of the Contractor will be that listed in the Contractor's completed Proposal.

SECTION 2 Scope of Work

2-1.01 Documents Furnished by City. The City will furnish to the Contractor, free of charge, five (5) sets of prints of the Project Plans and Special Provisions for execution of the Work. Throughout the performance of the Work the Contractor must keep one copy of the Project Plans and Special Provisions in good order and available for review by the Engineer, the Architect, and any other City contractors or representatives.

2-1.02 Ownership of Documents Furnished by City. All documents furnished by the City, including, but not limited to, the Special Provisions, Project Plans, and any copies, are the property of the City. Documents furnished by the City may not be used on any other work. All documents furnished by the City must be returned to City upon completion of the Work.

2-1.03 Special Provisions and Project Plans.

- a. The Special Provisions and Project Plans are complementary and intended to mutually describe the Work necessary to complete the Project in accordance with the Contract Documents.
- b. In general, the Project Plans indicate dimensions, position and kind of construction, and the Special Provisions indicate qualities and methods. Any Work indicated on the Project Plans and not mentioned in the Special Provisions or vice versa must be furnished as though fully set forth in both. Work that is not particularly detailed, marked or specified will be the same as similar Work that is detailed, marked or specified. The Contractor must furnish items necessary for the operation of equipment depicted in the Project Plans or specified in the Special Provisions that are suitable to allow such equipment to function properly at no extra charge.
- c. The Contractor must notify the Engineer as soon as possible of any apparent errors or inconsistencies, including, but not limited to, typographical or notational errors in the Project Plans, Special Provisions, and/or in work done by others affecting the Work. The Engineer will issue instructions concerning any such apparent errors or inconsistencies. If the Contractor proceeds with Work impacted by apparent errors or inconsistencies without instructions from the Engineer, the Contractor does so at its sole risk and will have all of the obligations and the City will have all of the rights and remedies specified in Section 11 concerning any resulting damage or defect.
- d. The General Provisions apply with equal force to all of the Work, including extra work authorized by the Engineer in accordance with the Contract Documents. The Contractor must submit any required shop diagrams and/or drawings by the times and in the quantities indicated in the Special Provisions. Any such shop diagrams and/or drawings must show completely the Work to be done, expanding on the Project Plans concerning details not previously shown, field conditions and the condition of the Work. Engineer review of such shop diagrams and/or drawings will concern conformance with the requirements of the Contract Documents only. The Engineer assumes no responsibility for the correctness or accuracy of the dimensions or any other contents of any shop diagrams and/or drawings submitted by the Contractor. The Contractor must check all dimensions at the Work site. Shop diagrams and/or drawings must be clearly marked with the name of the Project and the name of the Contractor, subcontractor or supplier making the submittal, and must be stamped and signed by

the Contractor and submitted under a signed transmittal letter from the Contractor certifying that all dimensions have been checked at the Work site. These requirements are mandatory. The Engineer will not review shop diagrams and/or drawings that do not satisfy these requirements. The Contractor will be responsible for any and all discrepancies between dimensions of the actual Work site and/or Work and those shown on shop diagram and/or drawings submitted by the Contractor, and for any other errors contained in or resulting from such shop diagrams and/or drawings, including, but not limited to, errors in material and/or equipment quantities and any resulting errors, delays or additional cost in the performance of the Work. The Contractor will have all of the obligations and the City will have all of the rights and remedies that are specified in Section 11 concerning any discrepancies or errors in shop diagrams and/or drawings submitted by the Contractor, and concerning any resulting errors, delays or additional costs in the performance of the Work.

SECTION 3 Control of Work and Material

3-1.01 Engineer's Status. The Engineer will administer the Project in accordance with the Contract Documents. After execution of the Contract and issuance of the Notice to Proceed, all correspondence and/or instructions concerning the Project between the Contractor and/or City must be forwarded through the Engineer. Except as otherwise provided in the Contract Documents, the Engineer will not be responsible for and will not have control or charge of construction means, methods, techniques, or procedures or for safety precautions in connection with the Work. The Engineer, however, will have authority to reject materials and/or workmanship that do not conform to the requirements of the Contract Documents. The Engineer will also have the authority to require inspection or testing of the Work.

3-1.02 Architect's Status. The Architect will advise the Engineer concerning decisions on all claims of the Contractor and all other matters relating to the execution and progress of the Work or the interpretation of the Contract Documents. The Architect will also advise the Engineer concerning Work that does not conform to the Contract Documents. Whenever, in the Architect's opinion, it is necessary or advisable in accordance with the Contract Documents, the Architect may recommend to the Engineer inspection or testing of the Work, whether or not such Work is then fabricated, installed or completed.

3-1.03 Inspection and Testing of Work and Material.

- a. The City, the Engineer, the Architect and their representatives will have access to the Work at all times wherever it is in preparation or progress. The Contractor must provide proper facilities for such access and for inspection.
- b. The Contractor must inspect all materials as delivered and promptly return all defective materials without waiting for their rejection by the Architect or Engineer.
- c. If the Engineer, the Special Provisions, or any laws, ordinances, or any public authority require any Work to be tested or approved, the Contractor must give the Engineer timely notice of the Contractor's readiness for inspection. Inspections will be promptly made, and where practicable, at the source of supply. Any Work subject to such testing that is covered up without timely notice to the Engineer or without the approval or consent of the Engineer must, if required by the Engineer, be uncovered for examination at the Contractor's expense. The Contractor will have all of the obligations and the City will have all of the rights and remedies that are specified in Section 11 concerning any Work subject to testing that is covered up or otherwise rendered inaccessible for inspection without timely notice to the Engineer and that is not uncovered for examination at the Contractor's expense if required by the Engineer.
- d. Tests of materials or qualification tests required by the Contract Documents must be made in accordance with the Special Provisions and the requirements of the California Building Standards Code as adopted by the City and other applicable law. Copies of all testing reports will be distributed as required in the Special Provisions.

- e. The City or its representatives may order re-examination of questioned Work. If ordered to do so, the Contractor must uncover such Work. If such Work is found to be according to the Contract Documents, the City will pay the cost of uncovering and restoring the Work, unless such Work was subject to testing and covered up without timely notice to or approval of the Engineer. If re-examined Work is found not in accordance with the Contract Documents, the Contractor must pay the cost of uncovering and restoring the Work. The Contractor will have all of the obligations and the City will have all of the rights and remedies that are specified in Section 11 concerning any re-examined Work not in accordance with the Contract Documents that the Contractor fails to uncover and restore at the Contractor's expense.
- f. The Contractor must replace or correct without charge any material or workmanship found not to conform to the requirements of the Contract Documents, unless the City consents to accept such material or workmanship with an appropriate adjustment in the Contract Price. The Contractor must promptly segregate and remove non-conforming material from the Work site. The Contractor will have all of the obligations and the City will have all of the rights and remedies that are specified in Section 11 concerning any failure by the Contractor to replace or correct without charge any material or workmanship that does not conform to the requirements of the Contract Documents and that the City has not consented to accept.

3-1.04 Samples Furnished by the Contractor. The Contractor must furnish all samples for approval as directed in sufficient time to permit the Architect or Engineer to examine, approve and select samples before they are required by the progress of the Work. Portions of the Work for which samples are required and for which the Architect or Engineer has selected samples must be in accordance with such approved samples. Samples must be sent prepaid to the office of the Engineer or to such place as the Engineer may direct.

3-1.05 Materials and Substitutions.

- a. Materials used for the Work must be new and of the quality specified. When not particularly specified, materials must be the best of their class or kind. The Contractor must, if required, submit satisfactory evidence as to the kind and quality of materials.
- b. If the Contractor submitted complete information to the City Engineer for products proposed as equals in accordance with the bid package, and the City approved such products proposed as equals in writing, the Contractor may either furnish such products approved as equals, or furnish the products listed by manufacturer name, brand or model number in the Special Provisions or Project Plans. The City retains the right, in its sole discretion, to accept or reject any other proposed substitution. To be considered, proposals concerning products proposed as equals must include sufficient information to permit the City to determine whether the products proposed as equals will satisfy the same performance requirements as products listed by manufacturer's name, brand or model number. Such performance requirements may include, but are not limited to, size, strength, function, and appearance, ease of maintenance and repair, and useful life requirements. If the City does not accept a proposed substitution, the Contractor must furnish the product specified in the Special Provisions or Project Plans for the Contract Price, regardless of whether the product is specified by manufacturer's name, brand or model number, or otherwise.

- c. During the performance of the Work, all materials must be neatly stacked, properly protected from the weather and other adverse impacts, and placed so as to avoid interference with efficient progress of the Work, with other activities of the City, or with the use of existing City facilities by the public. Materials may not be stored in a manner that presents a safety hazard or a nuisance. All materials must be delivered so as to ensure efficient and uninterrupted progress of the Work. Materials must be stored so as to cause no obstruction and so as to prevent overloading of any portion of the Work. The Contractor will be responsible for damage or loss of materials delivered to and/or stored at the Work site due to weather or other causes. The Contractor must promptly remove from the Work site all materials rejected by the City or its representatives as failing to conform to the requirements of the Contract Documents, whether such non-conforming materials have been incorporated in the Work or not. If the City or its representatives so direct, the Contractor must promptly replace and re-execute Work performed by the Contractor and order the replacement and re-execution of Work performed by subcontractors using non-conforming materials with materials that satisfy the requirements of the Contract Documents without expense to the City. The Contractor will bear the expense of making good all Work destroyed or damaged by such removal. The Contractor will have all of the obligations and the City will have all of the rights and remedies that are specified in Section 11 concerning any failure by the Contractor to replace or re-execute Work using non-conforming materials, and/or to make good all Work destroyed or damaged by such removal and/or execution.
- d. If any portion of the Work done or material furnished under this Contract proves defective and not in accordance with the Project Plans or Special Provisions, and if the Engineer determines that the imperfection of the same is not of sufficient magnitude or importance to make the Work dangerous or undesirable, or if the removal of such Work, is impractical or will create conditions which are dangerous or undesirable, the Engineer may retain such Work, instead of requiring the imperfect Work to be removed and reconstructed, and make such deductions therefore in the payments due or to become due the Contractor as are just and reasonable.

3-1.06 Audit and Examination of Records. The City may examine and audit at no additional cost to the City all books, estimates, records, contracts, documents, bid documents, bid cost data, subcontract job cost reports and other Project related data of the Contractor, subcontractors engaged in performance of the Work, and suppliers providing supplies, equipment and other materials required for the Work, including computations and projections related to bidding, negotiating, pricing or performing the Work or Contract modifications and other materials concerning the Work, including, but not limited to, Contractor daily logs, in order to evaluate the accuracy, completeness, and currency of cost, pricing, scheduling and any other Project related data. The Contractor will make available all such Project related data at all reasonable times for examination, audit, or reproduction at the Contractor's business office at or near the Work site, and at any other location where such Project related data may be kept until three years after final payment under the Contract. Pursuant to California Government Code Section 8546.7, if the amount of public funds to be expended is in excess of \$10,000, this Contract will be subject to the examination and audit of the State Auditor, at the request of the City, or as part of any audit of the City, for a period of three (3) years after final payment under the Contract.

3-1.07 Advertising. No advertising signs of any kind may be displayed on the Work site, or on fences, offices or elsewhere adjacent to the Work site.

3-1.08 Project Schedule. Within ten (10) days after execution and delivery of the Contract, and prior to the issuance of the notice to proceed, the Contractor must deliver to the Engineer a bar chart and critical path (CPM) schedule detailing the Contractor's intended schedule of Work for the entire Project. The schedules must be detailed to clearly show the relative sequence of the items of Work, their inter-relationships, start and completion dates, float, the critical path, and any other item deemed necessary by the Engineer. The schedule must allow for the completion of the entire Work within the Time for Completion.

- a. City Review of Schedule. The City may review the Contractor's submitted schedule and may note any exceptions. The Contractor must correct any exceptions noted by the City within five (5) working days of being notified of the exceptions.
- b. Update of Schedule. After submission of a schedule to which the City has taken no exceptions, the Contractor must submit an updated schedule on a monthly basis or as otherwise specified by the City until completion of the Work. The updated schedule must show the progress of Work as of the date specified in the updated schedule.
- c. Float. The schedule must show early and late completion dates for each task. The number of days between these dates will be designated as "Float". The Float will be designated to the Project and will be available to both the City and the Contractor as needed to complete the Work in accordance with the Contract.
- d. Failure to Submit Schedule. If the Contractor fails to submit schedules within the time periods specified in this Section or submits a schedule to which the City has taken uncorrected exceptions, the City may withhold payments to the Contractor until such schedules are submitted and/or corrected in accordance with the Contract Documents.
- e. Responsibility for Schedule. The Contractor will be solely and exclusively responsible for creating the schedule and properly updating it. The City may note exceptions to any schedule submitted by the Contractor. However, the Contractor will be solely responsible for determining the proper method for addressing such exceptions and the City's review of the schedule will not create scheduling obligations of the City.

3-1.09 Construction Staking. All Work done under this Contract must be in conformance with the Project Plans and contract documents. It is the responsibility of the Contractor to obtain construction staking services. The Contractor must inform the Engineer, forty-eight (48) hours in advance if electronic design files or other information is needed to be transmitted to a surveyor, , in order that lines and grades may be furnished and necessary measurements for record and payment made, with the minimum of inconvenience to the Engineer and delay to the Contractor.

The City will **NOT** provide construction staking services.

The Contractor shall carefully preserve bench marks, reference points, and stakes and in the case of willful or careless destruction, will be responsible for the cost of replacement

and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance

3-1.10 Materials Testing. Materials will be tested by the City of Sebastopol or its authorized agent, following the Caltrans Standard Specifications. Statistical testing may not be used. All individual samples must meet the specified test results. Each material used must meet the specified requirements.

The Contractor must request and coordinate all testing. All tests must occur in the presence of the Project Inspector. The City will, at its sole discretion, have the right to reject any and/or all test results, that do not meet this requirement, and to order a retest in the presence of the Project Inspector. The costs for all retests so ordered will be the responsibility of the Contractor. The cost of all retests will be charged to the Contractor at the actual cost plus 30 percent, with a minimum charge of \$150.00 per test to cover staff and administrative costs.

The City, at its sole expense, will provide all initial material and compaction tests. Sampling and testing will comply with Chapter 3 of the Caltrans Construction Manual at a minimum. Where conditions vary, the City may perform additional testing. Cost for testing of materials offered in lieu of the specified materials will be the responsibility of the Contractor. Cost for R-value tests when required by the Caltrans Standard Specifications will be the responsibility of the Contractor.

Testing will only be performed on normal City working days between the hours of 8:00 a.m. and 4:00 p.m. unless other arrangements are made in advance. Tests performed outside of these hours may be subject to increased charges.

The Contractor must request all tests in writing a minimum of 2 working days in advance of the time desired. A minimum of one working day must be allowed for compilation and reporting of data and test results after tests have been performed. No subsequent layer of material may be placed until a passing test is obtained and acknowledged by the City.

Concrete and asphalt may be supplied only from suppliers approved and certified by the State Department of Transportation. Proposed mix designs for all concrete and asphalt concrete to be placed within the City of Sebastopol must be provided to and approved by the City, prior to placement.

The Contractor must coordinate with the City concerning any additional testing as required.

SECTION 4 Changes in Work

4-1.01 City Directed Change Orders. The City may at any time during the progress of the Work direct any amendments to the Work or any of the Contract Documents, including, but not limited to the Special Provisions, or Project Plans. Such amendments will in no way void the Contract, but will be applied to amend the Contract Price, if such amendments affect the Contract Price, the Project schedule, if such amendments affect the Project schedule, or any other provision of the Contract Documents based on a fair and reasonable valuation of the amendment in accordance with this Section 4.

4-1.02 Writing Requirement. Change orders and other amendments to the Special Provisions, the Project Plans, or other Contract Documents may be made only upon prior written approval of the Engineer and as evidenced by a writing executed by authorized representatives of the City and the Contractor.

4-1.03 Contractor Proposed Change Orders. Unless the Engineer otherwise authorizes or the City and the Contractor otherwise agree, change order proposals submitted by the Contractor must be submitted to the Engineer no later than the time of the proposed change.

4-1.04 All Change Orders. All change order proposals must be submitted on completed City Change Order forms. All such change order proposals must itemize all cost impacts of the proposed change order and include a total price for that change order and the amended Contract Price that would become effective upon execution of the change order. All change order proposals must specify any change in the Project schedule, or in any Project milestone including, but not limited to, the Time for Completion, under the change order. It is understood that change orders that do not specify a change in any milestone, including, but not limited to, the Time for Completion, may be accomplished by the Time for Completion then in effect.

4-1.05 Change Order Pricing. Change order pricing for all change orders, whether, additive, deductive, or both, will be governed by the following:

- a. Prices specified in the Contract Documents will apply to cost impacts involving items for which the Contract Documents specify prices.
- b. Cost impacts involving items for which the Contract Documents do not specify prices may be paid on a lump sum basis as approved by the City.
- c. For cost impacts involving items for which the Contract Documents do not specify prices, and for which no lump sum amount has been approved by the City, charges or credits for the Work will be paid on a time and materials basis in accordance with the following and subject to Caltrans Standard Specifications, provision 9-1.03 concerning allowable direct charges. The time and materials payment will be the sum of and limited to the direct and indirect costs for labor, materials, equipment and overhead calculated as follows:
 1. Labor: The Contractor will be paid the cost of labor for the workers (including foremen when authorized by the Engineer), used in the actual and direct performance of the Work. The cost of labor utilized in performing the Work,

whether the employer is the Contractor, a subcontractor or other entity engaged in the performance of the Work, will be the sum of the following:

- a. **Actual Wages:** The actual wages paid will include any employer fringe benefit payments to or on behalf of the workers for health and welfare, pension, vacation and similar purposes. The actual wages and fringe benefits paid must be at the rates shown on the certified payroll documents submitted by the Contractor.
 - b. **Labor Surcharge:** The labor surcharge will be as set forth in the latest edition of the California Department of Transportation publication entitled "Labor Surcharge and Equipment Rental Rates". The labor surcharge will constitute full compensation for all payments imposed by State or Federal laws and for all other payments made to, or on behalf of, workers engaged in the performance of the Work, excluding the Actual Wages as defined above.
 - c. **Fixed Markup:** A fixed markup of 15% of the sum of the actual wages paid and the labor surcharge applicable to such actual wages, together with the actual wage and labor surcharge costs described in this provision will constitute full and complete compensation for all overhead, profit, incidentals, and any and all other direct or indirect expenses associated with furnishing all labor for the Work.
2. **Materials:** Materials costs will be the direct costs for materials actually exhausted, consumed or entering permanently into the Work, plus a fixed markup of 15% of such direct materials costs, which, together with the direct cost of materials as described in this provision will constitute full and complete compensation for all overhead, profit, incidentals, and any and all other direct or indirect expenses associated with furnishing all materials for the Work.
 3. **Equipment:** All equipment used will be paid in accordance with the rates in subsection 9-1.04D entitled "Equipment Rental" of the Caltrans Standard Specifications, which subsection 9-1.04D is made a part of this Contract, plus a fixed markup of 10% of such equipment rates, which, together with the equipment rates as described in this provision will constitute full and complete compensation for all overhead, profit, incidentals, and any and all other direct or indirect expenses associated with furnishing all equipment for the Work.
 4. Unless approved in writing in accordance with provision 4-1.02 of this Contract in advance of performance of the Work, any and all other cost impacts (including, but not limited to profit, bond premiums or fees, insurance premiums or fees, superintendent labor, clerical expenses, home office expenses, Work site office expenses, utility costs, permit costs, and licensing costs) involving items for which the Contract Documents do not specify prices, and for which no lump sum amount has been approved by the City, will constitute incidentals, full compensation for which will be deemed included in the markups for labor, material, and equipment specified above, and no additional compensation for such cost impacts will be allowed.

4-1.06 Liability Under Unapproved Change Orders. The Contractor will be solely responsible for any and all losses, costs, or liabilities of any kind incurred by the Contractor, any subcontractor engaged in the performance of the Work, any party supplying material or equipment for the Work or any third party that are incurred pursuant to Contractor-proposed change orders prior to issuance of an approved change order executed in accordance with this Section 4. The Contractor will have all of the obligations and the City will have all of the rights and remedies that are specified in Section 11 concerning any work or resulting losses, costs, or liabilities pursuant to a Contractor proposed change order before issuance of an approved change order executed in accordance with this Section 4.

4-1.07 Changes Subject to Contract Documents. Any changes in the Work and/or the Contract Documents pursuant to change orders and any other amendments issued in accordance with the Contract Documents, including this Section 4, will in all respects be subject to all provisions of the Contract Documents, including, but not limited to, the Special Provisions and the Project Plans, except as modified by such change orders or amendments.

4-1.08 Change Order Disputes.

- a. Disputed City-Directed Change Orders. If the Contractor disputes a City directed change order following a reasonable effort by the City and the Contractor to resolve the dispute including, at a minimum, a meeting between appropriate representatives of the Contractor and the City, the Contractor must commence performing the Work consistent with the disputed change order within five (5) working days of the last meeting between representatives of the Contractor and the City to resolve the dispute, or within the time specified in the disputed City directed change order, whichever is later. In performing Work consistent with a disputed City-directed change order pursuant to this provision the Contractor will have all of the Contractor's rights concerning claims pursuant to the Contract Documents and applicable law.
- b. Disputed Contractor Proposed Change Orders. If the City disputes a Contractor proposed change order, the City and the Contractor will use reasonable efforts to resolve the dispute including, at a minimum, holding a meeting between appropriate representatives of the Contractor and the City. Regardless of and throughout any such efforts to resolve the dispute the Contractor must continue performing the Work irrespective of and unmodified by the disputed change order. In continuing to perform the Work, the Contractor will retain all of the Contractor's rights under contract or law pertaining to resolution of disputes and protests between contracting parties. Disputes between the City and the Contractor concerning any Contractor-proposed change order or other amendment do not excuse the Contractor's obligation to perform the Work in accordance with the Contract Documents excluding such Contractor-proposed change order or other amendment by the Time for Completion or waive any other Project milestone or other requirement of the Contract Documents.

SECTION 5 Trenching and Utilities

5-1.01 Excavation More Than Four Feet Deep. In accordance with California Public Contract Code Section 7104, if the Work involves excavation more than four feet deep the Contractor must promptly notify the City in writing before disturbing: any material that the Contractor believes may be 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; any subsurface or latent physical conditions at the Work site differing from those indicated; or any unknown physical conditions at the Work 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 Documents. The City will promptly investigate any such conditions for which notice is given. If the City finds that the conditions do materially differ, or involve hazardous waste, and would cause a decrease or increase in the cost or time of performance of the Work, the City will issue a change order pursuant to Section 4 of these General Provisions. If a dispute arises between the City and the Contractor concerning whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the cost or time of performance, the Contractor will not be excused from any completion date provided in the Contract Documents, but will proceed with all Work to be performed. The Contractor will retain all rights under contract or law pertaining to resolution of disputes and protests between contracting parties.

5-1.02 Excavation of Five Feet or More. In accordance with California Labor Code Section 6705, contractors performing contracts exceeding \$25,000 in cost and involving excavation five or more feet deep must submit for the City's acceptance, prior to excavation, a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during excavation. If the plan varies from the shoring system standards, it must be prepared by a registered civil or structural engineer.

5-1.03 Utility Relocation Costs.

- a. In accordance with California Government Code Section 4215, the City assumes the responsibility for the timely removal, relocation or protection of existing main or trunk line utility facilities located on the Work site if such utilities are not identified by the City in the Special Provisions and/or Project Plans. The City will compensate the Contractor for the costs of locating, repairing damage not due to the Contractor's failure to exercise reasonable care, and removing or relocating existing main or trunk line utility facilities located at the Work site and not identified with reasonable accuracy in the Special Provisions and/or Project Plans. The City will also compensate the Contractor for the cost of equipment on the Project necessarily idled during such work. The Contractor will not be assessed liquidated damages for Work completion delays caused by the City's failure to provide for removal or relocation of such main or trunk line utility facilities.
- b. Nothing in this provision or the Contract Documents will be deemed to require the City to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Work site can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, cleanouts, on or adjacent to the Work site; provided, however, that nothing in this provision or the Contract

Documents will relieve the City from identifying main or trunk lines in the Special Provisions and/or Project Plans.

- c. Nothing in this provision or the Contract Documents will preclude the City from pursuing any appropriate remedy against the utility for delays, which are the responsibility of the utility.
- d. Nothing in this provision or the Contract Documents will be construed to relieve the utility from any obligation as required either by law or by contract to pay the cost of removal or relocation of existing utility facilities.
- e. If the Contractor while performing the Work discovers utility facilities not identified by the City in the Special Provisions and/or Project Plans, the Contractor must immediately notify the City and utility in writing.
- f. Either the City or the utility, whichever owns existing main or trunk line utility facilities located on the Work site, will have sole discretion to effect repairs or relocation work or to permit the Contractor to perform such repairs or relocation work at a reasonable price.

5-1.04 Protection of Existing Facilities and Property.

The Contractor must notify Underground Service Alert (USA) for marking the locations of existing underground facilities.

The Contractor must take all necessary measures to avoid injury to existing surface and underground utility facilities in and near the Work site. No error or omission of utility markouts will be construed to relieve the Contractor from his responsibility to protect all underground pipes, conduits, cables or other structures affected by the work.

The existing underground facilities in the area of Work may include telephone, television and electrical cables, gas mains, water mains, sewer pipe and drainage pipe. The various utility companies must be notified before trenching begins and at such other times as required to protect their facilities. All underground facilities must be located and exposed ahead of trenching to prevent damage to the facilities, and to determine the depth and character of all facilities that cross or infringe on the trench prism. The Contractor must immediately notify the Engineer of any facilities found. If damage should occur to the existing facilities, the utility company and the City must be notified immediately and, repairs acceptable to the utility company must be made at the Contractor's expense.

The Project Plans show the underground utilities on the site of the construction insofar as they are known to the City. The drawings may not show facilities apparent from visual inspection of the site or service laterals or appurtenances, the existence of which can be inferred from the presence of other visible facilities such as buildings, meters, junction boxes, etc. on or adjacent to the construction site.

If in the performance of the Work an existing utility is encountered that is not shown on the Project Plans and is not apparent or inferable from visual inspection of the Work site, the Inspector must be notified immediately. The Engineer will determine, whether the

Project Plans or Special Provisions should be modified, or whether the existing utility should be relocated or whether the Contractor must work around the existing utility. The Contractor must replace, at his or her own expense, in as good condition as they were prior to the start of construction, all existing improvements and surroundings damaged by his or her operation. Reconstruction of all existing improvements must conform to Public Works Standard Specifications and Details under the direction of and subject to the acceptance by the Engineer.

Should the Contractor fail to take adequate measures to avoid injury or damage to the facilities described above, the City may take any actions necessary to protect such facilities from the Contractor's operations. Subject to Section 5 of the General Provisions, the City may withhold the cost of injury to existing surface and underground utility facilities in and near the Work site from amounts due or that may become due the Contractor.

SECTION 6 Project Facilities

6-1.01 Work Site Offices. Any Work site office facilities used by the Contractor and/or its privities must conform to all applicable codes, ordinances and regulations. The cost of such Work site office facilities will be paid from and included in the Contract Price.

6-1.02 City Rights of Access and Ownership. The City and its authorized representatives will at all reasonable times while such office facilities are located at the Work site (including, at a minimum, all times during which the Work is performed), have access to any such Work site office facilities used by the Contractor and/or its privities. With respect to the right of access of the City and its authorized representatives, neither the Contractor nor its privities will have a reasonable expectation of privacy pursuant to the Fourth Amendment to the Unites States Constitution or other applicable law concerning such Work site office facilities used by the Contractor and/or its privities. Without exception, any and all Project related materials located at such Work site facilities will be deemed at all times to be City property subject to inspection and copying by the City and its authorized representatives at all reasonable times while such facilities are located at the Work site (including, at a minimum, all times during which the Work is performed). Any interference by the Contractor or its privities with the City's rights of access and/or ownership pursuant to this Section 6 will constitute a material breach of the Contract subject to any and all remedies available pursuant to the Contract Documents and at law and equity.

SECTION 7 Prosecution and Progress of the Work

7-1.01 Liquidated Damages. For the purposes of this Contract time is of the essence. The City and the Contractor agree that it will be difficult and/or impossible to determine the actual damage which the City will sustain in the event of the Contractor's failure to fully perform the Work or to fully perform all of the Contractor's obligations that have accrued pursuant to the Contract by the Time for Completion. Accordingly, the City and the Contractor agree in accordance with California Government Code Section 53069.85 that the Contractor will forfeit and pay to the City liquidated damages in the sum of \$1000 per day for each and every calendar day completion of the Work and/or performance of all of the Contractor's obligations that have accrued pursuant to the Contract is delayed beyond the Time for Completion. The City and the Contractor further agree in accordance with California Government Code Section 53069.85 that the liquidated damages sum specified in this provision is not manifestly unreasonable under the circumstances existing at the time the Contract was made, and that the City may deduct liquidated damages sums in accordance with this provision from any payments due or that may become due the Contractor under the Contract.

7-1.02 No Damage for Avoidable Delays. All delays in the Work that might have been avoided by the exercise of care, prudence, foresight and diligence of the Contractor or any privities of the Contractor will be deemed avoidable delays. Delays in the Work that may be unavoidable but that do not necessarily affect other portions of the Work or prevent completion of all Work within the Time for Completion, including, but not limited to, reasonable delays in Engineer approval of shop drawings, placement of construction survey stakes, measurements and inspection, and such interruption as may occur in prosecution of the Work due to reasonable interference of other contractors of the City, will be deemed avoidable delays. The Contractor will not be awarded a change in the Project schedule, the Time for Completion, and/or additional compensation in excess of the contract price for avoidable delays.

7-1.03 Unavoidable Delays. All delays in the Work that result from causes beyond the control of the Contractor and that the Contractor could not have avoided through exercise of care, prudence, foresight, and diligence will be deemed unavoidable delays. Orders issued by the City changing the amount of Work to be done, the quantity of materials to be furnished, or the manner in which the work is to be prosecuted, and unforeseen delays in the prosecution of the Work due to causes beyond the Contractor's control, such as strikes, lockouts, labor disturbances, fires, epidemics, earthquakes, acts of God, neglect by utility owners or other contractors that are not privities of the Contractor will be deemed unavoidable delays to the extent they actually delay the Contractor's completion of the Work. The Contractor will be awarded a change in the Project schedule, the Time for Completion, and/or additional compensation in excess of the contract price for unavoidable delays to the extent such delays actually delay the Contractor's completion of the Work and/or result in the Contractor incurring additional costs in excess of the Contract Price.

Delay due to normal, adverse weather conditions will not be deemed unavoidable. The Contractor should understand that normal adverse weather conditions are to be expected and plan the Work accordingly, such as by incorporating into the Project schedule normal, adverse weather delays as reflected in historical data of the National Oceanic and

Atmospheric Administration of the U.S. Department of Commerce for the weather station most applicable to the Work site.

7-1.04 No Damage for Contractor Caused Delay. Contractor will not be entitled to additional compensation for extended field or home office overhead, field supervision, costs of capital, interest, escalation charges, acceleration costs or other impacts for any delays to the extent such delays are caused by the failure of the Contractor or any subcontractor or other entity engaged in performance of the Work to perform the Work in accordance with the Contract Documents.

7-1.05 No Damage for Delay Not Caused By the City, Delay Contemplated by the Parties, or other Reasonable Delay. Contractor will not be entitled to damages for delay to the Work caused by the following, which the City and Contractor agree will be deemed for purposes of California Public Contract Code Section 7102 either not caused by the City, and/or within the contemplation of the City and the Contractor, and/or reasonable under the circumstances:

- a. Exercise of the City's right to sequence the Work in a manner that would avoid disruption to the City and other contractors based on: the failure of the Contractor or any subcontractor or other entity engaged in the performance of the Work to perform the Work in accordance with the Contract Documents, enforcement by the City or any other governmental agency of competent jurisdiction of any government act or regulation, or enforcement by the City of any provisions of the Contract.
- b. Requests for clarification or information concerning the Contract Documents or proposed change orders or modifications to the Contract Documents, including extensive and/or numerous such requests for clarification or information or proposed change orders or modifications, provided such clarifications or information or proposed change orders or modifications are processed by the City or its representatives in a reasonable time in accordance with the Contract Documents.

7-1.06 Delays Caused by the City and/or It's Privities. Delay caused by the City and/or other contractors of the City will be deemed unavoidable delays. Either the City or the Contractor may propose a change in the Time for Completion and/or the Project schedule for delays that are purported to be caused by the City and/or its privities and that are not reasonable under the circumstances involved and/or that are not within the contemplation of the City and the Contractor. Such proposed changes in the Time for Completion will constitute change order proposals subject to Section 4. In accordance with Section 4, the City and the Contractor may agree upon pricing for the cost impacts, if any, resulting from such delays. If such pricing and/or changes in the Time for Completion and/or the Project schedule are in anticipation of impacts that may, but have not yet occurred, the City will be obligated to pay the Contractor for such anticipated impacts or to award a change in the Time for Completion and/or the Project schedule in accordance with the Contract and any applicable, approved change orders only to the extent the Contractor actually incurs the anticipated impacts. Notwithstanding anything to the contrary in Section 4, the City and the Contractor may agree to a daily rate or cap or lump sum that will apply to the cost impacts, if any, resulting from delay purportedly caused by the City and/or its privities subject to this provision. However, if such daily rate or cap or lump sum is in anticipation of cost impacts that have not yet occurred, the City will be obligated to pay such daily rate or cap or lump sum only to the extent the Contractor actually incurs such cost impacts.

7-1.07 Delay Claims. Whenever the Contractor claims a delay for which the Time for Completion may be extended, the Contractor must request an extension of time within five (5) days of the start of the delay. The request must be in writing and describe in detail the cause for the delay, and, if possible, the foreseeable extent of the delay.

7-1.08 Contractor Coordination of the Work.

- a. The City reserves the right to do other work in connection with or in the vicinity of the Project by contract or otherwise, and Contractor must at all times conduct the Work so as to impose no hardship on the City, others engaged in the Work or other contractors working at the Work site. The Contractor will adjust, correct and coordinate the Work with the work of others so that no delays result in the Work or other work at or near the Work site.
- b. If any part of the Work depends for proper execution or results upon the work of the City or any other contractor, the Contractor will, before proceeding with such Work, promptly report to the City any apparent discrepancies or defects in such other Work. Failure of the Contractor to promptly report any apparent discrepancy or defect will be deemed an acceptance of the City's or other contractor's Work as fit and proper.
- c. The Contractor will anticipate the relations of the various trades to the progress of the Work and will ensure that required anchorage or blocking is furnished and set at proper times. Anchorage and blocking necessary for each trade will be part of the Work except where stated otherwise.
- d. The Contractor will provide proper facilities at all times for access of the City, the Engineer, Architect, and other authorized City representatives to conveniently examine and inspect the Work.

SECTION 8 Contractor Responsibilities

8-1.01 Eligibility. By executing the Contract, the Contractor certifies that the Contractor is not ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7. In accordance with California Public Contract Code Section 6109(a), contractors who are ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7 may neither bid on, be awarded or perform the Work. To the full extent permitted by law the Contractor will hold harmless, indemnify and defend the City from and against any and all damages, costs, and liability arising from or as a consequence of any violation of Public Contract Code Section 6109.

8-1.02 Supervision of the Work. The Contractor will be solely responsible for the performance of the Work, including portions of the Work to be performed by subcontractors. The Contractor is charged with ensuring that all orders or instructions from the City, Engineer or Architect are disseminated to and followed by all subcontractors engaged in performance of the Work. The Contractor will supervise the Work using the Contractor's best skill and attention. At any time during the progress of the Work, the City, the Engineer, or the Architect may require the Contractor and/or subcontractors engaged in performance of the Work to attend a Project meeting and the Contractor will attend, and ensure the attendance of any subcontractors whose attendance is required by the City and/or advisable in light of the matters to be addressed at the meeting.

8-1.03 Contractor's Superintendent. The Contractor will keep on the Work, throughout its progress, a competent superintendent and any necessary assistants, all satisfactory to the City. The superintendent may not be changed without the consent of the City. The superintendent will represent the Contractor and all directions given by the City to the superintendent will bind the Contractor in accordance with the Contract. Superintendent time included in Contractor's completed bid schedule and/or in approved change orders, if any, must be included in Contractor's approved overhead rate and may not be charged as a direct cost.

8-1.04 Competent Employees. The Contractor must at all times enforce strict discipline and good order among the Contractor's employees and may not employ on the Work any unfit person or anyone not skilled in the Work assigned, or anyone incompetent or unfit for the duties of that person. When the City determines that a Contractor employee does not satisfy the requirements of this provision, upon notice from the City, the Contractor must ensure that employee performs no further Work and is no longer present at the Work site. Any such Contractor employee may not again be employed on the Work without City approval.

8-1.05 Items Necessary for Proper Completion of the Work. Except as otherwise noted in the Contract Documents, the Contractor will provide and pay for all labor, materials, equipment, permits, fees, licenses, facilities and services necessary for the proper execution and timely completion of the Work in accordance with the Contract Documents.

8-1.06 Subcontracting.

- a. The Contractor must perform with his or her own organization, a value of work amounting to not less than fifty percent (50%) of the contract amount, except that the bid amount for subcontracted "Specialty Items" if so designated in any Special

Provisions may be eliminated from the contract amount and not considered as sub-contracted for the purposes of calculating the value of work to be performed by the Contractor. For the purposes of determining the value of work to be performed by the Contractor pursuant to this provision, materials, equipment, incidentals, etc., shall be considered to have been purchased by the contractor or subcontractor that is to install them. Where a portion of an item is subcontracted, the value of work subcontracted will be based on the estimated cost of such portion of the subcontracted item, as determined from information submitted by the Contractor, subject to approval by the Engineer.

- b. By executing the Contract, the Contractor certifies that no subcontractor included on the list of proposed subcontractors submitted with the Contractor's bid is ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7. In accordance with California Public Contract Code Section 6109(a), subcontractors who are ineligible to perform work on public works projects pursuant to California Labor Code Sections 1777.1 or 1777.7 may neither bid on, be awarded or perform as a subcontractor on the Work. In accordance with California Public Contract Code Section 6109(b), any contract on a public works project entered into between a contractor and a debarred subcontractor is void as a matter of law. The Contractor will ensure that no debarred subcontractor receives any public money for performing the Work, and any public money that may have been paid to a debarred subcontractor for the Work is returned to the City. The Contractor will be responsible for payment of wages to workers of a debarred subcontractor who has been allowed to perform the Work.
- c. The Contract and the performance of the Work are subject to the requirements of the Subletting and Subcontracting Fair Practices Act codified at California Public Contract Code Section 4100 and following. If the Contractor fails to specify a subcontractor or specifies more than one subcontractor for the same portion of the Work in excess of one-half of 1 percent of the Contractor's total bid, the Contractor agrees that the Contractor is fully qualified to perform that portion of the Work with the Contractor's own forces, and that the Contractor will perform that portion of the Work with the Contractor's own forces. If after award of the Contract the Contractor subcontracts, except as provided for in California Public Contract Code Sections 4107 or 4109, any such portion of the Work, the Contractor will be subject to the penalties set forth in California Public Contract Code Sections 4110 and 4111, including cancellation of the Contract, assessment of a penalty of up to 10 percent of the amount of the subcontract, and disciplinary action by the Contractors State License Board.
- d. No contractual relationship exists between the City and any subcontractor engaged in performance of the Work.
- e. Incorporation of Contract Documents. Contractor agrees to include with all subcontractors in their subcontract 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. Subcontractors hired by Contractor agree to be bound to Contractor and City in the same manner and to the same extent as Contractor is bound to City under the Contract Documents. Subcontractor further agrees to include these same provisions with any sub-subcontractor. A copy of the City's Contract Document indemnity and insurance provisions will be furnished to the

subcontractor upon request. The Contractor shall require all sub-contractors to provide a valid certificate of insurance and the required endorsements included in the agreement prior to commencement of any work and contractor will provide proof of compliance to the City. The Contractor will be solely responsible for any delay or additional costs incurred as a result of its failure to provide adequate or accurate Project information to a subcontractor that results in improper submittals and/or Work, or time or other impacts. The Contractor will have all of the obligations and the City will have all of the remedies that are specified in Section 11 concerning any delay or additional costs incurred due to failure of the Contractor to provide adequate and accurate Project information to subcontractors.

- f. Coordination of Subcontract Work: The Contractor is responsible for scheduling the Work of subcontractors so as to avoid delay or injury to either Work or materials.
- g. Subcontractor agrees to be bound to Contractor and City in the same manner and to the same extent as Contractor is bound to City under the Contract Documents. Subcontractor further agrees to include the same requirements and provisions of this agreement, including the indemnity and Insurance requirements, with any sub-subcontractor to the extent they apply to the scope of the sub-subcontractor's work. A copy of the City's Contract Document indemnity and insurance provisions will be furnished to the Subcontractor upon request.

8-1.07 Insurance. Contractor shall procure and maintain for the duration of the contract, and for 2 years thereafter, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors.

- a. Minimum Scope and Limit of Insurance. Coverage shall be at least as broad as:
 - 1. Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than \$5,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.
 - 2. Automobile Liability: Insurance Services Office Form CA 0001 covering Code 1 (any auto), with limits no less than \$2,000,000 per accident for bodily injury and property damage.
 - 3. Workers' Compensation insurance as required by the State of California, with Statutory Limits, and Employers' Liability insurance with a limit of no less than \$1,000,000 per accident for bodily injury or disease.
 - 4. Surety Bonds. Contractor shall provide the following Surety Bonds:
 - 1. Bid bond
 - 2. Performance bond
 - 3. Payment bond
 - 4. Maintenance bond (based on final contract amount at time of completion)

The Payment Bond and the Performance Bond shall be in a sum equal to the contract price. If the Performance Bond provides for a one-year warranty a separate Maintenance Bond is not necessary. If the warranty period specified in the contract is for longer than one year, a Maintenance Bond equal to 10% of the contract price is required. Bonds shall be duly executed by a responsible corporate surety, authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California.

5. Professional Liability (if Design/Build), with limits no less than \$2,000,000 per occurrence or claim, and \$2,000,000 policy aggregate. The retroactive date must be shown, and this date must be before the execution date of the contract or the beginning of contract work. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective, or start of work date, the Contractor must purchase extended reporting period coverage for a minimum of five (5) years after completion of contract work. A copy of the claims reporting requirements must be submitted to the City of Sebastopol for review.
6. Contractors' Pollution Legal Liability and/or Asbestos Legal Liability and/or Errors and Omissions (if project involves environmental hazards) with limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate. If the services involve lead-based paint or asbestos identification/remediation, the Contractors Pollution Liability policy shall not contain lead-based paint or asbestos exclusions. If the services involve mold identification/remediation,
7. The Contractors Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.

If the contractor maintains broader coverage and/or higher limits than the minimums shown above for all policies, the City of Sebastopol requires, and shall be entitled to, the broader coverage and/or higher limits maintained by the contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City of Sebastopol.

- b. Self-Insured Retentions. Self-insured retentions must be declared to and approved by the City of Sebastopol. At the option of the City of Sebastopol, either: the contractor shall cause the insurer to reduce or eliminate such self-insured retentions as respects the City of Sebastopol, its officers, officials, employees, and volunteers; or the Contractor shall provide a financial guarantee satisfactory to the City of Sebastopol guaranteeing payment of losses and related investigations, claim administration, and defense expenses. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or the City of Sebastopol.

c. Other Insurance Provisions:

1. Additional Insured. The City of Sebastopol, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy 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 and automobiles owned, leased, hired, or borrowed by or on behalf of the Contractor. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance at least as broad as one of the following ISO ongoing operations Forms: CG 20 10 or CG 20 26 or CG 20 33 (not allowed from subcontractors), or CG 20 38; and one of the following ISO completed operations Forms: CG 20 37, 2039 (not allowed from subcontractors), or CG 20 40.
2. Primary Insurance. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the City of Sebastopol, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the City of Sebastopol, its officers, officials, employees, or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.
3. Notice of Cancellation. Contractor shall provide immediate written notice if (1) any of the required insurance policies is terminated; (2) the limits of any of the required policies are reduced; (3) or the deductible or self-insured retention is increased. In the event of any cancellation or reduction in coverage or limits of any insurance, Contractor shall forthwith obtain and submit proof of substitute insurance.
4. Acceptability of Insurers. Insurance is to be placed with insurers authorized to conduct business in the state with a current A.M. Best rating of no less than A: VII, unless otherwise acceptable to the City of Sebastopol.
5. Waiver of Subrogation. Contractor hereby agrees to waive rights of subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the City of Sebastopol has received a waiver of subrogation endorsement from the insurer. However, the Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the City of Sebastopol for all work performed by the Contractor, its employees, agents and subcontractors.
6. Verification of Coverage. Contractor shall furnish the City of Sebastopol with original Certificates of Insurance including all required amendatory endorsements (or copies of the applicable policy language effecting coverage required by this clause) and a copy of the Declarations and Endorsement Page of the CGL policy listing all policy endorsements to City of Sebastopol before work begins. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The City of Sebastopol reserves the right to require complete, certified copies of all required insurance policies, including endorsements, required by these specifications, at any time.

7. Subcontractors. Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Contractor shall ensure that the City of Sebastopol is an additional insured on insurance required from subcontractors. For CGL coverage subcontractors shall provide coverage with a form at least as broad as CG 20 38 04 13.
8. Special Risks or Circumstances. The City of Sebastopol reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other circumstances.

8-1.08 Indemnities. The Contractor shall defend, indemnify and hold the City of Sebastopol, its officials, officers, employees, volunteers and agents free and harmless from any and all claims, demands, causes of action, costs, expenses, liability, loss, damage or injury, in law or equity, to property or persons, including wrongful death, in any manner which actually or allegedly arise out of or are incident to any alleged acts, omissions, negligence or willful misconduct of Contractor, its officials, officers, employees, agents, and subcontractors arising out of or in connection with the performance of the Services, the Project or this Agreement, including without limitation the payment of all consequential damages and attorney's fees and other related costs and expenses except where caused by the active negligence, sole negligence, or willful misconduct of the City, its officers, officials, employees and volunteers. The Contractor shall defend, at Contractor's own cost, expense, and risk, any and all such aforesaid suits, actions or other legal proceedings of every kind that may be brought or instituted against the City, its directors, officials, officers, employees, agents, or volunteers. The Contractor shall pay and satisfy any judgment, award or decree that may be rendered against the City or its directors, officials, officers, employees, agents, or volunteers, in any such suit, action or other legal proceeding. The Contractor shall reimburse the City and its directors, officials, officers, employees, agents and/or volunteers, for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided. The Contractor's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by the City, its directors, officials, officers, employees, agents or volunteers.

8-1.09 Licenses/Permits. The Contractor must, without additional expense to the City, obtain all licenses, permits and other approvals required for the performance of the Work. This includes a valid City Business license.

8-1.10 California Labor Code and Prevailing Wage Requirements.

- a. In accordance with California Labor Code Section 1810, eight (8) hours of labor in performance of the Work will constitute a legal day's work under the Contract.
- b. In accordance with California Labor Code Section 1811, the time of service of any worker employed in performance of the Work is limited to eight hours during any one calendar day, and forty hours during any one calendar week, except in accordance with California Labor Code Section 1815, which provides that work in excess of eight hours during any one calendar day and forty hours during any one calendar week is permitted upon compensation for all hours worked in excess of eight hours during any one calendar day and forty hours during any one calendar week at not less than one-and-one-half times the basic rate of pay.

- c. The Contractor and its subcontractors will forfeit as a penalty to the City \$25 for each worker employed in the performance of the Work for each calendar day during which the worker is required or permitted to work more than eight (8) hours in any one calendar day, or more than forty (40) hours in any one calendar week, in violation of the provisions of California Labor Code Section 1810 et seq.
- d. In accordance with California Labor Code Section 1773.2, the City has determined the general prevailing wages in the locality in which the Work is to be performed for each craft or type of work needed to be as published by the State of California Department of Industrial Relations, Division of Labor Statistics and Research, a copy of which is on file in the Public Works Department and will be made available on request. The Contractor and subcontractors engaged in the performance of the Work must pay no less than these rates to all persons engaged in performance of the Work.
- e. In accordance with California Labor Code Section 1775, the Contractor and any subcontractors engaged in performance of the Work must comply with Labor Code Section 1775 which establishes a penalty of up to \$50 per day for each worker engaged in the performance of the Work that the Contractor or any subcontractor pays less than the specified prevailing wage. The amount of such penalty will be determined by the Labor Commissioner. The Contractor or subcontractor must pay the difference between the 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 prevailing wage rate. If a subcontractor worker engaged in performance of the Work is not paid the general prevailing per diem wages by the subcontractor, the Contractor is not liable for any penalties therefore unless the Contractor had knowledge of that failure 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 part of the Work must include a copy of the provisions of California Labor Code Sections 1771, 1775, 1776, 1777.5, 1813, and 1815.
 - 2. The Contractor must monitor payment of the specified general prevailing rate of per diem wages by the subcontractor by periodic review of the subcontractor's certified payroll records.
 - 3. Upon becoming aware of a subcontractor's failure to pay the specified prevailing rate of wages, the Contractor must diligently take corrective action to halt or rectify the failure, including, but not limited to, retaining sufficient funds due the subcontractor for performance of the Work.
 - 4. Prior to making final payment to the subcontractor, the Contractor must 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 employees engaged in the performance of the Work and any amounts due pursuant to California Labor Code Section 1813.
 - 5. In accordance with California Labor Code Section 1776, the Contractor and each subcontractor engaged in performance of the Work, must keep accurate 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 in performance of the Work. Each payroll record must contain or be verified by a written declaration that it is made under penalty of perjury, stating that the information contained in the payroll record is true and correct and that the employer has complied with the requirements of Sections 1771, 1811, and 1815 for any work performed by the employer's employees on the public works project. The payroll records required pursuant to California Labor Code Section 1776 must be certified and must be available for inspection by the City and its authorized representatives, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations and must otherwise be available for inspection in accordance with California Labor Code Section 1776.

- f. In accordance with California Labor Code Section 1777.5, the Contractor, on behalf of the Contractor and any subcontractors engaged in performance of the Work, will be responsible for ensuring compliance with California Labor Code Section 1777.5 governing employment and payment of apprentices on public works contracts.
- g. In case it becomes necessary for the Contractor or any subcontractor engaged in performance of the Work to employ on the Work any person in a trade or occupation (except executive, supervisory, administrative, clerical, or other non-manual workers as such) for which no minimum wage rate has been determined by the Director of the Department of Industrial Relations, the Contractor must pay the minimum rate of wages specified therein for the classification which most nearly corresponds to Work to be performed by that person. The minimum rate thus furnished will be applicable as a minimum for such trade or occupation from the time of the initial employment of the person affected and during the continuance of such employment.

8-1.11 Laws and Ordinances. The Contractor and all subcontractors engaged in the performance of the Work must conform to the following specific rules and regulations as well as all other laws, ordinances, rules and regulations that apply to the Work. Nothing in the Special Provisions or Project Plans is to be construed to permit Work not conforming to these codes:

- National Electrical Safety Code, U. S. Department of Commerce
- National Board of Fire Underwriters' Regulations
- California Building Standards Code as adopted by the City
- Manual of Accident Prevention in Construction, latest edition, published by A.G.C. of America
- Industrial Accident Commission's Safety Orders, State of California
- Regulations of the State Fire Marshall (Title 19, California Code of Regulations) and Applicable Local Fire Safety Codes
- Labor Code of the State of California - Division 2, Part 7, Public Works and Public Agencies.
- Federal, state, and local air pollution control laws and regulations applicable to the Contractor and/or the Work.

8-1.12 Guaranty. The Contractor guarantees all of the Work for one year from the date the City accepts the Work. Upon receiving written notice of a need for repairs which are directly attributable to defective materials or workmanship the Contractor must make good any defects arising or discovered in any part of the Work by diligently commencing the necessary repairs within seven (7) days from the date of notice from the City. If the Contractor fails to make good any defects in the Work in accordance with this provision, in addition to any other available remedy under the Contract or at law or equity, the City may make good or have made good such defects in the Work and deduct the cost from amounts that may be due or become due the Contractor, and/or call on the Contractor's maintenance bond for the cost of making good such defects and for the City's reasonable legal costs, if any, of recovering against the bond. The Contractor will remain responsible for repairing any Work found to be defective regardless of when such defect is discovered by the City.

8-1.13 Assignment of Unfair Business Practice Claims. In accordance with California Public Contract Code Section 7103.5, the Contractor and any subcontractors offer and agree to assign to the City all rights, title, and interest in and to all causes of action the Contractor or any subcontractors may have under Section 4 of the Clayton Act (15 U.S.C. § 15) or under the Cartwright Act (Chapter 2 (commencing with § 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to this Contract. This assignment will be made and become effective at the time the City tenders final payment to the Contractor, without further acknowledgement by the parties.

SECTION 9 Measurement and Payment

9-1.01 F.O.B. (Freight on Board). All shipments must be F.O.B. destination to the Work site and/or other sites indicated in the Contract Documents. The Contract Price is all-inclusive (including sales tax). There will be no additional compensation paid for containers, packing, unpacking, damage, or insurance.

9-1.02 Payment

1. The Contractor shall submit to the Engineer his or her partial payment estimate by the 15th day of the month, or some other day as agreed to by the Contractor and the Engineer prior to the start of the Work. The partial payment estimate must be a verified application for payment and schedule of values supported by a statement showing all materials installed during the preceding month and the cost of labor expended in the performance of the Work. The Contractor must also provide information with the payment that includes bid item identification and % complete/remaining. Unless otherwise provided in the Contract Documents, no allowances or payments will be made for material or equipment not placed at the Work site.
2. Within ten (10) days after the issuance of the Notice to Proceed, the Contractor shall furnish to the City a detailed Schedule of Values giving a complete breakdown of large lump sum prices and items which include numerous subdivisions of work. The Contractor and City shall jointly review the Schedule of Values and make any adjustments in value allocations if, in the opinion of the City, changes are necessary to establish fair and reasonable allocation of values for the Work components. Front end loading will not be permitted. If, in the City's judgment, more detail (i.e., more items of work) is necessary, the Contractor shall add the additional items identified by the City. The City may also require reallocation of Work components from items in the preliminary schedule if such are allocation is necessary. The Contractor shall submit any necessary revisions for the completed Schedule of Values within 15 days from the Notice to Proceed. The costs indicated in making up this breakdown will be used as a basis for partial payments and shall not be considered as fixing a basis of additions or deductions from the contract.
3. To be eligible for payment the Contractor's applications for payment must be accompanied by certified payroll reports, including "Statement of Non-Performance" for periods where no Work was performed. Certified payroll shall be prepared in accordance with California Labor Code Section 1776 and the Contract for each employee of the Contractor and any subcontractors engaged in the performance of the Work during the preceding months. Applications for payment will not be processed without certified payroll reports.
4. In accordance with California Public Contract Code Section 20104.50, the City will review applications for payment as soon as practicable after receipt. Any application or part of an application that is determined to be improper will be returned to the Contractor as soon as practicable, but no later than seven days after receipt by the City, along with a written description of the reasons why the application is improper. The Contractor's failure to submit a schedule by the time specified in Section 3-1.08, or its submission of a schedule to which the City has taken any uncorrected exception, will serve as a basis for returning an application for payment in its entirety.

5. Unless the Contractor has elected to post securities in lieu of retention in accordance with California Public Contract Code Section 22300 and the Contract, and the Contractor and the City have executed an escrow agreement in accordance with the Public Contract Code and the Contract, the City will make progress payments to the Contractor in accordance with applicable law in the amount of ninety-five (95) percent of the value of the labor actually performed and the material incorporated in the Work as specified in Contractor's verified application for payment upon approval by the City's authorized representative(s). Payment of progress payments will not be construed as acceptance of the Work performed. If the Contractor has elected to post securities in lieu of retention in accordance with Public Contract Code Section 22300 and the Contract and the Contractor and the City have executed an escrow agreement in accordance with the Public Contract Code and the Contract, the City will make payments to the Contractor or the Contractor's escrow agent in accordance with such escrow agreement.
6. Wherever the estimated quantities of Work to be done and materials to be furnished on a unit price basis under this Contract are specified in any of the Contract Documents, including the proposal, such quantities are specified for purposes of comparing bids, and the right is expressly reserved, except as otherwise expressly provided, to increase or diminish such quantities as may be deemed reasonably necessary or desirable by the Engineer to complete the Work. No such increase or diminution will be a basis for claims for adjustments in the Contract Price other than adjustments necessary to reflect the impacts of such changes in quantities based on the applicable contract prices and/or pursuant to Section 4 of this Contract.
7. In accordance with California Public Contract Code Section 20104.50, if the City fails to make a progress payment within thirty (30) days of receipt of an undisputed, properly submitted application for payment, the City will pay the Contractor interest equivalent to the legal rate set forth in subdivision (a) of California Code of Civil Procedure Section 685.010. The number of days available to the City to make a payment without incurring an interest obligation pursuant to this provision and California Public Contract Code Section 20104.50 will be reduced by the number of days, if any, by which the City has delayed return of an application for payment beyond the seven day return requirement set forth in Section 9-1.02(d).
8. The City will pay the Contractor's final invoice in accordance with applicable law and this Section 9 following acceptance of the Work provided that:
 - i. The Contractor has furnished evidence satisfactory to the City that all claims for labor and material have been paid, or the time for filing valid stop notices has passed and no stop notices have been filed, or all stop notices filed have been released by valid release or release bond acceptable to the City.
 - ii. No claim has been presented to the City by any person based upon any acts or omissions of the Contractor or any subcontractor engaged in the performance of the Work.
 - iii. No other claim or dispute exists under the Contract or applicable law concerning payment of the Contractor's final invoice and/or release of the Contract retention.

- iv. The Contractor has filed with the City the Maintenance Bond provided in the Contract Documents with duly notarized signatures of an authorized representative of the Contractor and an attorney-in-fact of an admitted surety insurer acceptable to the City and such Maintenance Bond binds the Contractor as Principal and the Surety in accordance with its terms in the amount of 10% of the final Contract Price.

9-1.03 Non-Allowable Direct Charges. The following costs are not allowable direct charges under the Contract. The following costs may only be paid under the Contract, if at all, as part of any allowance for contractor overhead and/or profit established under the Contract.

- a. Labor costs in excess of applicable prevailing wages pursuant to the Contract and applicable law, liability and workers compensation insurance, social security, retirement and unemployment insurance and other employee compensation and benefits pursuant to bona fide compensation plans in effect at the time specified for the opening of Project bids for contractor and subcontractor employees engaged in the performance of the Work, or in excess of the labor costs specified in provision 4-1.05 of this Contract in the case of cost impacts involving items for which the Contract Documents do not specify prices, and for which no lump sum amount has been approved by the City. However, in no event will allowable direct labor charges under the Contract include employee bonuses, employee vehicles or vehicle allowances, employee telephones or telephone allowances, or employee housing or housing allowances, whether or not such benefits are part of a bona fide compensation plan in effect at the time specified for the opening of Project bids.
- b. Superintendent labor and clerical labor.
- c. Bond premiums
- d. Insurance in excess of that required under Section 8.8
- e. Utility costs
- f. Work Site office expenses
- g. Home office expenses.
- h. Permit or license costs

9-1.04 Retention. The City or its agent may, in accordance with the Contract Documents and applicable law, withhold any payment of monies due or that may become due the Contractor because of:

- a. Defective work not remedied or uncompleted work.
- b. Claims filed or reasonable evidence indicating probable filing of claims.
- c. Failure to properly pay subcontractors or to pay for material or labor.

- d. Reasonable doubt that the Work can be completed for the balance then unpaid.
- e. Damage to another contractor.
- f. Damage to the City.
- g. Damage to a third party.
- h. Delay in the progress of the Work, which, in the City's judgment, is due to the failure of the Contractor to properly expedite the Work.
- i. Liquidated damages or other charges that apply to the Contractor under the Contract.
- j. Any other lawful basis for withholding payment under the Contract.

9-1.05 Securities in Lieu of Retention.

- a. In accordance with Public Contract Code Section 22300, except where federal regulations or polices do not permit substitution of securities, the Contractor may substitute securities for any moneys withheld by the City to ensure performance of the Work. At the Contractor's request and expense, securities equivalent to the amount withheld will be deposited with the City, or with a state or federally chartered bank in California as the escrow agent, who will then pay those moneys to the Contractor under the terms of an Escrow for Security Deposit agreement. The Escrow for Security Deposit agreement is provided in the Contract Documents. Upon satisfactory completion of the Work, the securities will be returned to the Contractor.
- b. Alternatively, at the Contractor's request and expense, the City will pay retentions earned directly to the escrow agent. At the Contractor's expense, the Contractor may direct investment of the payments into securities. Upon satisfactory completion of the Work, the Contractor will receive from the escrow agent all securities, interest, and payments received by the escrow agent from the City pursuant to this provision and the terms of the Escrow for Security Deposit agreement. The Contractor will, within 20 days of receipt of payment, pay to each subcontractor the respective amount of interest earned, less costs of retention withheld from each Subcontractor, on monies withheld to ensure the Contractor's performance of the Work.
- c. Securities eligible for investment in accordance with this provision include those listed in 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.
- d. The Contractor will be the beneficial owner of any securities substituted for moneys withheld and will receive any interest thereon.

SECTION 10 Project Acceptance and Closeout

10-1.01 Occupancy. The City reserves the right to occupy or use any part or parts or the entire of the Work before the Work is fully performed. Subject to applicable law, exercising this right will in no way constitute acceptance of any part of the Work so occupied or used or acceptance of the entire Work, nor will such occupancy or use in any way affect the times when payments will become due the Contractor, nor will such occupancy or use in any way prejudice the City's rights under the Contract, any Contract bonds, or at law or equity. Occupancy or use will not waive the City's rights to assess liquidated damages in accordance with Section 7 after the date of such occupancy or use.

10-1.02 Work Completion and Final Inspection. When the Contractor considers the Work is completed, the Contractor will submit written certification to the Engineer specifying that: the Contract Documents have been reviewed; the Work has been inspected for compliance with the Contract Documents; the Work has been completed in accordance with the Contract Documents; and that equipment and systems have been tested in the presence of the City's representative and are operational. The City and/or the City's authorized representatives will make an inspection to verify that the Work is complete and will notify the Contractor in writing of any incomplete or deficient Work. The Contractor will take immediate steps to remedy the stated deficiencies and give notice of correction to the Engineer. Upon receiving a notice of correction, the City or the City's authorized representatives will re-inspect the Work. The Contractor must correct all punch list items within 10 working days after the issuance of the punch list

10-1.03 Work Acceptance.

- a. All finished Work will be subject to inspection and acceptance or rejection by the City, the Engineer, and the Architect or other government agencies having jurisdiction over the Work. Final acceptance of the Work will be at the discretion of the City.
- b. The City will accept the Work in writing only when the Work has been completed to the City's reasonable satisfaction. Progress payments will in no way be construed as acceptance of any part of the Work.
- c. In evaluating the Work, no allowance will be made for deviations from the Special Provisions, Project Plans or other Contract Documents unless already approved in writing in accordance with the requirements of Section 4, above.
- d. The fact that the Work and materials have been inspected from time to time and that progress payments have been made does not relieve the Contractor of the responsibility of replacing and making good any defective or omitted work or materials in accordance with the requirements of the Contract Documents.

SECTION 11 Remedies and Disputes

11-1.01 Failure to Correct Work. Within ten (10) working days of receiving written notice from the City describing Work that is defective or that is otherwise not in accordance with the requirements of the Contract and/or applicable law and directing that such Work be corrected, the Contractor and/or the Contractor's sureties must give the City written notice of the intent of the Contractor and/or the Contractor's sureties to correct such Work and commence correction of such Work in accordance with the City's notice and the Contract. If the Contractor and/or the Contractor's sureties do not give the City written notice of intent to correct such Work and commence correction of such Work within ten (10) working days of receipt of the City's notice, then the City may correct such work and/or have such work corrected for the account and at the expense of the Contractor and/or its sureties, and the Contractor and/or its sureties will be liable to the City for any resulting excess cost. The City may, in addition to all other remedies that the City may have under the Contract and at law or equity, deduct any such excess cost of completing the Work from amounts that are due or that may become due the contractor.

11-1.02 Termination.

- a. In accordance with California Public Contract Code Section 7105, in addition to all other available remedies that the City may have under the Contract, and at law or equity, the City may terminate the Contract:
 1. If the Contractor or any of its subcontractors engaged in the performance of the Work fails to timely perform the Work and/or any of the Contractor's material obligations under the Contract Documents, including but not limited to submission of an acceptable schedule, that have accrued except for due to reasons beyond the control of the Contractor pursuant to the Contract Documents.
 2. If the Contractor is adjudged bankrupt, or if it should make a general assignment for the benefit of creditors, or if a receiver should be appointed on account of its creditors.
 3. If the Contractor or any of the subcontractors engaged in the performance of the Work persistently or repeatedly refuses or fails to supply enough properly skilled workmen or proper materials for the timely completion of the Work.
 4. If the Contractor fails to make prompt payment to subcontractors engaged in the performance of the Work or for material or labor used in the performance of the Work in accordance with the Contract Documents and applicable law.
 5. If the Contractor or any subcontractors engaged in the performance of the Work persistently disregards laws or ordinances applicable to the performance of the Work, or the instructions of the City, the Engineer, the Architect, or other authorized representatives of the City.
 6. For any reason or for no reason, at the City's sole discretion.

- b. If the City intends to terminate the Contractor's control of the Work for any of the reasons specified in Section 11-1.102(a) 1 through 5, above, the City will immediately serve written notice to the Contractor and its sureties in accordance with the Contract Documents. Notice of the City's intent to terminate the Contract will be given by registered or certified mail and specify the grounds for termination, the required cure and the time by which the cure must be effected. Upon receipt of notice of the City's intent to terminate the Contract for any of the reasons specified in Section 11-1.102(a) 1 through 5, the Contractor will have ten (10) days from receipt of the notice or a longer time specified in the notice to cure its default. If the Contractor does not affect the required cure by the time specified in the notice, the City will issue a written notice of termination to the Contractor and its sureties by registered or certified mail. The notice of termination will specify: that upon receipt of the notice the Contractor's right to perform or complete the Work, including on behalf of the Contractor's sureties, is terminated; that the Contractor's sureties will have the right to take over and complete the Work and perform all of the Contractor's remaining obligations that have accrued under the Contract; and that if the Contractor's sureties do not both give the City written notice of their intention to take over and perform the Contract and commence completion of the Work and performance of all of the Contractor's remaining obligations that have accrued under the Contract within ten (10) days after receipt of notice of termination that the City may declare the Contractor's sureties in default and take over the completion of the Work or have the Work completed for the account and at the expense of the Contractor and its sureties, and the Contractor and its sureties will be liable to the City for any resulting excess cost. The City may, in addition to all other available remedies that the City may have under the Contract Documents and at law or equity, deduct any such excess cost of completing the Work from amounts that are due or that may become due the Contractor.
- c. Upon termination of the Contractor's control of the Work for any of the reasons specified in Section 11-1.102(a) 1 through 5, the Contractor will, if so directed by the City, immediately remove from the Work site any and all materials and personal property belonging to the Contractor which have not been incorporated in the Work and the Contractor and its sureties will be liable upon their bond for all damages caused the City by reason of the Contractor's failure to complete the Work.
- d. Upon termination of the Contractor's control of the Work for any of the reasons specified in Section 11-1.102(a) 1 through 5, above, the City reserves the right to refuse tender of the Contractor by any surety to complete the Work.
- e. If the City completes or has completed any portion of, or the whole of the Work, following termination of the Contractor's control of the Work for any of the reasons specified in Section 11-1.102(a) 1 through 5, above, the City will neither be liable for nor account to the Contractor or the Contractor's sureties in any way for the time within which, or the manner in which such Work is performed, or for any changes made in such Work or for the money expended in satisfying claims and/or suits and/or other obligations in connection with completing the Work. If, following termination of the Contractor's control of the Work for any of the reasons specified in Sections Section 11-1.102(a) 1 through 5, above, the unpaid balance of the Contract Price exceeds the expense of completing the Work, including compensation for additional legal, managerial and administrative services and all other amounts due for the completion of the Work and/or satisfaction of claims of the City and/or others arising out of the Contract and any other charges that apply to the Contractor under the Contract, the difference will be paid to the Contractor. If such

expenses of completing the Work exceed the unpaid balance of the Contract Price, the Contractor or its sureties will pay the difference to the City.

- f. If the Contract or Contractor's control of the Work is terminated for any reason, no allowances or compensation will be granted for the loss of any anticipated profit by the Contractor.
- g. In accordance with California Government Code Section 4410, in the event a national emergency occurs, and public work being performed by contract is stopped, directly or indirectly, because of the freezing or diversion of materials, equipment or labor, as the result of an order or a proclamation of the President of the United States, or of an order of any federal authority, and the circumstances or conditions are such that it is impracticable within a reasonable time to proceed with a substantial portion of the work, then the City and the Contractor may, by written agreement, terminate the Contract. In accordance with California Government Code Section 4411, such an agreement will include the terms and conditions of the termination of the contract and provision for the payment of compensation or money, if any, which either party will pay to the other or any other person, under the facts and circumstances in the case. Compensation to the Contractor will be determined on the basis of the reasonable value of the work done, including preparatory work. As an exception to the foregoing, in the case of any fully completed separate item or portion of the Work for which there is a separate contract price, the Contract price will control. The parties may in any other case adopt the Contract price as the reasonable value of the work or any portion of the work done.

11-1.03 Disputes.

- a. In accordance with California Public Contract Code Section 20104.2, the following procedures apply to claims of \$375,000 or less between the Contractor and the City:
 - 1. The claim must be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment. Nothing in this subdivision is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.
 - 2. For claims of less than fifty thousand dollars (\$50,000), the City will respond in writing to any written claim within 45 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the City may have against the Contractor.
 - 3. If additional information is thereafter required, it will be requested and provided pursuant to this subdivision, upon mutual agreement of the City and the Contractor.
 - 4. The City's written response to the claim, as further documented, will be submitted to the Contractor within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.

5. For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the City will respond in writing to all written claims within 60 days of receipt of the claim, or may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the City may have against the Contractor.
 6. If additional information is thereafter required, it will be requested and provided pursuant to this subdivision, upon mutual agreement of the City and the Contractor.
 7. The City's written response to the claim, as further documented, will be submitted to the Contractor within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the Contractor in producing the additional information or requested documentation, whichever is greater.
 8. If the Contractor disputes the City's written response, or the City fails to respond within the time prescribed, the Contractor may so notify the City, in writing, either within 15 days of receipt of the City's response or within 15 days of the City's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon a demand, the City will schedule a meet and confer conference within 30 days for settlement of the dispute.
 9. Following the meet and confer conference, if the claim or any portion remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed will be tolled from the time the Contractor submits his or her written claim pursuant to subdivision (a) until the time that claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.
 10. This section does not apply to tort claims and nothing in this article is intended nor will be construed to change the time periods for filing tort claims or actions specified by Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.
- b. In accordance with California Public Contract Code Section 20104.4, the following procedures apply to civil actions to resolve claims of \$375,000 or less between the City and the Contractor:
1. Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court will submit the matter to non-binding mediation unless waived by mutual stipulation of both parties. The mediation process will provide for the selection within 15 days by both parties of a disinterested third person as mediator, will be commenced within 30 days of the submittal, and will be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court or by stipulation of both parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

2. If the matter remains in dispute, the case will be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1141.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) will apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.
 3. Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for purposes of this article will be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators will be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses will be paid equally by the parties, except in the case of arbitration where the arbitrator, for good cause, determines a different division. In no event will these fees or expenses be paid by state or county funds.
 4. In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, any party who after receiving an arbitration award requests a trial de novo but does not obtain a more favorable judgment must, in addition to payment of costs and fees under that chapter, pay the attorney's fees of the other party arising out of the trial de novo.
 5. The court may, upon request by any party, order any witnesses to participate in the mediation or arbitration process.
- c. In accordance with California Public Contract Code Section 20104.6:
1. The City will not fail to pay money as to any portion of a claim, which is undisputed except as otherwise provided in the Contract.
 2. In any suit filed under Public Contract Code Section 20104.4 concerning this Contract, the City will pay interest at the legal rate on any arbitration award or judgment. Such interest will accrue from date the suit was filed.

SECTION 12 Additional Provisions

12-1.01 Description of Work. The Work in general consists of furnishing all labor, equipment, materials and supplies to verify existing utility locations, install new water mains, abandonment and partial removal of existing asbestos cement water mains, replacement of water services, water main connections, gate valves, new and relocated fire hydrants, removal of existing sanitary sewer mains, installation of new sanitary sewer mains, new and replacement sanitary sewer manholes, replacement of sanitary sewer laterals and cleanouts, permanent trench restoration, slurry seal of Parquet Street and a portion of Calder Avenue and other such items of work as are required to complete the Project in accordance with this Contract, the Project Plans and Special Provisions.

All Work shall conform to the requirements of the City of Sebastopol Standard Details and Specification Details as they apply, and any modifications or additions herein and/or on the Project Plans.

Work shown on the plans and/or described within the Contract Documents that is not specifically referenced or contained on the bid item list shall be considered as paid for by the various items of work and no additional compensation will be provided.

The estimate of the quantities of Work to be done is approximate only, being as a basis for the comparison of bids, and the City does not expressly or by implication agree that the actual amount of work will correspond therewith but reserves the right to increase or decrease the amount or any portion of the work as directed by the Engineer.

Incidental items of construction necessary to complete the Work in a satisfactory and acceptable manner as shown on the Project Plans and as provided for in the City Special Provisions and not specifically referred to in this section, shall be considered part of the Work and will be understood to be furnished by the Contractor at no additional cost.

12-1.02 Construction Limitations. The Contractor will be expected to conduct his or her operations in a manner, which creates a minimum to the natural vegetation and landscape. Ingress and egress must be via the existing right of way. Care must be exercised to avoid hazards that may cause injury to persons, animals or property either during working hours or after work hours, which will include dust control, backfilling trenches immediately following pipe laying and temporary fencing as required. Excavation made under this Contract must be backfilled before leaving the work for the night.

The Contractor will be responsible for obtaining permission from the property owners for any construction outside of the Work site or easements as shown on the plans. Equipment will be restricted to the immediate area of construction; pipe trenches will be backfilled as soon as possible.

Receptacles for construction residue, including oil, cleaning fluids, and litter, must be covered. Such residues must be disposed of in a proper manner.

Construction activity within the existing right-of-way must be scheduled to minimize traffic inconvenience and safety hazards to motorists, pedestrians and cyclists.

12-1.03 Order of Work. Work as shown on the project plans and described herein shall be constructed in a sequence that is satisfactory to and approved by the Engineer. Additional Order of work requirements may be found on the project plans or within the Special Provisions.

12-1.04 Storm Water Pollution Prevention. The Contractor must perform the Work in compliance with all applicable requirements of the California State Water Resources Control Board pursuant to Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 (“General Permit”) adopted pursuant to regulations adopted by the U.S. Environmental Protection Agency (USEPA) on November 16, 1990 and codified in 40 Code of Federal Regulations Parts 122, 123, 124. The General Permit applies to storm water discharges from construction sites that disturb land equal to or greater than one acre, and to construction activity that results in soil disturbances of less than one acre if the construction activity is part of a larger common plan of development that encompasses one or more acre of soil disturbance or if there is significant water quality impairment resulting from the activity. The General Permit requirements that may apply to the Contractor’s performance of the Work include, but are not limited to:

- a. Development and implementation of a Storm Water Pollution Prevention Plan (“SWPPP”) that specifies Best Management Practices (“BMPs”) that will prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving off site into receiving waters.
- b. Elimination or reduction of non-storm water discharges to storm sewer systems and other waters of the nation.
- c. Inspection of all BMPs.

Portions of the Work that may be subject to the General Permit include, but are not limited to clearing, grading, stockpiling and excavation.

Prior to commencing performance of the Work, the Contractor must prepare and file a Notice of Intent to obtain coverage under the General Permit, a vicinity map, and the applicable fee, with the California State Water resources Control Board, Division of Water Quality, Storm Water Permit Unit, P.O. Box 1977, Sacramento, California 95812-1977.

Prior to commencing performance of the Work the Contractor must also prepare an SWPPP in accordance with all applicable requirements of the General Permit and submit the SWPPP to the Engineer for approval.

The Contractor must also develop and implement a monitoring program to verify compliance with the General Permit.

The SWPPP must include a Work site map. Geometric equations, notes, details, and all data not related to water pollution control work shall be removed to provide clarity. A copy of the Project Plans must be used as a base plan, with the pertinent stage of construction shown as an overlay to accurately reflect Project site conditions at various phases of construction.

The Contractor must revise and update the SWPPP whenever there is a change in construction operations that may affect the site drainage patterns or discharge of pollutants to surface waters, ground waters, or a separate municipal storm sewer system.

Any fines, damages, Work delays or other impacts that result from failure of the Contractor or privities or agents of the Contractor to fully comply with the requirements of the General Permit or to fully implement the SWPPP will be solely the responsibility of the Contractor.

The Contractor must keep a copy of the General Permit, together with updates and revisions, at the Project site and provide copies of the SWPPP at the request of the City.

12-1.05 Maintaining Traffic and Pedestrian Operations. The Contractor must conduct his or her operations so as to cause the least possible obstruction and inconvenience to public traffic. Unless otherwise approved by the Engineer, all traffic must be permitted to pass through the Work.

Due to the need to accommodate and minimize inconvenience to the public, unless expressly specified or approved in writing by the Engineer, no road closures will be permitted. Public vehicular and pedestrian traffic must be allowed to travel through the Work area with an absolute minimum of interruption or impedance unless otherwise provided for in the Contract or approved in writing by the Engineer. The Contractor must make provisions for the safe passage of pedestrians around the area of Work at all times.

Residents affected by construction must be provided passage and access through the Work area to the maximum extent possible. Where existing driveways occur on the street, the Contractor must make provisions for the trench crossings at these points, either by means of backfill or by temporary bridges acceptable to the Engineer, so that the length of shut-down of any driveway is kept to a minimum. In addition, all driveways must be accessible at the end of each workday, and no driveway or property access may be closed for more than four (4) hours during the workday. Access to driveways, houses, and buildings along the road or street must be as convenient as possible and well maintained, and all temporary crossings must be maintained in good condition. To minimize the need for and complexity of detours, not more than one crossing or street intersection or road may be closed at any one time without the written approval of the Engineer.

The Contractor must provide multiple, advance written notices of closures to all affected property owners in a form approved by the Engineer.

Except as otherwise approved by the Engineer, the stockpiling or storing of material in City streets or right of way shall be prohibited. Where this is unavoidable, all such materials must be piled or stored in a manner that will not obstruct sidewalks, driveways, or pedestrian crossings. Gutters and drainage channels must be kept clear and unobstructed at all times. All such materials shall be stored and handled in a manner that protects City streets, sidewalks, or other facilities from damage.

Where approved in advance by the Engineer, the Contractor must construct and maintain detours for the use of public traffic at his or her own expense. Failure or refusal of the Contractor to construct and maintain detours so approved at the proper time will

be a material breach of the Contract subject to any and all remedies available pursuant to the Contract Documents and at law and equity. Such remedies include, but are not limited to, termination pursuant to Section 11.

Throughout performance of the Work the Contractor must construct and adequately maintain suitable and safe crossings over trenches and such detours as are necessary to care for the public and private traffic at all times including Saturdays, Sundays and holidays.

The Contractor will be responsible for keeping all emergency services, including the Sebastopol police and fire departments informed of obstructions to, or detours around any public or private roads caused by reasons of his or her operations.

The Contractor must comply with the State of California, Department of Transportation Manual of warning signs, lights, and devices for use and performance of work within the job site.

The fact that rain or other causes, either within or beyond the control of the Contractor, may force suspension or delay of the Work, shall in no way relieve the Contractor of his or her responsibility of maintaining traffic through the Project and providing local access as specified in this section. The Contractor must, at all times, keep on the job such materials, force and equipment as may be necessary to keep roads, streets and driveways within the Project open to traffic and in good repair and shall expedite the passage of such traffic, using such force and equipment as may be necessary.

Full compensation for conforming to the requirements of this section will be deemed included in the prices paid or the various Contract items of Work and no additional allowances will be made therefore.

12-1.06 Public Safety. The Contractor must at all times conduct the Work in accordance with Construction Safety Orders of the Division of Industrial Safety, State of California, to ensure the least possible obstruction to traffic and inconvenience to the general public, and adequate protection of persons and property in the vicinity of the work.

No pedestrian or vehicle access way may be closed to the public without first obtaining permission of the Engineer.

Should the Contractor fail to provide public safety as specified or if, in the opinion of the Engineer, the warning devices furnished by the Contractor are not adequate, the City may place any warning lights or barricades or take any necessary action to protect or warn the public of any dangerous condition connected with the Contractor's operations and the Contractor will be liable to the City for, and the City may deduct from amounts due or that may become due the Contractor under the Contract, all costs incurred including, but not limited to, administrative costs.

Nothing in this section will be construed to impose tort liability on the City or Engineer.

12-1.07 Preconstruction Conference. A pre-construction conference will be scheduled, at which time the Contractor must present his or her proposed work schedule in accordance with Section 3-1.08 of the General Provisions, information concerning offsite yards, subcontractors, location of disposal and stockpile areas, and traffic control plans. All

such schedules will be subject to the approval of the Engineer and the applicable agencies

12-1.08 Owner Notification. The Contractor must notify all property owners and businesses affected by the Work at least 48 hours before Work is to begin. The notice must be in writing in the form of a door hangar, and must indicate the Contractor's name and phone number, type of work, day(s) and time when Work will occur. Notices must be reviewed in advance and approved by the Engineer.

12-1.09 Emergency Service Providers Notifications. The Contractor must furnish the name and phone number of the Safety Supervisor appointed in Section 13 to the City Police Department dispatcher for contact in the event of an emergency and shall keep such information updated as required to provide 24-hour phone access.

12-1.10 Clean up. Section 4-1.02 of the Caltrans Standard Specifications is made a part of this Contract.

Before final inspection of the work, the Contractor must clean the construction site and all ground occupied by him in connection with the work, of all rubbish, excess material, falsework, temporary structures and equipment. All parts of the work shall be left in a neat and presentable condition.

Nothing herein shall require the Contractor to remove warning, regulatory, and guide signs prior to formal acceptance by the Engineer.

12-1.11 Obstructions. Section 15, "Existing Highway Facilities", of the Caltrans Standard Specifications, is made a part of this Contract; except that measurement and payment shall be as described herein.

Attention is directed to the possible existence of overhead and underground power, telephone, and television cable poles, underground sewer mains and laterals, underground gas mains, and underground water mains and laterals within the area in which construction is to be performed.

Prior to starting work (a minimum of 2 working days in advance), the Contractor must call Underground Service Alert (USA), toll free (800) 642-2444 and provide USA with all necessary data relative to the proposed work. USA will accept calls and process information to participating agencies that have underground facilities in the area between the hours of 7:30 a.m. and 5:00 p.m. daily, except Saturdays, Sundays, and holidays. Between the hours of 5:00 p.m. and 7:30 a.m. calls will be recorded and then processed after 7:30 a.m. For emergency situations, after hours and on Saturdays, Sundays and holidays, the Contractor shall contact the organization owning the affected facility. Upon notification, agencies having facilities in the area of the proposed excavation will mark their locations in the field using USA standard colors and codes to identify the facility.

The Contractor will be required to work around public and private utility facilities and other improvements that are to remain in place within the construction area and he will be held liable to the owners of such facilities or interference with service resulting from his operations.

12-1.12 Hours of Work. Unless otherwise specified herein, all construction activity, except for emergency situations, will be confined to Monday through Friday between the hours of 7:00 a.m. and 5:30 p.m. Mufflers and/or baffles will be required on all construction equipment to control and minimize noise. The Contractor must comply with all applicable noise regulations in the City's Municipal Code.

Saturday, Sunday, holidays and overtime shall not be regarded as working days. Work shall not be allowed on non-working days without the expressed approval of the Engineer. The Contractor shall make a request for approval in writing with the stipulation (implied or expressed) that the Contractor shall pay for all overtime labor charges at the City's actual cost recovery rate for the City's contract inspector and/or resident engineer. All overtime labor charges shall be deducted from the final payment along with any liquidated damages.

Work necessary for the proper care and protection of work already performed or in case of emergency may be allowed without permission of the Engineer.

12-1.13 Dust Control. The Contractor must furnish all labor, equipment, and means required and carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance. The Contractor will be responsible for any damage resulting from any dust originating from the performance of the Work. The use of water resulting in mud on streets, sidewalks, or driveways, will not be permitted as a substitute for sweeping or other methods of dust control. The Contractor may not discharge smoke, dust, or any other air contaminants into the atmosphere in such quantity as will violate the regulations of any legally constituted authority.

Dust control must conform to the provisions in Section 10-5, "Dust Control", of the Caltrans Standard Specifications, which section is made a part of this Contract.

No separate payment will be made to the Contractor for controlling dust, whether caused by construction traffic or by public traffic only. Full compensation for dust control will be considered as included in the Contract Price paid for the various items of work and no additional compensation will be allowed, therefore.

12-1.14 Water For Construction And Dust Control. Contractors may obtain water from a filler line located at the City Corporation Yard, 714 Johnson Street, or from an alternate source approved by the Public Works Superintendent prior to the start of construction. Contact the Sebastopol Public Works Department for information. Unauthorized use of City hydrants or water outlets is not allowed and will result in legal proceedings by the City of Sebastopol.

12-1.15 Sanitary Provisions. The Contractor must maintain such camps, as he or she may establish for the housing and feeding of the laborers, employed by him or her for the Work, in accordance with the status and general health laws of the State of California pertaining to the sanitation of dwelling and camps and in conformity with such rules and regulations pertaining to labor camps, as have been or may hereafter be prescribed by the State Board of Health or by the Commission of Emigration and Housing of California acting in conjunction with said State Board of Health.

12-1.16 Protection And Restoration Of Vegetation. Trees, lawns, shrubbery and vegetation that are not to be removed must be protected from damage or injury. Existing trees, shrubs, and other plants, that are not to be removed and are injured or damaged by reason of the Contractor's operations, must be replaced by the Contractor in accordance with the requirements in Section 20-3.01C(4), "Replacement Plants", of the Caltrans Standard Specifications. Section 20-3.01C(4) of the Caltrans Standard Specifications is made a part of this Agreement.

When it is necessary to excavate adjacent to existing trees, shrubs, or hedges, the Contractor must use all possible care to avoid injury to the trees, shrubs, or hedges and their roots. No roots or limbs two inches (2") or larger in diameter may be cut without the express approval of the Engineer.

All roots two inches (2") in diameter and larger left in place must be wrapped with burlap to prevent scarring or excessive drying. When it is necessary to cut limbs and branches of trees to provide clearance for equipment used in construction, the Contractor must repair the damaged areas by properly painting with an emulsified asphalt type seal. All cuts through 1/2" or larger roots and limbs must be hand trimmed and cleanly cut before being repaired.

12-2.01 Cultural Resources. In accordance with the National Historic Preservation Act of 1966 (U.S.C. 470), the following procedures are implemented to insure historic preservation and fair compensation to the Contractor for delays attendant to the cultural resources investigation. Contractor hereby agrees to comply with these procedures.

12-2.02 Surplus Material. All material removed or excavated during the course of construction will be surplus. All surplus material will be the property of the Contractor and be disposed of outside the right-of-way, unless the City elects to salvage certain objects that are determined to be of historical interest. The City reserves the right of ownership of all objects that it elects to salvage, and the Contractor must protect such objects from subsequent damage until delivered unto the care of the owner.

12-2.03 Historical Finds. In the event potential historical, architectural, archeological, or cultural resources (hereinafter called cultural resources) are discovered during subsurface excavations at the site of construction, the following procedures will apply:

1. The Contractor must immediately notify the Engineer and stop any Work which may jeopardize the find pending an investigation of its significance;
2. The Engineer will select a qualified archeologist (such as through the Northwest Information Center at Sonoma State University or other official contact) and wait for an archaeologist to complete an evaluation of significance before continuing Work in that area.
3. The Engineer will supply the Contractor with a "Stop Work Order" directing the Contractor to cease all portions of the Work that the Engineer determines may impact the find. The "Stop Work Order" will be effective until a qualified archaeologist assesses the value of the potential cultural resources. The "Stop Work Order" will contain the following:
 - a. A clear description of the Work to be suspended;

- b. Any instructions regarding issuance of further orders by the Contractor for materials services;
 - c. Guidance as to action to be taken regarding subcontractors;
 - d. Any direction to the Contractor to minimize costs; and
 - e. Estimated duration of the temporary suspension.
4. If the archaeologist determines the potential find is a bona fide cultural resource, the Engineer may extend the duration of the "Stop Work Order" in writing, and if so the "Stop Work Order" will remain in effect and Work subject to the "Stop Work Order" may not resume work until authorized by the Engineer.

12-2.04 Cultural Resources Defined. Possible indicators that a cultural resource has been found include, but are not limited to the following:

1. Prehistoric-era archaeological site indicators: obsidian tools, tool manufacture waste flakes, grinding and other implements, dwelling sites, animal or human bones, fossils, and/or locally darkened soil containing dietary debris such as bone fragments and shellfish remains.
2. Historic-era site indicators: ceramic, glass, and/or metal.

12-2.05 Engineer's Discretion. Once possible cultural resources are found at the Work site, the Engineer may use discretion to continue the work, regardless of the cultural resource find, if the Engineer determines that there are overriding considerations such as the instability of the excavation site, that there are weather or other conditions which would preclude leaving the site exposed, or if the site would be unsafe to workers who would retrieve cultural resource items from therein.

SECTION 13 Safety Rules and Requirements

13-1.01 General

- a. Within ten (10) working days following notice of award the Contractor must submit to the City a safety program for the Work site (“Contractor’s Safety Program”) and provide evidence that the Contractor’s safety policies and procedures relevant to the Work.
- b. The Contractor shall insure that its employees and subcontractors, as well as visitors and others brought onto the Work site under the authority of the Contractor, shall, at all times, observe all applicable Local, State and Federal safety requirements as well as the safety rules and requirements contained in this Contract including, but not limited to, the Contractor’s Safety Program.
- c. In accordance with generally accepted construction practices and applicable law, the Contractor will be solely and completely responsible for conditions at the Work site, including safety of all persons and property during performance of the Work. This requirement will apply continuously and not be limited to normal working hours. For purposes of California Labor Code Section 6400 and related provisions of law, the Contractor and the Contractor’s privities and any other entities engaged in the performance of the Work will be “employers” responsible for furnishing employment and a place of employment that is safe and healthful for all employees of any such entities engaged in the performance of the Work. Neither the City nor its officials, officers, employees, agents, volunteers or consultants will be “employers” pursuant to California Labor Code Section 6400 and related provisions of law with respect to the Contractor, the Contractor’s privities or other entities engaged in the performance of the Work.
- d. The Contractor agrees with respect to the Work, and the Work site, the Contractor will be responsible for not creating hazards and for having hazards corrected and/or removed, for taking appropriate, feasible steps to protect the Contractor’s employees from such hazards and that the Contractor has instructed and/or will instruct its employees to recognize such hazards and how to avoid the associated dangers.
- e. The Contractor will be solely responsible for the implementation and maintenance of safety programs to ensure that the Work site is maintained and the Work is performed in a safe manner in accordance with the Contract and applicable law. If the Contractor damages City equipment or property, the Contractor shall report the incident to the Engineer on or before the next calendar day and provide such information as necessary for the City to evaluate the damage.
- f. The Contractor shall submit a written request to the Engineer in order to obtain keys or other devices to gain access to City facilities. Keys and other devices shall not be copied or otherwise replicated and shall remain in the possession of

the Contractor and its employees or subcontractors at all times and shall be returned to the City when no longer required to complete the Work.

- g. The Contractor must furnish and place proper guards and systems for the prevention of accidents, including, but not limited to, those systems required pursuant to Title 8, Section 1670 et seq. of the California Code of Regulations concerning safety belts and nets. The Contractor must provide and maintain any other necessary systems or devices required to secure safety of life or property at the Work site in accordance with accepted standards of the industry and applicable law. The Contractor must maintain during all night hours sufficient lights to prevent accident or damage to life or property.
- h. Examination, inspection, investigation, and review by the City and or its employees and representatives, of the Contractor's Safety Plan or the Contractor's performance of the Work will not constitute review or approval of the adequacy of the Contractor's safety measures in, on, or near the Work site and shall not relieve the Contractor of any of the Contractor's obligations under the Contract and applicable law to ensure that the Work site is maintained and the Work is performed in a safe manner.

13-1.02 Safety Supervisor; Hazardous Substances

- a. The Contractor shall designate an individual who is qualified and authorized to supervise and enforce compliance with the Contractor's Safety Program ("Safety Supervisor"). The Contractor shall notify the Engineer in writing prior to the commencement of the Work of the name and contact information of the Safety Supervisor. The Safety Supervisor shall be either a full-time employee of the Contractor or a contracted safety consultant with experience and/or professional certifications indicating experience in construction safety. The Safety Supervisor shall provide the City, upon request, with weekly safety inspection reports identifying hazards found and corrective actions taken. The Safety Supervisor shall also be responsible for supervising compliance with applicable safety requirements on the Work site and to develop and implement safety training for all job personnel. The City shall have the authority, but not the duty, to require the Contractor replace the Safety Supervisor if the Supervisor's performance is judged by the City to be improper or inadequate.
- b. Prior to beginning the Work, the Contractor shall review the City's Hazard Communication Program. In addition, if the Contractor brings any substance onto City property, other than gasoline or diesel fuel, for which a manufacturer has prepared a Materials Safety Data Sheet (*MSDS*), in quantities greater than 25 pounds, 200 cubic feet, or five gallons; or any substance defined in Cal/OSHA regulations as "acutely hazardous;" or if the Contractor's work activities may expose City employees to any of the substances described above, the Contractor shall first complete and submit to the Engineer a "Report of Use/Storage of Hazardous Substances on City Property" form (*form(s) provided at Project's Pre-Construction meeting*).

13-1.03 Non-Compliance with Safety Rules and Regulations

- a. In the event the Contractor fails to comply with applicable Local, State and Federal safety requirements, or the safety rules and requirements contained in this Contract including the provisions of the Contractor's Safety Plan, the City reserves the right to (i) notify the Contractor of its failure to comply, and the reasons therefore, and require that the Contractor immediately undertake, at Contractor's own expense, all actions necessary to bring the Contractor and/or the Project into compliance and (ii) exercise the right to suspend all or part of the Work if the Contractor fails or refuses to undertake and complete such corrective action within the time specified in the notice.
- b. No extension of time or additional compensation will be granted as a result of any suspension of the Work and any issuance by the City of any notice or suspension order shall not operate to waive or otherwise diminish the (i) Contractor's obligations under this Contract to provide a safe Work site or (ii) City's right to pursue or enforce any remedy, power or right under the Contract or otherwise available at law.

13-1.04 Accidents and Safety Emergencies

- a. In accidents or emergencies affecting the safety or protection of persons, the Work, the Work site, or property adjacent thereto, the Contractor shall immediately act to prevent threatened damage, injury or loss and notify the Engineer as soon as possible of the facts and circumstances surrounding the emergency including the involvement of any emergency responders (police, fire, medical, etc.).
- b. The City reserves the right to conduct an investigation of the accident or emergency either in conjunction with, or separate of, the Contractor, and the Contractor shall provide the City all access necessary to permit the City to perform a full and complete investigation, the scope of which shall be at the sole discretion of the City.
- c. Within 24 hours of accidents or emergencies involving in-patient hospitalization or a fatality, the Contractor shall provide the Engineer with a completed Contractor's Injury/Fatality Incident Report (*form(s) provided at Project's Pre-Construction meeting*). The Contractor shall also notify the Engineer in writing of any claims brought against the Contractor, or any subcontractor, judicial or otherwise, related to any such injuries and/or fatalities including a copy of such claim(s).

PART 3 SPECIFICATIONS

SECTION 01 10 00

SUMMARY OF WORK

PART 1 GENERAL

1.1 PROJECT DESCRIPTION

- A. The work includes, but is not limited to, furnishing all labor, equipment, materials and supplies to verify existing utility locations, install new water mains, abandonment and partial removal of existing asbestos cement water mains, replacement of water services, water main connections, gate valves, new and relocated fire hydrants, removal of existing sanitary sewer mains, installation of new sanitary sewer mains, new and replacement sanitary sewer manholes, replacement of sanitary sewer laterals and cleanouts, permanent trench restoration, slurry seal of Parquet Street and a portion of Calder Avenue, and all other work shown on the plans and described in specifications in accordance with the Contract Documents.
- B. All work to be performed is located along Paquet Street and Calder Avenue in Sebastopol, California.
- C. Questions regarding the work should be directed to the Engineer.
- D. The Contractor shall coordinate all related work with affected parties including, but not limited to City of Sebastopol, Pacific Gas and Electric Company, Comcast and AT&T.
- E. The Contractor shall take careful and accurate pre-construction photographs and video of the existing conditions prior to the start of construction. Copies of the photographs and video must be delivered to the Engineer prior to start of construction.
- F. The Contractor shall provide a detailed schedule of work. See Section 01 32 16, "Construction Progress Schedules," for schedule requirements. Contractor shall coordinate daily with the City.

1.2 APPLICABLE CODES

- A. In instances where these specifications do not state exact materials or methods of construction, the applicable minimum requirements of the 2018 edition of the California Building Code shall govern, as amended by local agencies.
- B. Perform excavation work in accordance with California Government Code Section 4216. Refer also to Contract General Provisions Section 5-1.03.

1.3 SEQUENCE AND SPECIAL CONDITIONS

- A. After the Notice to Proceed has been issued, the Contractor may begin work on items that can be done offsite, including procurement of materials and services. These include submittal preparation, and purchase of materials delivered and stored off the construction site. The Contractor is responsible for any material loss or damage.
- B. Prebid Conference. A prebid conference will be held to afford all bidders an opportunity to request information or interpretations of the drawings and specifications and to visit the site. The time of this meeting and inspection of the construction site is provided in the Notice to Bidders.

- C. At least two weeks prior to the start of construction, Contractor shall contact Underground Service Alert (USA) North at 811 for utility mark outs and pothole all existing utilities that are in the vicinity of the work. Contractor shall survey the horizontal and vertical location to determine the position and elevation of each utility exposed by Contractor's potholing. Contractor shall provide a copy of the survey with locations and elevations to the Engineer one week prior to the start of construction. Notify the Engineer if any differences are noted and if there are any conflicts anticipated.
- D. Contractor shall proceed with construction in a manner that limits the inconvenience to traffic and to the property owners adjacent to the construction area.
- E. All costs of construction staging, phasing, or sequencing shall be included in the Contractor's bid. No additional compensation will be made therefore.

1.4 CONTRACTOR USE OF SITE AND PREMISES

Limit use of site and premises to allow:

- A. Owner occupancy. The Contractor must coordinate any utility shutdowns or cut-overs with the City or other utility owners.
- B. Work by other contractors.
- C. The Contractor shall cooperate fully with the City to provide continued access. The Contractor's failure to do so shall not constitute the basis for delay claims by the Contractor.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall receive, unload, store in a secure place, and deliver from storage to the site all materials and equipment required for the performance of the work. The storage facilities and methods of storing shall be designed to keep such materials and equipment in a new condition, free from deterioration and protected from damage by weather or construction activities. Such facilities and methods are subject to the Engineer's approval and the Engineer shall have the right to inspect all storage facilities and stored materials and equipment at reasonable times. Materials and equipment subject to degradation by outside exposure or the elements, such as mechanical equipment, building insulation, ornamental metal fabrications, gypsum board or case work, shall be suitably stored by Contractor in an indoor weather tight enclosure provided by the Contractor. Contractor shall keep complete and accurate records of all materials and equipment received, stored, and delivered for use in the work. Such records shall be made available for inspection by the Engineer.

1.6 ARCHAEOLOGICAL AND HISTORICAL DISCOVERIES

- A. The Contractor shall immediately stop work if paleontological, archaeological or historical remains (including burials or skeletal material) are encountered during performance of this contract. The Contractor shall promptly notify the designated Inspector or the Engineer (if the Inspector is absent or one was not designated for this contract).
- B. After receiving such notification, the Engineer will contact an Archaeologist so that the provisions of 36 CFR 800.7 (Resources Discovered During Construction) and other relevant laws are followed. Work will cease in the immediate vicinity until permitted by written order from the Engineer. The Contractor may proceed with work in other areas as approved by the Archaeologist.

1.7 DRAWINGS

- A. Contractor shall use approved drawings titled "Parquet Street Water and Sewer Replacement and Slurry Seal Project". Any questions shall be brought to the attention of the Engineer. Any revisions or clarifications to the drawings will be issued in writing.

1.8 COORDINATION OF DOCUMENTS GOVERNING THE WORK

- A. The standard City forms, specifications, associated plans, solicitation provisions and contract clauses, made a part of the contract are essential parts thereof and the requirements in one are as binding as though contained in all. They are intended to be mutually supplementary to describe and provide for a complete work.
- B. All discrepancies in the Drawings shall be brought to the attention of the Engineer for resolution. Blueprints shall not be scaled to obtain missing or conflicting dimensions. The Contractor shall keep a check on dimensions and details as the work progresses and any errors or discrepancies discovered shall be promptly reported to the Engineer.
- C. In cases of conflict between plans, specifications, contract provisions, supplemental agreements and provisions, the provisions of contract shall govern. In all cases of dispute in respect to such conflict or as to what part or parts of the specifications apply to any given parts of the Work, decisions shall be made by the Engineer.
- D. All work related to the public water system shall be performed in accordance with the City of Santa Rosa Water Distribution System Construction Standard Specifications (Section 132). Any reference in the Standard Specifications to the City of Santa Rosa, or City of Santa Rosa personnel shall be replaced with the City of Sebastopol Public Works Department.
- E. All work related to the public sanitary sewer system shall be performed in accordance with the City of Santa Rosa Sanitary Sewer System Construction Standard Specifications (Section 130). Any reference in the Standard Specifications to the City of Santa Rosa, or City of Santa Rosa personnel shall be replaced with the City of Sebastopol Public Works Department.

1.9 COPIES OF DRAWINGS AND SPECIFICATIONS

- A. Full size prints shall be used for construction. The Contractor will be furnished with electronic copies of the drawings and specifications and will be responsible for providing hard copies of the drawings and specifications they may require to carry on the work in a satisfactory manner.
- B. Contractor shall have plans, specifications and applicable standards at all times when working on site.

1.10 EXISTING UTILITIES AND OBSTRUCTIONS

- A. Unless otherwise permitted by the City, the Contractor shall conduct his operations in a manner that will permit continuous operation of all utilities. The locations of existing underground utilities and structures, as can be determined from record information, have been shown on the Drawings. The Contractor is responsible to contact local utilities agencies at least 72 hours (or with more advance notice if required by the utility company or local agency) before excavation so that utilities may be marked in the field and utility conflicts avoided. Locations of existing utilities as shown on the Plans are only approximate. The Engineer assumes no responsibility for the accuracy or completeness of said data, which is offered solely for the convenience of the Contractor.
- B. It shall be the responsibility of the Contractor to verify the exact location of all utilities. This verification shall be done far enough ahead of excavation to ensure that the excavations can be located as shown and that the planned line and grade will clear any obstructions. Prior to the start of construction, the locations of crossings of existing utilities shall be exposed to verify that planned line and grade are adequate to provide minimum clearance.

- C. The Contractor shall relocate any utility conflicting with line and grade of the new utilities and facilities. Contractor shall prepare a plan for relocation of any utility which must be reviewed and approved by the Engineer prior to commencement of the work. Disruption of utility services shall be kept to a maximum of 2 hours total for any one service.
- D. Any changes required in line or grade of the new facilities, due to interferences with existing utilities or other obstructions, shall be performed by the Contractor and shall have prior approval of the Engineer. If the Contractor fails to adequately verify the locations of utilities or tie-ins, and such failure necessitates additional fittings and /or the removal of previously laid pipe, to adjust the line or grade, then the cost of such changes shall be borne entirely by the Contractor.

1.11 RESTORATION OF EXISTING IMPROVEMENTS

- A. Existing paving, curbs, gutters, sidewalks, utilities, landscaping, irrigation systems, planting or other improvements removed, damaged or disturbed due to the installation of new work and appurtenances shall be replaced in kind to the satisfaction of the Engineer at no additional expense to the City.

1.12 PRE-CONSTRUCTION CONFERENCE

- A. Refer to Section 01 30 00, "Administrative Requirements" for required attendees. Scheduling and location of the Pre-Construction Conference shall be confirmed with the City and the Engineer at least 14 days prior to the meeting, and no more than 10 days after the Notice to Proceed.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 29 00

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SCOPE

- A. Payment for the various items of the Bid Sheets, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of work as specified and shown on the Drawings, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the California Division of Industrial Safety. No separate payment will be made for any item that is not specifically set forth in the Schedule Bid Prices, and all costs therefore shall be included in the prices named in the Schedule of Bid Prices for the various appurtenant items of work.

1.2 WORK INCLUDED UNDER ALL BID ITEMS

- A. For all bid item work, Contractor's responsibilities shall conform to the provisions of Section 7 – "Legal Relations and Responsibility" of the State Standard Specifications, except as modified herein, in the Special Provisions, or in the Detailed Project Specifications. Additionally, Contractor shall ensure each of the following is included as part of the work under each bid item:
1. The safety of personnel, subcontractor's personnel, and the public. Safety measures shall include, but are not limited to, confined space entry, abrasive blasting, fall protection, electrical safety and warning signs as may be necessary. Engineer may direct Contractor to erect any safety feature as may be necessary in his opinion.
 2. Make available all work for inspection and/or testing by the Engineer.
 3. Clear, prune, and/or remove from the site of work all items that might interfere with contract work, including landscaping, sidewalks, curbs and gutters, retaining structures, and AC paving. Also remove existing piping, fittings, valves, boxes and debris as may be necessary to complete work.
 4. Restore all surfaces to their original, existing condition as nearly as possible including landscaping, sidewalks, street and driveway pavement, and curbs and gutters. All materials for restoration work shall be furnished by contractor.
 5. Protection of all trees and their roots.
 6. Proper removal and disposal of existing abandoned utilities or other subsurface structures as required to complete construction of the work.
 7. Proper restraint of existing facilities. Temporary restraints may be necessary to prevent facilities from being damaged. Damage to existing facilities that occurs due to improper restraint shall be repaired by Contractor at his own expense
 8. Cost of any water used on the project.
 9. Disposal of all excess or waste materials.
 10. Cleanup and sweeping of the project site.
 11. Quality control. The Contractor is responsible for providing independent third-party quality control for all on-site phases of the project.
 12. Provide advance notice of road or lane closures.
 13. Noise and sound control.
 14. Submittals for the project.
 15. As-built drawings. No portion of the work shall be deemed complete unless reflected on the as-built drawings. Contractor shall always maintain an active set of as-built drawings on site. At the completion of work, the Contractor shall provide as-built drawings to the City as a record of work completed.

1.3 BID SCHEDULE

- A. All pay line items will be paid for at the unit prices named in the Schedule of Bid Prices for the respective items of work. The quantities of work or material stated as unit price items on the Schedule of Bid Prices are supplied only to give an indication of the general scope of the Work.
- B. Only items of work of value to the Owner shall be included in the list. An item for cleanup shall be listed in the breakdown in the amount of at least 1 percent of the total schedule. If cleanup proceeds as the job progresses, then partial payments of this amount will be made accordingly. An item for fulfilling the submittal requirements of Section 01 33 00, "Submittals" shall be listed in the breakdown in the amount of at least 1 percent of the total schedule. Partial payments of this amount will be made as the requirements are met.
- C. All bid items for underground pipelines and appurtenances shall include, but not be limited to: initial and final saw cutting, excavation and disposal of trench section materials including pavements, soils, and preservation of existing items, pipe bedding and backfill, pipe, joints, and other fittings as required, tracer wire, installation above or below existing utilities, supporting exposed utilities and pipes, repair or replacement of damaged existing utilities, handling and disposal of asbestos cement pipe, handling and disposal of lead service lines, trench plating, control of grades, survey construction staking, protection of trees and roots, aggregate base, temporary trench paving and maintenance, adjusting new and existing utility rims and covers to finish grade, testing, disinfection, permanent pavement striping and markings, pavement markers, public outreach and all other related work as described in the Contract Documents. Length of new pipelines is measured horizontally inclusive of fittings and manholes, although valves are covered under separate bid items.

1.4 LUMP SUM ITEMS

Submit a Schedule of Values for the major components of the various other lump sum bid items. Overhead and profit shall not be shown as a separate item and each line item shall include pro-rated amounts for the Contractor's costs, overhead, profit, temporary facilities, and other expenses in connection with the item of work. The total of all items listed in the schedule shall be equal to each lump sum bid item contract amounts. The items included in each Schedule of Values shall include the major Work components of the bid item.

The Engineer shall review the preliminary Schedule of Values and make any adjustments in the listing of components of the bid item and associated value allocations if, in the opinion of the Engineer, these are necessary to establish fair and reasonable allocation of values for the Work components. Front end loading will not be permitted. The Engineer may require reallocation of major Work components from items in the above listing if in the opinion of the Engineer such reallocation is necessary. This review and any necessary revisions shall be completed within fifteen (15) days from the date of the Notice of Proceed.

1.5 INCREASE OR DECREASE IN BID ITEMS

- A. In the event of an increase or a decrease in the amount of the Engineer's Estimated quantities, such increase or decrease shall not be considered an alteration in excess of the 25 percent of the contract amount of such items under provisions of Section 4-1.05A of the State Standard Specifications and no adjustment of the contract unit price will be made by reason of such increase or decrease. Work items may be adjusted based on available funding.

PART 2 - PRODUCTS

2.1 WATER POLLUTION CONTROL (Bid Item No. 1)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing, installing, and maintaining all labor, materials, tools, permits, permit fees, and equipment required for preparation, placement, implementation and maintenance of temporary erosion and sediment control measures.
- B. The first payment for Water Pollution Control shall be no more than twenty-five percent (25%) of the bid item amount. The remainder of the bid item amount shall be divided evenly among the entire schedule and will be paid in monthly payments so long as the Contractor continues to properly implement the approved plan.
- C. Payment for Water Pollution Control will be made at the lump sum (LS) price, which price shall constitute full compensation for preparing and obtaining approval for a Water Pollution Control Plan (WPCP) and for implementation of the WPCP, including furnishing all labor, materials, tools, equipment and incidentals for performing all work involved in installing temporary erosion control measures within the limits shown on the Plans, approved WPCP and as specified in the Standard Specifications and these Technical Specifications, including but not limited to seed, hydroseed, fiber rolls, erosion control blankets, covers, gravel bags, filter bags, hydraulic mulch, tacked straw, top soil, fine grading, cleaning and removing sediment deposits inside existing storm drains and drainage ditches, and no additional allowances will be made therefor.

2.2 SHORING AND TRENCH SAFETY (Bid Item No. 2)

- A. Full compensation for Shoring and Trench Safety shall be paid for at the contract lump sum (LS) price, which price shall include full compensation for furnishing all labor, materials, tools and equipment and doing all work involved in trench bracing, sheeting and shoring or equivalent method as needed to construct the project and the removal and disposal of all such temporary sheeting, shoring, ground improvements, and bracing complete, as required under the provisions of any permits, and in accordance with the requirements of OSHA and the Construction Safety Orders of the State of California, pursuant to the provisions of the California Labor Code Sections 6700-6708, as specified herein, and no additional allowance will be made therefor.

2.3 TEMPORARY TRAFFIC CONTROL (Bid Item No. 3)

- A. Measurement for payment for this bid item will be based upon, but not limited to, all work required for Temporary Traffic Control under Section 01 50 00, "Construction Facilities and Temporary Controls" and as otherwise required in these Contract Documents, permits, construction area signs, temporary striping and markings, installing and maintaining all measures throughout the project limits, inclusive of staging areas, and advance of the project limits to temporarily control, detour, or stage traffic during construction and all other related work per the Contract Documents.
- B. The first payment for traffic control shall be reflective of actual costs to mobilize traffic control to the area, and no more than fifty percent (50%) of the bid item amount. The remainder of the bid item amount shall be divided evenly among the entire schedule and will be paid in monthly payments so long as the Contractor continues to properly implement the approved plan. Active traffic control is anticipated to be required for only the on-site installation and construction portion of the project rather than for the entire duration of the project.
- C. Payment for Temporary Traffic Control will be made at the lump sum (LS) price, which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these specifications, and no additional allowances will be made therefor.

2.4 UTILITY CLEARANCES (Bid Item No. 4)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing all labor, materials, tools, equipment and other incidentals necessary to pothole and verify the

location of existing utilities that cross or are within the excavation for the installation of the sanitary sewer and water main, water services, service laterals and manholes. Work shall include permitting, potholing, backfilling, surface restoration, reporting, and all other related work per the Contract Documents. A successful pothole is defined as one in which the intended utility has been located. Pothole depths and subsurface conditions and materials will vary, and no additional compensation will be made for deep potholes or multiple excavations to locate utilities horizontally. Utility Clearances bid item includes all utility excavations to comply with California Government Code Section 4216. No additional compensation will be given to Contractor for the additional road restoration.

- B. Payment for the utility clearances will be made at the lump sum (LS) price, which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the Standard Specifications and these special provisions, and no additional allowances will be made therefor. The Contractor is responsible for providing a bid reflective of the number of potholes required to positively identify all utilities. Additional payment will not be available for potholing efforts beyond the estimated lump sum.

2.5 UTILITY CONFLICT RESOLUTION (Bid Item No. 5)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing all labor, materials, tools, equipment and other incidentals necessary to move, relocate or mitigate utility conflicts, conflicts with manmade buried objects or other unforeseen items that may be encountered during construction or during potholing investigations.
- B. Utility Conflict Resolution shall be paid for on a Force Account (FA) basis up to the contract allowance price and shall include full compensation for furnishing all labor, materials, permits, tools and equipment, and for doing all the work involved as required to complete the work, and as directed by the Engineer, and no additional allowance shall be made therefor.

2.6 ABANDON OR REMOVE SANITARY SEWER SYSTEM COMPONENTS (Bid Item No. 6)

- A. Measurement for payment for this bid item will be based upon, but not limited to, all labor, materials, tools and equipment for the abandonment and/or removal of sanitary sewer system components such as pipe, manholes and appurtenances, including but not limited to excavation, backfill, compaction, cleaning of removed materials as needed, and hauling and disposal of removed materials as required per the Contract Documents.
- B. Payment for abandon or remove sanitary sewer system components will be made at the lump sum (LS) price, which price shall constitute full compensation of all such work as required per the Contract Documents, as specified in the Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.7 REMOVE CURB AND GUTTER (Bid Item No. 7)

- A. Measurement for payment for this bid item will be based upon, but not limited to, all labor, materials, tools and equipment including a sawcut with a clean edge, the removal of curb, gutter, and dowel rebar, including proper disposal, salvage, or recycling of the associated materials, and site restoration, as required per the Contract Documents. The removal will be to the nearest score mark or construction joint.
- B. Payment for remove curb and gutter will be made at the unit bid price per linear foot (LF), which price shall constitute full compensation of all such work as required per the Contract Documents, as specified in the Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.8 REMOVE SIDEWALK (Bid Item No. 8)

- A. Measurement for payment for this bid item will be based upon, but not limited to, all labor, materials, tools and equipment including a sawcut at a joint with a clean edge, the removal of sidewalk and dowel rebar, including proper disposal, salvage, or recycling of the associated materials, and site restoration, as required per the Contract Documents. The removal will be to the nearest score mark or construction joint.
- B. Payment for remove sidewalk will be made at the unit bid price per square foot (SF), which price shall constitute full compensation of all such work as required per the Contract Documents, as specified in the Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.9 6-INCH WATER MAIN (Bid Item No. 9)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing and installing all labor, materials, tools, and equipment required to install 6-inch water main and appurtenances as shown on the Drawings, as based upon installing the pipeline per paragraph 1.3.C of this section, and as required per the Contract Documents.
- B. Payment for 6" Water Main will be made at the unit bid price per linear foot (LF), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these specifications, and no additional allowances will be made

2.10 6-INCH GATE VALVE (Bid Item No. 10)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing and installing all labor, materials, tools, and equipment required to install 6-inch gate valves and appurtenances as shown on the Drawings, as based upon installing the pipeline per paragraph 1.3 C of this section, and as required per the Contract Documents.
- B. Payment for 6" Gate Valve will be made at the unit bid price per each (EA), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these specifications, and no additional allowances will be made

2.11 ABANDON WATER MAIN (Bid Item No. 11)

- A. Measurement for payment for this bid item will be based upon, but not limited to, all labor, materials, tools and equipment for the abandonment of existing water pipelines (mains and services), and appurtenances required in performing the work required per the Contract Documents. The work shall include submittal to the City of an abandonment plan, obtain approval from the City, cutting, capping and filling the mains and pipelines, and appurtenances, removal of all abandoned gate valves, and handling, hauling, and disposal of excess and/or removed concrete materials as required, and as based upon installing the pipeline per paragraph 1.3 C of this section.
- B. Payment for Abandon Water Main will be made at the unit bid price per lump sum (LS), which price shall constitute full compensation of all such work as required per the Contract Documents, as specified in the Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.12 3/4-INCH SINGLE WATER SERVICE (Bid Item No. 12)

- A. Measurement for payment for this bid item will be based upon, but not limited to, completion of all necessary work including furnishing, installing and maintaining all necessary equipment, labor, materials, and tools required for replacing the existing 3/4" water services with new services between the new water mains and connecting to the existing water meters per City Standards, returning to match grade and existing conditions to nearest sidewalk score mark,

and all other related work per the Contract Documents, applicable City Standards, as based upon installing the pipeline per paragraph 1.3 C of this section, and as shown in the Plans. Existing services locations shown on the plans are approximate. It is the Contractor's responsibility to field locate and confirm service locations. It is the Contractor's responsibility to locate and confirm service locations and elevations of tie-ins.

- B. Payment for 3/4" Water Service will be made at the unit bid price per each (EA), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.13 3/4-INCH DUAL WATER SERVICE (Bid Item No. 13)

- A. Measurement for payment for this bid item will be based upon, but not limited to, completion of all necessary work including furnishing, installing and maintaining all necessary equipment, labor, materials, and tools required for replacing the existing 3/4" water services with new dual water service between the new water mains and connecting to the existing water meters per City Standards, returning to match grade and existing conditions to nearest sidewalk score mark, and all other related work per the Contract Documents, applicable City Standards, as based upon installing the pipeline per paragraph 1.3 C of this section, and as shown in the Plans. Existing services locations shown on the plans are approximate. It is the Contractor's responsibility to field locate and confirm service locations. It is the Contractor's responsibility to locate and confirm service locations and elevations of tie-ins.
- B. Payment for Dual Water Service will be made at the unit bid price per each (EA), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.14 FIRE HYDRANT AND LATERAL ASSEMBLY (Bid Item No. 14)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing and installing all labor, materials, tools, and equipment required to install fire hydrant, lateral assembly and appurtenances as shown on the Drawings, including but not limited to: excavation and disposal of excavated materials; removal of rock as required; dewatering and disposal of trench groundwater; contamination awareness; tapping saddle or tee; valve; installing salvaged fire hydrant or new fire hydrant, lateral assembly; fittings as required; restrained joints, thrust blocking and harnesses as required; hot tap preparation if needed, connection to saddle or tee; valve box to grade; concrete pad; placing and compacting all required bedding and backfill including control density fill if required; trench plates as needed; testing and chlorination; temporary trench paving; blue reflective pavement marker; requirements as based upon installing the pipeline per paragraph 1.3 C of this section, and as required per the Contract Documents.
- B. Payment for Fire Hydrant and Lateral Assembly will be made at the unit bid price per each (EA), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these specifications, and no additional allowances will be made.

2.15 8-INCH SANITARY SEWER PIPE (Bid Item No. 15)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing and installing all labor, materials, tools, and equipment required to construct sanitary sewer pipe 8-inch and appurtenances as shown on the Drawings, as based upon installing the pipeline per paragraph 1.3 C of this section, and as required per the Contract Documents.

- B. Payment for sanitary sewer pipe 8-inch will be made at the unit bid price per linear foot (LF), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these special provisions, and no additional allowances will be made therefor. Work includes removal of existing abandoned utilities to facilitate completion.

2.16 6-INCH SANITARY SEWER PIPE (Bid Item No. 16)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing and installing all labor, materials, tools, and equipment required to construct sanitary sewer pipe 6-inch and appurtenances as shown on the Drawings, as based upon installing the pipeline per paragraph 1.3 C of this section, and as required per the Contract Documents.
- B. Payment for sanitary sewer pipe 6-inch will be made at the unit bid price per linear foot (LF), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these special provisions, and no additional allowances will be made therefor. Work includes removal of existing abandoned utilities to facilitate completion.

2.17 48-INCH SANITARY SEWER MANHOLE (Bid Item No. 17)

- A. Measurement for payment for this bid item will be based upon but not limited to, installing complete a new manhole including, but not limited to, earthwork, demolition and disposal, complete concrete manhole base, sections, top slab, HDPE adjustment rings, couplings, boots, grout, bench, cast iron frame and cover, plugging and abandoning existing lines as indicated, pipe stub-outs, backfill, temporary and final pavement, and all labor, materials, tools and equipment in performing the work required per the Contract Documents. Adjustment of the new manholes to final grade is also included in this pay item.
- B. The Contractor shall provide shop drawings, engineering calculations, and other supporting documentation as necessary for each manhole for review and approval by the Engineer prior to acceptance of the manhole structure. Submittal information shall provide verification that the horizontal and vertical alignment for each manhole and associated pipe stub-outs are consistent with the line and grade of the new trunk sewer provided on the plans and confirmed in the field by the Contractor during construction.
- C. Payment for a precast sewer manhole– 48-inch will be made at the unit bid price per each (EA), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.18 6-INCH SANITARY SEWER LATERAL AND CLEANOUT (Bid Item No. 18)

- A. Measurement for payment for this bid item will be based upon, but not limited to, completion of all necessary work including furnishing, installing and maintaining all necessary equipment, labor, materials, and tools required for replacing the existing 4" sewer laterals with new 6" PVC lateral between new SS mains and 18" beyond the edge of sidewalk, installing a new sewer cleanout in the sidewalk per City Standards, returning to match grade and existing conditions to nearest sidewalk score mark, and all other related work per the Contract Documents, applicable City Standards, and as shown in the Plans and as based upon installing the pipeline per paragraph 1.3 C of this section. Existing lateral locations shown on the plans are approximate. It is the Contractor's responsibility to field locate and confirm lateral locations. It is the Contractor's responsibility to locate and confirm lateral locations and elevations of tie-ins on the property side of the cleanouts.

- B. Payment for lateral service line replacement and cleanout will be made at the unit bid price per each (EA), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.19 SLURRY SEAL SURFACE RESTORATION (Bid Item No. 19)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing all necessary equipment, labor, materials, tools, equipment and other incidentals necessary for the complete work to slurry seal Parquet Street and portion of Calder Ave., and all labor, materials, tools and equipment in performing the work required per the Contract Documents and Plans. Quantity for sealing will be measured from submitted plant delivery tags.
- B. Payment for slurry seal surface restoration will be made at the unit bid price per square foot (SF), which price shall constitute full compensation of all such work as required per the Contract Documents.
- C. Payment for slurry seal surface restoration shall be paid for at the contract unit price per square foot (SF), which price shall include full compensation for furnishing all plant, labor, materials, tools, equipment, water pollution prevention program, striping removal, pavement marking removal and pavement markers removal, with exception to yellow thermoplastic or paint, crack sealing, surface cleaning, protection of existing utility facilities, placing of slurry seal, protecting the slurry seal, and other incidentals for completing the work required for the installation of the slurry seal and all other related work per the Contract Documents, complete in place to the limits as shown on the Figures and as contained herein.

2.20 PERMANENT TRENCH RESTORATION (Bid Item No. 20)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing all necessary equipment, labor, materials, tools, equipment and other incidentals necessary for the complete work to pave the trenched areas including temporary paving, aggregate base material, all asphalt concrete (AC) and all subsequent and final lifts, asphalt concrete grinding, and all labor, materials, tools and equipment in performing the work required per the Contract Documents. Quantity for paving will be measured from submitted hot mix asphalt batch plant delivery tags.
- B. The quantity to be paid will be the actual tonnage of asphalt placed in the final surface.
- C. Payment for permanent trench restoration will be made at the unit bid price per ton (TN), which price shall constitute full compensation of all such work as required per the Contract Documents.

2.21 CURB AND GUTTER (Bid Item No. 21)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing and installing all labor, materials, tools, and equipment, and doing all the work involved in constructing curb and gutter, including curing materials, forming and constructing curb openings for driveways, removing discoloring, placing expansion joint filler, rebar, constructing weakened plane joints, excavating, backfilling with Class 2 AB, and compaction, as specified in the City Standards, the Standard Specifications, as shown on the Drawings, and as required per the Contract Documents.
- B. Payment for curb and gutter will be made at the unit bid price per linear foot (LF), which price shall constitute full compensation for the completion of all such work as required per the

Contract Documents, as specified in the State Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.22 SIDEWALK (Bid Item No. 22)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing and installing all labor, materials, tools, and equipment, and doing all the work involved in constructing concrete sidewalk, including curing materials, forming, removing discoloring, placing expansion joint filler, rebar, constructing weakened plane joints, excavating, backfilling with Class 2 AB, and compaction, as specified in the City Standards, the Standard Specifications, as shown on the Drawings, and as required per the Contract Documents.
- B. Payment for sidewalk will be made at the unit bid price per square foot (SF), which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the State Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.23 LANDSCAPING RESTORATION (Bid Item No. 23)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing and installing all labor, materials, tools, and equipment, and doing all the work involved in returning all disturbed landscaped areas to their original condition, including replacing landscape cobbles, concrete, shrubs, trees, fencing, sod, and related items as necessary, removing discoloring and all USA markings created within the project limits, and in relation to the project, excavating, backfilling with topsoil, and compaction, as specified in the City Standards, the State Standard Specifications, as shown on the Drawings, and as required per the Contract Documents. Contractor will be responsible for protecting existing tree(s) in place or replacement in kind (species and size) upon completion of all trenching and related works.
- B. Payment for landscape restoration will be made at the lump sum (LS) price, which price shall constitute full compensation for the completion of all such work as required per the Contract Documents, as specified in the Standard Specifications and these special provisions, and no additional allowances will be made therefor.

2.24 CITY MONUMENT (Bid Item No. 24)

- A. Measurement for payment for this bid item will be based upon, but not limited to, furnishing all necessary equipment, labor, materials, tools, equipment, excavation, backfill, concrete, monument casing, surveyor marker disk, monument box, asphalt or concrete pavement and mortar, hauling and disposal of materials, surveying, and filing of records for the completion of resetting survey monuments, and all other incidentals necessary for the complete work to remove and replace City Monuments, per the Contract Documents and Plans.
- B. Payment for City Monuments will be made at the unit bid price per each (EA), which price shall constitute full compensation of all such work as required per the Contract Documents.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 2 GENERAL

1.1 SUBMITTALS

- A. Statement of Qualification (SOQ) for land surveyor or professional engineers employed by the Contractor in the work.
- B. Photographs and other records of examination, as required herein.

1.2 OTHER WORK

- A. Coordination of Contractor's Work with Others: Refer to Section 01 10 00, "Summary of Work," for coordination of Contractor's Work with City, the Engineer, other Contractors, or other parties.

1.3 UTILITIES

Notify applicable utility providers:

- A. Prior to commencing Work,
- B. If damage occurs, or
- C. If conflicts or emergencies arise during Work.
- D. Prior to connecting to any existing structure or pipeline carrying wastewater, water, gas, storm water, or other material, the Contractor shall prepare and have approved by the Engineer his detailed plan on how the connection may be made without causing an uncontrolled discharge resulting in contamination of the soil or groundwater. By reviewing and approving the plan, the City does not accept responsibility for the adequacy thereof nor for any damages to public or private property caused by the Contractor.

1.4 PROJECT MEETINGS

- A. General:
 - 1. Schedule meetings throughout the progress of the Work. City or its representative will prepare meeting agenda and distribute with written notice of each meeting, record minutes to include significant proceedings and decisions, and reproduce and distribute copies of minutes within one day after each meeting to participants and parties affected by meeting decisions.
 - 2. Representatives of City, Contractor, and Subcontractors shall attend meetings, as needed.
- B. Preconstruction Conference:
 - 1. A preconstruction conference attended by the Contractor, the Engineer, City staff and others as appropriate will be held to discuss the WORK in accordance with the applicable procedures specified in Section 01 10 00, "Summary of Work." All subcontractors are required to be in attendance when safety issues and safety training requirements are presented.
 - 2. Attendees may include but not be limited to:
 - a. Engineer and other City representatives.
 - b. Contractor's resident superintendent.
 - c. Contractor's quality control representative.

- d. Contractor's safety program representative.
 - e. Subcontractors' representatives whom Contractor may desire or Engineer may request to attend.
 - f. Engineer's representatives.
 - g. Utility agencies' representatives.
 - h. Others as appropriate.
- C. Progress Meetings:
- 1. Schedule weekly progress meetings at the site. Conduct weekly meeting to review Work progress, progress schedule, submittal submissions schedule, Application for Payment, contract modifications, and other matters needing discussion and resolution.
 - 2. Attendees will include:
 - a. Engineer and other City representatives.
 - b. Contractor, and appropriate Subcontractors and Suppliers.
 - c. Engineer's representative(s).
 - d. Others as appropriate.
- D. Quality Control and Coordination Meeting(s):
- 1. Schedule on a regular basis and as necessary to review test and inspection reports, and other matters relating to quality control of Work and work of other contractors.
 - 2. Attendees will include Engineer and other City Representatives, Contractor, Contractor's designated quality control representative, selected Subcontractors and Suppliers, and Engineer's representatives.
- E. Pre-installation Meetings:
- 1. When required in individual specification sections, convene at site prior to commencing Work of that section.
 - 2. Require attendance of entities directly affecting, or affected by, Work of that section.
 - 3. Notify the Engineer 5 days in advance of meeting date.
 - 4. Provide suggested agenda to the Engineer to include reviewing conditions of installation, preparation and installation or application procedures, and coordination with related Work and work of others.
- F. Other Meetings: In accordance with Contract Documents and as may be required by City and Engineer.

1.5 SEQUENCE OF WORK

- A. Include the Milestones and sequences of Work specified herein as a part of the progress schedule required under Section 01 32 16, "Construction Progress Schedules."
- B. Construct Work in stages to allow for City continuous occupancy during construction. Coordinate construction schedule and operation with the City.
- C. Be responsible for temporary connections and structures required to maintain City operations. Sequences other than those specified will be considered by Engineer, provided they afford equivalent continuity of operations.
- D. Perform Work continuously during critical connections and changeovers, and as required to prevent interruption of City operations.
- E. Coordinate proposed Work with the Engineer and facility operations personnel before effecting unit shutdowns. Under no circumstances cease Work at the end of a normal working day if such actions may inadvertently cause a cessation of any facility operating process, in which case, remain onsite until necessary repairs are complete.
- F. Do not close lines, open switches, or take other action which would affect the operation of existing systems, except as specifically required by the Contract Documents and after approval

of the Engineer. Such actions will be considered by City and Engineer upon one week written notice to the Engineer. Contractor shall not operate any City water valves.

1.6 ADJACENT FACILITIES AND PROPERTIES

A. Examination:

1. After Effective Date of the Agreement and before Work at site is started, Contractor, Engineer, and affected property owners and utility owners shall make thorough examination of pre-existing conditions including existing buildings, structures, pipelines, and other improvements in vicinity of Work, as applicable, which might be damaged by construction operations.
2. Contractor shall take two sets of photographs and videotape pre-existing conditions prior to the start of the work and submit to the Engineer. One set of photographs and videotape shall be given to the Engineer. Periodic reexamination shall be jointly performed to include, but shall not be limited to, cracks in structures, settlement, leakage, and similar conditions. Include public roads and improvements to adjacent private property as part of preexisting condition documentation.
- 3.

B. Documentation:

1. Submit two copies of photographs, videotapes and other records documenting examination for Engineer's approval.
2. These observations and photographs and videotapes are intended for use as indisputable evidence in ascertaining whether and to what extent damage occurred as a result of Contractor's operations, and are for protection of adjacent property owners, utility owners, Contractor, and City.

1.7 OWNER'S (City) OCCUPANCY

City will occupy the premises during the entire period of construction for the conduct of its normal operations. Cooperate with City in all construction operations to minimize conflict and to facilitate City usage.

1.8 SITE SECURITY

Contractor shall coordinate with the Engineer so site security is maintained at all times. Contractor shall take whatever measures are necessary to maintain site security, including the use of temporary fencing and gates if required. Contractor shall be completely responsible for the construction site security and for any vandalism or theft occurring thereto.

1.9 OWNER (City) FACILITIES

A. Operation and Shutdown of Existing Facilities:

1. Continuous occupancy of City facilities is of critical importance. Schedule and conduct activities to enable City access to existing facilities continuously, unless otherwise specified.
2. Conduct Work outside regular working hours on prior written consent of Engineer in accordance with Section 01 32 16, "Construction Progress Schedules," to meet Project schedule and avoid undesirable conditions.
3. Do not proceed with Work affecting a facility's operation without obtaining Engineer's advance approval of the need for and duration of such Work.
4. Contractor shall not operate any City water valves.

B. Damage to Existing Facilities

1. The Contractor shall be responsible for restoring, repairing, or replacing City facilities damaged by the Contractor, to the satisfaction of the City.

1.10 PHYSICAL CONDITIONS

- A. Exercise reasonable care to verify the location of existing subsurface structures and underground facilities, proceeding in accordance with Section 01 10 00, "Summary of Work" and of other applicable sections of the Specifications.
- B. Thoroughly check adjacent areas subject to excavation by visual examination (and by electronic metal and pipe detection equipment, as necessary) for indications of subsurface structures and underground facilities.
- C. Make exploratory excavations where existing underground facilities or structures may potentially conflict with proposed underground facilities or structures. Conduct exploratory excavations sufficiently ahead of construction to avoid possible delays to Contractor's Work.

1.11 REFERENCE POINTS AND SURVEYS

- A. Location and elevation of benchmarks are shown on the Survey Control Diagram contained in the Drawings.
- B. Dimensions for lines and elevations for grades of structures, appurtenances, and utilities are indicated on the Plans, together with other pertinent information required for laying out Work. If conditions vary from those indicated, Contractor shall notify the Engineer immediately.
- C. City and/or Engineer may perform checks to verify accuracy of Contractor's layout Work and that completed Work complies with the Contract Documents.
- D. Any existing survey points or other control markers not identified for replacement that are destroyed shall be replaced by a Land Surveyor licensed in the State of California and approved by City. Replacement shall be at the Contractor's expense.
- E. Contractor's Responsibilities:
 1. Provide additional survey and layout required, and construction staking as required.
 2. Locate and protect reference points prior to starting Work at site.
 3. Check and establish exact location of existing facilities prior to construction of new facilities and any connections thereto.
 4. In event of discrepancy in data provided by Engineer, request clarification before proceeding with Work.
 5. Preserve and leave undisturbed control staking.
 6. Re-establish reference points resulting from destruction by Contractor's operations.
 7. Retain professional land surveyor or civil engineer registered in **California** who shall perform or supervise engineering surveying necessary for additional construction staking and layout.
 8. Maintain complete accurate log of survey Work onsite as it progresses as a Record Document. Include in project as-builts. See Section 01 72 00, "Record Documents."
 9. Submit documentation, as requested.
 10. Provide competent employee(s), tools, stakes, and other equipment and materials as the Engineer may require to:
 - a. Check layout, survey, and measurement of Work.
 - b. Measure quantities for payment purposes.
 11. Cooperate with the Engineer so that checking and measuring may be accomplished with least interference to Contractor's operations.

1.12 PERMIT REQUIREMENTS

A. Notification

1. **The Contractor shall provide a contact name and mailing address for the purpose of notification in conformance with the approval or permit conditions. The Contractor shall provide the name(s), email addresses, and telephone numbers of representatives who can be reached at all times and who have the authority and responsibility to respond immediately to an emergency situation at the construction jobsite. Mailing addresses, email addresses, name and telephone numbers required for notification and emergency response shall be provided to the City Engineer.**
- B. The Contractor shall submit copies of all other permits and approvals from other government agencies with respect to the work. If a permit is not required from these agencies, the Contractor should provide copies of correspondence that indicates that a permit is not required.
- C. The above requirements shall be distributed to all Subcontractors working on the project site.

PART 3 PRODUCTS - Not Used

PART 4 EXECUTION - Not Used

END OF SECTION

SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

PART 5 GENERAL

1.13 DESCRIPTION

- A. **Summary:** The work of this section consists of project schedule requirements including preparation of a project schedule, schedule updates, schedule revisions and time impact analysis. The project schedule shall be based upon the Critical Path Method (CPM) for planning, scheduling and reporting progress of the Work.
- B. **Purpose:** The purpose of the project schedule is to ensure adequate planning, coordination, scheduling, and reporting during execution of the work by the Contractor. The project schedule will assist the Contractor and the Engineer in monitoring the progress of the work, evaluating proposed changes, and processing the Contractor's monthly progress payment.
- C. **Software:** The software shall be the latest version of Primavera Project Planner (P3), SureTrak Project Scheduler, Microsoft Project, or approved equal.
- D. **No work shall be done outside of the hours stated in the Contract Documents without written permission of the Engineer.**

1.14 SUBMITTALS

- A. **Project Schedule:** After contract award and before the Pre-Construction conference, submit one electronic copy and 2 paper copies of the proposed project schedule, and accompanying CPM Schedule Reports.
- B. **Project Schedule Updates:** **On or before the 7th day preceding the progress payment request date, submit estimates of the percent completion of each schedule activity and necessary supporting data. Provide two paper copies and one electronic copy.**
- C. **Project Schedule Revisions and Time Impact Analysis:** **Submit one electronic copy and two paper copies of a Time Impact Analysis. Each Time Impact Analysis shall include a Fragmentary Network (Fragnet) demonstrating how the Contractor proposes to incorporate a modification, change, delay, or Contractor request into the project schedule.**

1.15 PROJECT SCHEDULE

- A. **Schedule Development:**
 - 1. **The late finish date shown on the schedule shall be the same date as the last day of the contract period.**
 - 2. **The Contractor shall use the Precedence Diagram Method (PDM) with limited use of lead or lag durations between schedule activities. The Contractor's project schedule shall consist of procurement activities (including mobilization, submittal, and the fabrication and delivery of key and long-lead procurement items) and construction activities.**
 - 3. **The Contractor's project schedule shall consist of, but not be limited to, the following for each activity:**
 - a. ***Identify each and every activity number with numerical designations (maximum 5-digit). Numbering of activities shall be in increments of 10 digits.***
 - b. ***Concise description of the work represented by the activity (maximum 48 characters). Avoid the use of non-standard abbreviations. The work related to each activity shall be limited to one work trade.***

- c. *Activity duration in whole working days with a maximum duration of 5 work days each, unless otherwise approved by the Engineer, except for non-construction activities including mobilization, shop drawing and sample submittals, fabrication of materials, delivery of materials and equipment, and concrete curing.*
 - 4. In developing the project schedule, ensure that subcontractor work at all tiers, as well as the prime contractor's work, is included and coordinated in the project schedule.
 - 5. The project schedule as developed shall show the sequence and interdependence of activities required for complete performance of the work. Ensure all work sequences are logical and the project schedule shows a coordinated plan of the work.
 - 6. Proposed duration assigned to each activity shall be the Contractor's best estimate of time required to complete the activity considering the scope and resources planned for the activity.
 - 7. Consider seasonal weather conditions in planning and scheduling all work influenced by high or low ambient temperatures, wind and/or precipitation to ensure completion of all work within the contract time. Show anticipated weather conditions on project calendar.
- B. **Joint Review, Revision, and Acceptance:**
 - 1. Within seven calendar days of receipt of the Contractor's proposed project schedule, the Engineer and Contractor shall meet for joint review, correction, or adjustment of the proposed project schedule. Any areas which, in the opinion of the Engineer, conflict with timely completion of the project shall be subject to revision by the Contractor.
 - 2. In the event the Contractor fails to define any element of work, activity, or logic, and the Engineer review does not detect this omission or error, such omission or error, when discovered by the Contractor or Engineer, shall be corrected by the Contractor at the next monthly project schedule update and shall not affect the contract time.
 - 3. Within seven (7) calendar days after the joint review between the Contractor and Engineer, the Contractor shall revise and resubmit the project schedule in accordance with agreements reached during the joint review.
 - 4. Upon acceptance of the project schedule by the Engineer, the project schedule will be used to evaluate the Contractor's monthly applications for payment based upon information developed at the monthly project schedule update meeting.

1.16 PROJECT SCHEDULE UPDATES

- A. **General:** Update the project schedule on a bi-weekly basis throughout the entire contract time and until project substantial completion. The status date of each schedule update shall be the 7th day preceding the progress payment request date.
- B. **Procedure:** The Contractor shall meet with the Engineer each month at a project schedule update meeting to review actual progress made through the status date of the project schedule update, including dates activities were started and/or completed and the percentage of work completed on each activity started and/or completed.
- C. **Progress Payments:** The monthly updating of the project schedule shall be an integral part of the process upon which progress payments will be made under this contract. If the Contractor fails to provide schedule updates or revisions, then a portion of his monthly payment may be retained until such corrections have been made.

1.17 PROJECT SCHEDULE REVISIONS

- A. **Required Revisions:** If, as a result of the monthly schedule update, it appears the project schedule no longer represents the actual prosecution and progress of the work,

the Engineer will request, and the Contractor shall submit, a revision to the project schedule. The Contractor may also request reasonable revisions to the project schedule in the event the Contractor's planning for the work is revised. If the Contractor desires to make changes in the project schedule, the Contractor shall notify the Engineer in writing, stating the reason for the proposed revision. Accepted revisions will be incorporated into the project schedule at the next monthly schedule update.

- B. **Procedure:** If revision to the project schedule is contemplated, the Contractor or Engineer shall so advise the other in writing at least seven (7) calendar days prior to the next schedule update meeting, describing the revision and setting forth the reasons therefore. City-requested revisions to the project schedule will be presented in writing to the Contractor, who shall respond in writing within seven (7) calendar days.

1.18 TIME IMPACT ANALYSIS FOR CONTRACT MODIFICATIONS, CHANGES, DELAYS, AND CONTRACTOR REQUESTS

- A. **Requirements:** When contract modifications or changes are initiated, delays are experienced, or the Contractor desires to revise the project schedule, the Contractor shall submit to the Engineer a written time impact analysis illustrating the influence of each modification, change, delay, or Contractor request on the contract time.
- B. **Time Extensions:** Activity delays shall not automatically mean that an extension of the contract time is warranted or due the Contractor. It is possible that a modification, change, or delay will not affect existing critical path activities or cause non-critical activities to become critical. A modification, change, or delay may result in only absorbing a part of the available total float that may exist within an activity chain of the project schedule, thereby not causing any effect on the contract time. Time extensions will be granted in accordance with the terms of the contract.
- C. **Float:** Float is not for the exclusive use or benefit of either the Owner or the Contractor. Extension of the contract time will be granted only to the extent the equitable time adjustments to the activity or activities affected by the modification, change, or delay exceeds the total (positive or zero) float available on a particular activity.
- D. **Procedure:** Each time impact analysis shall be submitted within the time period stated in a request for proposal, or the time period designated under the clauses entitled Changes or Default. In cases where the Contractor does not submit a written request for extension of time and a time impact analysis within the designated time, it is mutually agreed that the particular modification, change, delay, or Contractor request does not require an extension of the contract time. Upon acceptance, the time impact analysis shall be incorporated into the project schedule at the next monthly schedule update.

PART 6 PRODUCTS - Not Used

PART 7 EXECUTION - Not Used

END OF SECTION

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SECTION 01 33 00

SUBMITTALS

PART 8 GENERAL

1.19 DESCRIPTION

- A. This Section specifies the general methods and requirements of submissions applicable to the following work-related submittals: Shop Drawings, Product Data, Samples, and Construction or Submittal Schedules. Detailed submittal requirements will be specified in the technical specification section.

1.20 SHOP DRAWINGS, PRODUCT DATA, SAMPLES

- A. Shop Drawings.
 - 1. Shop drawings, as specified in individual work Sections include, but are not necessarily limited to: custom-prepared data such as fabrication and erection/installation (working) drawings of concrete reinforcement, piping layout, scheduled information, special wiring diagrams, coordination drawings, individual system or equipment inspection and test reports including performance curves and certifications as applicable to the work.
 - 2. All shop and working drawings shall be prepared on standard size, 22-inch by 34-inch sheets, except those which are made by changing existing standard shop or working drawings.
 - 3. All shop drawings submitted by subcontractors for approval shall be sent directly to the Contractor for checking. The Contractor shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.
 - 4. The Contractor shall check all subcontractors' shop drawings regarding measurements, size of members, materials, and details to satisfy himself/herself that they conform to the intent of the Drawings and Specifications. Shop drawings found to be inaccurate or otherwise in error shall be returned to the subcontractors for correction before submission thereof.
 - 5. All details on shop drawings submitted for approval shall clearly show the relation of the various parts of main members and lines of the structure, and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the Drawings before being submitted for approval.
- B. Product Data: Product data as specified in individual Sections, includes, but is not necessarily limited to, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specifications and installation instructions, availability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications and recommended spare-parts listing, and product warranties, as applicable to the Work. Product data shall be submitted electronically to the maximum extent possible.
- C. Samples: Samples specified in individual Sections, includes, but is not necessarily limited to, physical examples of the work such as sections of manufactured or fabricated work, and units of work to be used by the Engineer for independent inspection and testing, as applicable to the Work.

1.21 EQUIPMENT, MATERIALS AND COMPONENTS

- A. All equipment, materials and components furnished by the Contractor shall be stock models for which parts are readily available and shall be products which shall have performed satisfactorily in an installation independent of the manufacturer's facilities for a consecutive period of not less than two (2) years as of the date of the bid opening.
- B. Any item which the Contractor proposes to furnish as equal to any item specified shall be submitted for approval following the instructions below.

1.22 REQUIRED SUBMITTALS

- A. Construction Schedule. The Contractor shall furnish the Engineer with the proposed work schedule as outlined in Section 3-1.08 of the General Conditions and prior to the preconstruction meeting. The Contractor shall also advise the Engineer of revisions of the schedule as modifications may become necessary, or as may be required after commencement of work. Such outlines and revisions shall be in sufficient detail to enable the Engineer to judge as to the adequacy of the Contractor's operations and to anticipate such conditions as may tend to impair or retard the progress and completion of the work.
- B. Payment Schedule. See Section 9-1.02 of the General Conditions.
- C. Submittals are required on the items as listed individually in each section of the Technical Specifications (Divisions 2 through 49). The description of submittal data required is contained in the individual section.
- D. As-built drawings: One (1) complete set of (22" x 34") blueline prints of the Contract Drawings will be furnished to the Contractor for use in preparing as-built drawings. The Contractor shall keep this set of prints on the job site and accurately record (redline) all changes to contract drawings including Contract Modifications, as indicated in Section 01 72 00 Record Documents. Submit as-built redline prints to the Engineer at the completion of the job.
- E. The Contractor shall furnish to the Engineer three (3) complete bound sets of operation and maintenance instructions for those items as listed individually in each section of the Technical Specifications (Divisions 2 through 33). Each set shall contain manufacturer's specifications, operation and performance and dimensional data. Sets shall be neatly segregated, indexed and labeled.

1.23 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor shall review shop drawings, product data and samples, including those by Subcontractors, prior to submission to determine and verify the following:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data.
 - 4. Conformance with the Specifications.
- B. If a shop drawing shows any deviation from the requirements of the Contract Documents, the Contractor shall provide a description of the deviations with the reason and justification in a letter attached to the submittal.
- C. The review and approval of shop drawings, samples or product data by the Engineer shall not relieve the Contractor from his responsibility with regard to the fulfillment of the Contract.
- D. No portion of the work requiring a shop drawing, sample, or product data shall be started nor shall any materials be fabricated or installed prior to the approval or qualified approval of such item. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to approved shop drawings and data shall be at the Contractor's risk. The City will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.

- E. Project work, material, fabrication, and installation shall conform with approved shop drawings, applicable samples, and product data.

1.24 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with approved schedule.
- B. Deliver submittals electronically in PDF format.
- C. Submit related products and materials under a single submittal cover for review.
- D. All submittals and Requests for Information (RFI) shall be made sufficiently in advance of construction to provide 14 calendar days for review by the Engineer.
- E. **A single submittal for each item shall be provided by the Contractor for all items contained within a single specification. Submit all product data, shop drawings, laboratory test results, material source information, and certificates of compliance listed in each specification section under a single submittal cover for review. Incomplete submittals will not be reviewed.**
- F. Number of submittals required. It is the intent of the City to maximize the use of electronic submittals. Submit one electronic copy to the Engineer. If an electronic submittal is not practical submit per the following:
 - 1. Shop Drawings: Unless otherwise stated in the respective Specifications Sections, submit five hard copies.
 - 2. Product Data: Unless otherwise stated in the respective Specifications Sections, submit five hard copies.
 - 3. Samples: Submit five samples unless stated otherwise in the respective Specification Sections.
- G. Submittals shall contain:
 - 1. Cover sheet that includes:
 - a. **The date of submission and the dates of any previous submissions.**
 - b. **The Project title and number.**
 - c. **Contractor identification.**
 - d. **The names of:**
 - 1) **Contractor.**
 - 2) **Supplier.**
 - 3) **Manufacturer.**
 - e. **Identification of the product, with the specification section number, page, and paragraph(s).**
 - 2. Field dimensions, clearly identified as such.
 - 3. Relation to adjacent or critical features of the Work or materials.
 - 4. Applicable standards, such as ASTM numbers.
 - 5. Identification of deviations from Contract Documents.
 - 6. Identification of revisions on resubmittals.

1.25 REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

- A. The Engineer's review is for general conformance with the design intent presented in the Contract Documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the Contract Drawings and Specifications or from departures there from. The Contractor remains responsible for details and accuracy, for coordinating the work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- B. The review of shop drawings, data, and samples will be general. They shall not be construed:
 - 1. As permitting any departure from the Contract requirements:

2. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials:
 3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.
- C. If the shop drawings, data or samples submitted describe variations and show a departure from the Contract requirements which the Engineer finds to be in the interest of the City and to be so minor as not to involve a change in Contract Price or time for performance, the Engineer may return the reviewed drawings without noting an exception.
 - D. One electronic copy of shop drawings or product data will be returned to the Contractor. Samples will not be returned. If the Contractor wishes extra copies to be returned, he shall submit additional copies.
 - E. Submittals will be returned to the Contractor under one of the action codes indicated and defined on the transmittal form furnished by the Engineer.
 - F. Re-submittals will be handled in the same manner as first submittals. On re-submittals the Contractor shall direct specific attention, in writing, on the letter of transmittal and on re-submitted shop drawings by use of revision triangles or other similar methods, to revisions other than the corrections requested by the Engineer on previous submissions. Any such revisions which are not clearly identified shall be made at the risk of the Contractor. The Contractor shall make corrections to any work done because of a revision that is not in accordance with the Contract Documents.
 - G. Partial submittals may not be reviewed. The Engineer will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the Contractor, and will be considered "Rejected" until re-submitted. The Engineer may at his option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.
 - H. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the Contractor shall give written notice thereof to the Engineer at least five (5) working days prior to release for manufacture.
 - I. When the shop drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

1.26 DISTRIBUTION

- A. Distribute reproductions of approved shop drawings and copies of approved product data and samples, where required, to the job site file and elsewhere as directed by the Engineer.

1.27 GENERAL PROCEDURES FOR SUBMITTALS

- A. Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work sections of the Specifications, so that the installation will not be delayed by processing times including re-submittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. No extension of time will be authorized because of poorly sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.
- B. All submittals shall be made utilizing the City supplied online construction management software. Written approval must be obtained from the City before items requiring submittal are installed. Submittals not in accordance with the plans and specifications shall be accompanied by a written statement indicating in detail all parts which deviate from the plans and specifications.

- C. All submittals shall be made to the Engineer by the Contractor only. Submittals received by the Engineer without the Contractor's signature shall be returned to the Contractor without action.
- D. Literature, shop drawings, etc., fully describing the items which the Contractor proposes to install shall be submitted in the form of one electronic copy. Items submitted shall be plainly marked to indicate which options, models etc. are proposed.

PART 9 PRODUCTS - Not Used

PART 10 EXECUTION - Not Used

END OF SECTION

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SECTION 01 40 00

QUALITY CONTROL

PART 11 GENERAL

1.1 PERFORMANCE OF WORK BY CONTRACTOR

- A. The Contractor's procedure and methods of construction may, in general, be of their own choosing, provided they follow best general practice and are calculated to secure results which will satisfy the requirements of these specifications.
- B. The Contractor shall furnish the Engineer all reasonable facilities for obtaining such information as they may desire respecting the character of the materials and the progress of the work. The Contractor shall furnish information to include the number of persons employed, their pay, the time they worked, and other elements of cost at the request of the Engineer or the Engineer.

1.2 AUTHORITY OF THE ENGINEER

- A. The authority of the Engineer for technical contract administration and inspection of the work is limited to the following functions:
 - 1. Inspect and accept or reject work and materials including exceptions to material submittals and shop drawings.
 - 2. Assure compliance with all technical contract terms and conditions.
 - 3. Clarify specifications and drawings where clarification does not involve contract cost or time. Any disagreements with the Contractor over clarification of specifications and drawings are to be immediately referred to the City.
 - 4. Verify, prepare, and recommend payment estimates on progress payments; forward to the City for approval.
 - 5. Conduct "Labor Standards Interviews" in accordance with instructions from the City. All known or suspected violations of the Labor Standards Provisions shall be reported immediately to the City.
 - 6. Enforce safety requirements in accordance with the Federal and State Regulations and the Technical Specifications.
- B. The Engineer is not authorized to take the following actions, all of which remain the sole responsibility of the Engineer.
 - 1. Make changes to the contract provisions, period of performance, or change any contract terms or conditions.
 - 2. Make decisions concerning any claims and disputes under this contract.
- C. Close liaison will be maintained by the Engineer, the City and the Contractor. The Engineer shall notify the City immediately of any problems encountered, including but not restricted to maintaining completion schedules.

1.3 AUTHORITY OF THE INSPECTOR

- A. An Inspector employed by the City will assist the Engineer in making inspections and measurements and will enforce strict compliance with the terms of the contract.
- B. The Inspector shall have free access to the job site at all times while construction is in progress, and the Contractor shall furnish such information and assistance as may be necessary.
- C. The Inspector shall, on a daily basis, record the work being accomplished, the trades working, materials delivered and/or installed, reasons for delays, and other pertinent information.

- D. The Inspector may reject unsuitable materials or work not performed in accordance with the terms of the contract until the situation has been referred to and resolved by the Engineer and/or City.
- E. The Inspector shall observe that all construction is performed in conformance with the contract health and safety requirements.
- F. The Inspector shall conduct wage rate interviews and report suspected labor standard violations to the City.
- G. The Inspector shall check and verify the Contractor's progress payment requests, if progress payments have been included in the contract.
- H. No decisions or instructions of an Inspector will at any time relieve the Contractor from the responsibility of complying fully with all the requirements of the contract. In cases of difference arising between an Inspector and the Contractor or his agent, appeal shall be taken to the Engineer.
- I. Inspectors are not authorized to waive or alter in any respect any of the terms or requirements of the contract, to make additional requirements, to grant extensions of time or delays, or to waive forfeitures. The Contractor shall not be entitled to payment for any work improperly performed with or without an Inspector's approval.

1.4 INSPECTION AND TESTING

A. Contract Description.

1. Where the Contract Documents require work to be field tested or approved, it shall be tested in the presence of the Engineer or its authorized representative. The Engineer shall have the right to witness all on-site tests performed by the Contractor and any shop tests. The results of any tests performed by the Contractor shall be made available for the information of the Engineer. Inspections, tests or favorable reviews by the Engineer or others shall not relieve the Contractor from its obligation to perform the work in accordance with the requirements of the Contract Documents or for its sole responsibility for the quality of workmanship and materials.
2. Except as specifically required under the technical specifications for testing and inspection, all tests for materials furnished by the Contractor will be done in accordance with commonly recognized standards of national organizations. Where tests are to be performed by an independent laboratory or agency, the Contractor shall furnish such samples of all materials as required by the Engineer without charge. The sample or samples of materials to be tested shall be selected by such laboratory or agency, or the Engineer, and not by the Contractor. No material for which the Contract Documents require the submittal and approval of tests, certificates of compliance or other documentation shall be incorporated in the Work until such submittal has been made and approved.
3. The Contractor shall provide safe access for the Engineer and inspectors to adequately inspect the quality of work and the conformance with the Contract Documents. The Contractor shall furnish the Engineer the necessary labor and facilities for such things as excavation in the compacted fill to the depths required to take samples. The Contractor shall provide adequate lighting, ventilation, ladders and other protective facilities as may be necessary for the safe performance of inspections.
4. Upon completion of the Work the Engineer will conduct a final inspection as provided for in Section 01 70 00, "Project Closeout." Records shall be available at all reasonable hours for inspection by other local or State agencies to ascertain compliance with laws and regulations.

B. Notice

1. The Contractor shall notify the Engineer in writing at least 72 hours before any field testing or special inspections, including concrete and compaction testing, are required to

be performed by the independent laboratory. Any offsite test will require more intense planning and scheduling.

2. Whenever the Contractor varies the period during which work is carried on each day, the Contractor shall give due notice to the Engineer so that proper inspection may be provided. Any work done in the absence of the Engineer shall be considered to be rejected. It will be the responsibility of the Contractor to demonstrate to the satisfaction of the Engineer that the work meets all conditions of the specification and if such conditions are not met to remove the work.
3. The Contractor shall give the Engineer written notification at least 30 days prior to the shipment of materials and equipment to be tested and/or inspected at the point of origin. Satisfactory tests and inspections at the point of origin shall not be construed as a final acceptance of the materials and equipment nor shall such tests and inspections preclude retesting or re-inspection at the site of the Work.

C. Testing

1. The Contractor shall be responsible for, and shall pay for, all source quality control testing, off-site tests of materials required including all source and mix design tests for the approval of soil and concrete materials, testing for material disposal, and all quality control testing.
2. The City will perform the soils and concrete quality assurance testing in the Technical Specifications during the performance of the Work. The City may retain the services of an independent qualified testing agency to perform soil and asphalt quality assurance compaction testing and work identified as requiring special inspections and testing as defined by the CBC 2018.
3. The City will perform bacteriological and chlorine residual testing on the new water main.
4. The Contractor shall be responsible for water main pressure testing. The pressure test shall be witnessed by the City for the duration of the test.
5. The Contractor shall be responsible for the costs associated with the re-test of any failed test. The cost of the re-test of any failed test will be deducted from the bid price.
6. The Engineer shall have the authority to require additional tests or inspections due to the manner in which the Contractor executes its work. Examples of such additional tests and inspections include; tests of materials substituted for previously accepted materials, or substituted for specified materials, or retests made necessary by failure of material to comply with the requirements of the Specifications. The Contractor shall be responsible for the costs of any additional tests or inspections.
7. The Contractor shall submit information and certifications for any independent testing laboratory or agency to the Engineer for review and approval of the labs or agency.

D. Work Covered Prior to Inspection and/or Testing

1. Work requiring inspection and/or testing shall not be concealed or buried prior to the acceptance of such inspection or testing. Work covered without the favorable review or consent of the Engineer shall, if required by the Engineer, be uncovered for inspection and/or testing at the Contractor's expense.

E. Work Covered With Prior Inspection and/or Testing

1. If the Engineer considers it necessary or advisable that covered work which was favorably inspected and tested be uncovered for re-inspection and/or retesting, the Contractor, at the Engineer's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Engineer 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 expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such work is not found to be defective the Contractor will be allowed an increase in the Contract price or an extension of the Contract time, or both, directly attributable to such uncovering, exposure, observation, testing and reconstruction, and a Change Order shall be issued for such additional work.

F. Coordination of State of California and other Inspections

1. The Contractor is completely responsible for scheduling all State, County, and any other agency inspections such as Pacific Gas and Electric Company in accordance with the State, County, and agency requirements. The Contractor shall notify the Engineer of all work component inspection notices and schedules. Failure of the Contractor to properly coordinate and schedule these inspections shall not be cause for time extensions.

PART 2 PRODUCTS

2.1 TEST WATER

- A. The City will provide water for testing. The Contractor shall properly dispose of the water which is required for testing of piping and structures, including dechlorination. The Contractor shall coordinate with the City for the use of water available at the project site and shall pay all costs associated with the use of the water. The Contractor shall dispose of all testing water in the sanitary sewer without damage to property, and in accordance with applicable regulations.

END OF SECTION

SECTION 01 50 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 12 GENERAL

1.1 SUBMITTALS SECTION INCLUDES

- A. Meet requirements of Section 01 33 00, "Submittals," as applicable. Make submittals required below before starting Work at the site or in accordance with accepted schedule of submittals submissions.
- B. Administrative Submittals: Copies of permits and approvals for construction as required by Laws and Regulations and governing agencies.
- C. Traffic Control Plan: Submit vehicular and pedestrian traffic control plan as described in this section.

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. City of Sebastopol Standard Specifications and Details.
- B. City of Santa Rosa Water Distribution System Construction Standard Specifications (Section 132).
- C. City of Santa Rosa Sanitary Sewer System Construction Standard Specifications (Section 130).
- D. State of California, Department of Transportation (Caltrans) Specifications and Standards:
 - 1. Standard Specifications:
 - a. Section 7 Legal Relations and Responsibility
 - b. Section 12 Construction Area Traffic Control Devices
 - 2. Standard Plans:
 - a. Temporary Traffic Control Systems
 - 3. California Manual on Uniform Traffic Control Devices, Current Edition (California MUTCD)
- E. Commercial Standards:
 - 1. State of California, Division of Industrial Safety, Department of Industrial Relations:
 - 2. Safety Orders of the Division of Industrial Safety, Department of Industrial Relations of the State of California, current edition
- F. The Contractor must so conduct their operations so as to cause the least possible obstruction and inconvenience to public traffic. Unless otherwise approved by the Engineer, all traffic must be permitted to pass through the Work.
- G. Due to the need to accommodate and minimize inconvenience to the public, unless expressly specified or approved in writing by the Engineer, no road closures will be permitted. Public vehicular and pedestrian traffic must be allowed to travel through the Work area with an absolute minimum of interruption or impedance unless otherwise provided for in the Technical Specifications or approved in writing by the Engineer. The Contractor must make provisions for the safe passage of pedestrians around the area of Work at all times.
- H. Residents affected by construction must be provided passage and access through the Work area to the maximum extent possible.

- I. The Contractor must provide multiple, advance written notices of closures to all affected property owners in a form approved by the Engineer.
- J. Except as otherwise approved by the Engineer or City, the stockpiling or storing of material in City streets or right of way shall be prohibited. Where this is unavoidable, all such materials must be piled or stored in a manner that will not obstruct sidewalks, driveways, or pedestrian crossings. Gutters and drainage channels must be kept clear and unobstructed at all times. All such materials shall be stored and handled in a manner that protects City streets, sidewalks, or other facilities from damage.
- K. Where approved in advance by the Engineer, the Contractor must construct and maintain detours for the use of public traffic at his or her own expense. Failure or refusal of the Contractor to construct and maintain detours so approved at the proper time will be a material breach of the Contract subject to any and all remedies available pursuant to the Contract Documents and at law and equity. Such remedies include, but are not limited to, termination pursuant to the Contract General Conditions.
- L. Throughout performance of the Work the Contractor must construct and adequately maintain suitable and safe crossings over trenches and such detours as are necessary to care for the public and private traffic at all times including Saturdays, Sundays and holidays.
- M. The Contractor will be responsible for keeping all emergency services, including the Healdsburg police and fire departments informed of obstructions to, or detours around any public or private roads caused by reasons of his or her operations.
- N. The Contractor must comply with the California Manual on Uniform Traffic Control Devices (MUTCD) at all times.
- O. The fact that rain or other causes, either within or beyond the control of the Contractor, may force suspension or delay of the Work, shall in no way relieve the Contractor of his or her responsibility of maintaining traffic through the Project and providing local access as specified in this section. The Contractor must, at all times, keep on the job such materials, force and equipment as may be necessary to keep roads, streets and driveways within the Project open to traffic and in good repair and shall expedite the passage of such traffic, using such force and equipment as may be necessary.

1.3 MOBILIZATION

- A. Mobilization shall include, but not be limited to, these principal items:
 - 1. Moving Contractor's field office and equipment required for first month operations onto site.
 - 2. Installing temporary construction power, wiring, and lighting facilities.
 - 3. Providing on-site communication facilities, including telephones.
 - 4. Providing onsite sanitary facilities and potable water facilities as specified and as required by Laws and Regulations, and governing agencies.
 - 5. Insurance and bonds.
 - 6. Posting OSHA required notices and establishing safety programs and procedures.
 - 7. Having Contractor's superintendent at the site full time.
 - 8. Submitting of initially acceptable schedules as required.
- B. Obtaining required permits.

1.4 ACCESS TO SITE

- A. Access to the work from existing roads. The City assumes no responsibility for the condition or maintenance of any road or structure thereon that may be used by the Contractor in performing the work under these specifications or in traveling to and from the site of the work.

No payment will be made to the Contractor by the City for any work done in improving, repairing, or maintaining any road or structure thereon for use in the performance of the work under these specifications. Roads subject to interference by the Work shall be kept open.

1.5 PROTECTION OF PROPERTY

- A. The Contractor shall not enter upon private property for any purpose without first obtaining written permission from the owner or his duly authorized representative, shall be responsible for the preservation of all public and private property along and adjacent to work contemplated under the contract, and shall use every precaution necessary to prevent damage or injury thereto. He/she shall exercise due care in preventing and shall be responsible for damages to structures of all kinds, whether owned by the City or privately, and shall protect from disturbance or damage all land monuments.

1.6 PROTECTION OF ENVIRONMENT

- A. All contract operations shall be conducted in compliance with all federal, state and local environmental laws and regulations. This condition applies to, but is not limited to, laws and regulations governing noise levels, air and water quality standards, and cultural resources.
- B. If the Contractor fails or refuses to promptly comply with the requirements of subparagraph A. above, the Engineer or his/her authorized representative, shall notify the Contractor of any noncompliance and indicate to the Contractor the action to be taken. The Contractor shall, after receipt of such notice, immediately correct the conditions to which attention has been directed. Such notice, either oral or written, when served on the Contractor or his representative(s) at the site of the work, shall be deemed sufficient.
- C. In the event the Contractor fails or refuses to promptly comply with the compliance directive issued under subparagraph above, the Engineer with the concurrence of the Contracting Officer may issue an order to suspend all or any part of the work.
- D. When satisfactory corrective action is taken, an order to resume work will be issued. The Contractor shall not be entitled to any extension of time, nor to any claim for damage or to excess costs by reason of either the directive or the suspension order.

1.7 ADDITIONAL SAFETY REQUIREMENT

- A. In addition to the Safety Standards and Accident Prevention requirements of Section 23 of the Information for Bidders, and Section 16 of the Part III Special Provisions, roll-over protection and seat belts required by 29 CFR 1926 shall be extended to include equipment regardless of year of manufacture.

1.7 CONTRACTOR'S USE OF PREMISES

- A. Availability of lands:
 - 1. All work is to be performed on City lands or such other lands which are designated for the use of the Contractor. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the City, unless otherwise provided in the Contract Documents. Nothing contained in the Contract Documents shall be interpreted as giving the Contractor exclusive occupancy of the lands or rights of way provided.
- B. Use of premises: The Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the project site and approved staging areas. The Contractor shall assume full responsibility for any damage to any such land or area.
- C. Lands furnished by the City upon which Contractor shall perform the Work are as shown on the Drawings.

- D. Coordinate with the City on location(s) for Contractor's temporary facilities and laydown of materials and equipment. In the absence of available laydown area for materials and equipment on City-owned lands or within the City right-of-way, Contractor shall make his/her own arrangements for temporary facilities and laydown of materials and equipment.
- E. Contractor's employees shall park their vehicles in City approved parking areas only.
- F. Contractor's employees shall not use existing City buildings or landscaped areas for break or lunch times. Contractor's employees shall be responsible for cleaning up any litter from break or lunch time.

1.8 TEMPORARY TRAFFIC CONTROL PLAN

- A. The Contractor shall provide all materials, equipment, and labor necessary to furnish, place, and maintain all temporary traffic control systems, including construction and maintenance area traffic control devices and flaggers as required to access the project site and perform the Work in accordance with this Section, and all other appurtenant work, complete in place, as shown on the Drawings and as specified herein.
- B. The Contractor shall submit for review by the Engineer, a Work Zone Traffic Control Plan on 11" x 17" format which contains only information related to the site-specific work zone traffic control. The plan will show which California MUTCD typical applications, if any, are to be used for each work operation in addition to site specific traffic control. If the Contractor proposed to use the current edition of California MUTCD in specific work operations, they shall submit in writing for consideration which Typical Application Diagram will be used for each work operation. The Work Zone Traffic Control Plan shall be specific to the proposed method(s) construction and shall include:
 1. Specific details for construction staging, including the location and limits of the work zone.
 2. Locations of all excavations.
 3. Plans for protection of the public from construction-related hazards.
 4. Lane closures and traffic routing including consideration of construction-related trucking routes.
 5. A trucking route for approval by the Engineer. The route must minimize traffic on residential streets that are not part of the project.
 6. A pedestrian routing plan for approval by the Engineer prepared in accordance with the California MUTCD. The routing plan must demonstrate how pedestrians will be safely routed around the project site during construction.
 7. Lane closure markings, barricade locations, and sign locations showing the necessary signing, methods of delineation and channelization and reference to the appropriate Caltrans standards and California MUTCD details for all affected roads.
 8. Dimensions of lanes affected by traffic control that will be open to traffic.
 9. Dimensions and locations of signs and cone tapers.
 10. Identification of side streets and driveways affected by construction and
 11. Time periods of lane closures and detours.
- C. The Work Zone Traffic Control Plan shall contain a title block which contains the Contractor's name, address, phone number, project superintendent's name, contract name, dates and hours traffic control will be in effect, and a space for review acknowledgment.
- D. The Work Zone Traffic Control Plan shall be submitted to the Engineer and other affected agencies for review at least two weeks prior to implementation in order to determine the Contractor's compliance with the requirements of this section.
- E. No work except for installation of project identification signs will be allowed to commence prior to approval of the Work Zone Traffic Control Plan.

- F. A "Letter of Responsibility," on company letterhead, indicating the names and telephone numbers of at least three different persons who shall be available to be contacted in case of emergency at any time during the life of the contract. Said persons must have decision-making authority within the company.

1.9 PROTECTION OF WORK AND PROPERTY

- A. Reference General Conditions and this Section.
- B. Comply with all OSHA and other applicable safety rules.
- C. Keep Owner informed of all accidents or near accidents on the site and related claims.
- D. Use of Explosives: No blasting or use of explosives will be allowed on the site.
- E. During the performance of the Work, Contractor is responsible for adapting its means, methods, techniques, sequences, and procedures of construction to allow the City to maintain operation as described in Section 01 10 00, "Summary Of Work," at the existing level of facility production and consistent with applicable permit requirements, and Laws and Regulations. In performing such Work and in cooperating with the City to maintain operations, it may be necessary for Contractor to plan, design, and provide various temporary services, utilities, connections, temporary piping and heating, access, and similar items that will be included within the Contract Price.

PART 13 PRODUCTS (NOT USED)

PART 14 EXECUTION

1.1 TEMPORARY UTILITIES

- A. Power:
 - 1. Electric power is not available at the site for the Contractor's use. Contractor shall make arrangements to obtain and pay for electrical power used in performing the Work until final payment and acceptance by the City.
 - 2. Electrical appurtenances required for providing temporary electric power services for the Contractor shall be provided by the Contractor and approved by Pacific Gas and Electric Company.
 - 3. Cost of electric power used in performance and acceptance testing will be borne by Contractor.
 - 4. The Contractor shall provide its own diesel or gasoline engine driven air compressor system and power generator when required for its pneumatic tools or equipment, if any.
- B. Lighting: Provide temporary lighting at least to meet all applicable safety requirements to allow erection, application or installation of materials and equipment, and observation or inspection of the Work. Cost of temporary lighting required for performing the Work will be borne by the Contractor.
- C. Heating, Cooling, and Ventilating:
 - 1. Provide as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation of materials, and to protect materials, equipment, and finishes from damage due to temperature or humidity.
 - 2. Provide adequate forced air ventilation of enclosed areas to cure installed materials, to dispense humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
 - 3. Pay all costs of installation, maintenance, operation, removal, and fuel consumed.

4. Provide portable unit heaters, complete with controls, oil or gas-fired, and suitably vented to outside as required for protection of health and property.
 5. Natural gas is not available at the site.
- D. Water:
1. Contractor to pay for all water use related to the Work. The Contractor shall provide temporary connections, piping and valving. The Contractor shall not make connection to any water system without first obtaining permission from the City.
 2. Contractor will provide temporary facilities and piping required to bring water to the point of use and remove them when no longer needed. The City will install a metering device. The Contractor will pay for water used based on meter readings.
 3. Contractor will provide and bear costs of necessary water required for testing equipment, tanks or vaults, and piping prior to Substantial Completion.
- E. Minimum Safety Equipment:
1. Contractor to provide and maintain onsite adequate safety equipment for activities involved, including but not limited to, air monitors, confined space entry equipment when required, adequate first aid supplies, etc. Contractor to submit list for City review.
- F. Sanitary and Personnel Facilities:
1. Provide and maintain facilities for Contractor's employees, Subcontractors, and all other onsite employees. Service, clean, and maintain facilities and enclosures.
 2. Use of the City's existing sanitary facilities by construction personnel will not be allowed.
 3. Locate sanitary facilities where they will not create a public nuisance or interfere with the work and at the direction of the Engineer or Engineer, relocate sanitary facilities.
 4. Make Contractor's facilities available to the City Construction Inspector.
- G. Communication:
1. The Contractor shall make arrangements to obtain and pay for its own communication equipment such as telephone, cellular phone, and facsimile equipment.
 2. Contractor to pay all costs of installation and monthly bills.
 3. No incoming telephone calls allowed to City telephone system.
- H. Fire Protection: Furnish and maintain on the site adequate firefighting equipment capable of extinguishing incipient fires. Comply with applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241).

1.2 PROTECTION OF WORK AND PROPERTY

- A. General:
1. Contractor shall at no time interfere with or limit the public's access to and parking for the recreational path and trails at the site except as approved by the Engineer.
 2. Perform Work within rights-of-way and easements in a systematic manner that minimizes inconvenience to property owners and the public.
 3. No residence or business shall be cut off from vehicular traffic unless special arrangements have been made.
 4. Maintain in continuous service all existing oil and gas pipelines, underground power, telephone or communication cable, water mains, irrigation lines, sewers, poles and overhead power, and all other utilities encountered along the line of Work, unless other arrangements satisfactory to owners of said utilities have been made.
 5. Where completion of Work requires temporary or permanent removal and/or relocation of an existing utility, coordinate all activities with owner of said utility and perform all work to their satisfaction.
 6. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.
 7. Keep fire hydrants and water or sewer control valves free from obstruction and available for use at all times.

8. In areas where Contractor's operations are adjacent to or near a utility such as gas, telephone, television, electric power, water, sewer, or irrigation system and such operations may cause damage or inconvenience, suspend operations until arrangements necessary for protection thereof have been made by Contractor.
 9. Notify property owners and utility companies which may be affected by the construction operation at least 7 calendar days in advance. Before exposing a utility, obtain utility owner's permission. Should service of utility be interrupted due to Contractor's operation, notify proper authority immediately. Cooperate with said authority in restoring service as promptly as possible and bear all costs incurred.
 10. Do not impair operation of existing sewer or storm drain systems. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, storm drains, or other sewer structures. Maintain original site drainage wherever possible.
- B. Site Security: Provide and maintain additional temporary security fences as necessary to protect the Work and Contractor's equipment and stored material. Contractor shall be solely responsible for any vandalism, theft, or damage to the work and Contractor's equipment and stored material.
- C. Barricades and Lights:
1. Provide barricades, as necessary, to prevent unauthorized entry to construction areas inside and outside of fenced area, and as required to ensure public safety and the safety of Contractor's employees, other employer's employees, and any others who may be affected by the Work.
 2. Provide to protect existing facilities and adjacent properties from potential damage.
 3. Locate to enable access by facility operators and property owners.
 4. Protect streets, roads, highways, and other public thoroughfares that are closed to traffic by effective barricades with acceptable warning signs that comply with the requirements of the manual on Uniform Traffic Control Devices, current edition.
- D. Signs and Equipment:
1. Conform to requirements of the Contract Documents.
 2. Barricades: Provide in sufficient quantity to safeguard public and Work.
 3. Traffic Cones: Provide to delineate traffic lanes to guide and separate traffic movements.
 4. Provide barricades and lighting at obstructions, such as material piles and equipment.
 5. Illuminate barricades and obstructions with warning lights from sunset to sunrise.
 6. Alert the general public of construction hazards, which would include surface irregularities, unramped walkways, grade changes, and trenches or excavations in roadways and in other public access areas.
- E. Trees and Plantings:
1. Protect from damage and preserve trees, shrubs, and other plants outside the limits of the Work and within the limits of the Work unless designated on the Drawings to be removed.
 - a. Where practical, tunnel beneath trees when on or near the line of trench.
 - b. Employ hand excavation as necessary to prevent tree injury.
 - c. Do not stockpile materials or permit traffic within drip lines of trees.
 - d. Provide and maintain temporary barricades around trees.
 - e. Water vegetation as necessary to maintain health.
 - f. Cover temporarily exposed roots with wet burlap, and keep the burlap moist until soil is replaced around the roots.
 - g. No trees, except those specifically shown on Drawings to be removed, shall be removed without written approval of the Engineer.
 - h. Dispose of removed trees in a legal manner off the site.
 2. The balling and burlapping of trees indicated for replacement shall conform to the recommended specifications set forth in the American Standards for Nursery Stock. All balls shall be firm and intact and made-balls will not be accepted. Handle ball and burlap trees by the ball and not by the top.

3. In the event of damage to bark, trunks, limbs, or roots of plants that are not designated for removal, treat damage by corrective pruning, bark tracing, application of a heavy coating of tree paint, and other accepted horticultural and tree surgery practices.
 4. Replace each plant that dies as a result of construction activities.
- F. Existing Structures: Where Contractor contemplates removal of small structures such as mailboxes, signposts, and culverts that interfere with Contractor's operations, obtain approval of the Engineer. Replace those removed in a condition equal to or better than original.
- G. Finished Construction: Protect finished floors and concrete floors exposed as well as those covered with composition tile or other applied surfacing.
- H. Waterways: Keep ditches, culverts, and natural drainages continuously free of construction materials and debris.
- I. Dewatering: Construct, maintain, and operate cofferdams, channels, flume drains, sumps, pumps, or other temporary diversion and protection works. Furnish materials required, install, maintain, and operate necessary pumping and other equipment for the environmentally safe removal and disposal of water from the various parts of the Work. Maintain the foundations and parts of the Work free from water.

1.3 TEMPORARY CONTROLS

- A. Air Pollution Control: Comply with requirements of the Federal Clean Air Act, Bay Area Air Quality Management District, and any and all governing local requirements.
- B. Noise Control: Provide acoustical barriers so noise emanating from tools or equipment will not exceed legal noise levels.
- C. Water Pollution Control: Comply with the NPDES General Permit and all requirements of the State of California, the County of Sonoma, and the Contract Documents.
- D. Erosion, Sediment, Runoff, and Flood Control
1. Provide, maintain, and operate temporary facilities to control erosion and sediment releases, prevent runoff of contaminated or sediment laden water, and to protect Work and existing facilities from flooding during construction period.
 2. Comply with the NPDES General Permit for Storm Water Discharges associated with Construction Activity.

1.4 STORAGE YARDS AND BUILDINGS

- A. Temporary Storage Yards: Due to site constraints only minimal onsite storage of materials will be permitted. Contractor shall utilize only the allotted area for his/her activities and area designated on drawings as "contractor laydown area."
- B. Temporary Storage Buildings:
1. No storage buildings will be allowed.
 2. No storage of combustible materials shall be permitted onsite other than what is being used or consumed that day.

1.5 ACCESS ROADS AND DETOURS

- A. No road detours are anticipated for the Work.
- B. Maintain drainage ways. Install and maintain culverts to allow water to flow beneath access roads. Provide corrosion-resistant culvert pipe of adequate strength to resist construction loads.

- C. Provide gravel, crushed rock, or other stabilization material to permit access by all motor vehicles at all times.
- D. Maintain road grade and crown to eliminate potholes, rutting, and other irregularities that restrict access.
- E. Coordinate with Engineer lane closures and other operations affecting traffic and access. Provide at least 72 hours' notice to the Engineer of operations that will alter access to the site.
- F. Upon completion of construction, leave roads and fences in same or better as pre-construction, and suitable for future use by the City.

1.6 PARKING AREAS

- A. Due to site constraints, Contractor shall provide parking facilities for personnel working on the Project in Contractor's parking area or other approved area. No employee or equipment parking will be permitted on the City's existing paved areas without prior approval. Any additional parking spaces required shall be the responsibility of the Contractor.

1.7 VEHICULAR TRAFFIC

- A. Comply with Section 12-1.05 of the Contract General Provisions.
- B. Comply with Laws and Regulations regarding closing or restricting the use of public streets or highways. No public or private road shall be closed, except by written permission of the Engineer. Assure the least possible obstruction to traffic and normal commercial pursuits.
- C. Prior to any anticipated road closure or detour, a traffic control plan and pedestrian traffic control plan prepared by a California licensed Civil or Traffic Engineer shall be submitted to the Engineer.
- D. No work shall commence until traffic control signing has been approved by the Engineer.
- E. The Contractor shall provide all materials, equipment, and labor necessary to furnish, place, and maintain all temporary traffic control systems and pedestrian control systems, including construction and maintenance area traffic control devices and flaggers as required to perform the Work.
- F. Conduct Work to interfere as little as possible with public travel, whether vehicular or pedestrian.
 - 1. 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.
 - 2. Road Closures: Maintain satisfactory means of exit for persons residing or having occasion to transact business along the route of the Work. If it is necessary to close off roadway or alley providing sole vehicular access to property for periods greater than 2 hours, provide written notice to the Engineer so affected 3 days prior to such closure. In such cases, closings of up to 4 hours may be allowed. Closures of up to 10 hours may be allowed if a week's written notice is given and undue hardship does not result. Notification signs to the public including "No Parking" signs shall be posted at least 48 hours prior to Work in affected area.
 - 3. In making street crossings, do not block more than one-half the street at a time. Whenever possible, widen the shoulder on the opposite side to facilitate traffic flow. Provide temporary surfacing on shoulders as necessary.
- G. Whenever the Contractor's operations create a condition hazardous to the public, furnish, erect, and maintain such fences, barricades, lights, signs and other devices as are necessary to prevent accidents or damage or injury to the public.

- H. Maintain top of backfilled trenches before they are paved, to allow normal vehicular traffic to pass over. Provide temporary access for driveways where required. Cleanup operations shall follow immediately behind backfilling.
- I. When flaggers and guards are required by regulation or when deemed necessary for safety, furnish them with approved orange wearing apparel and other regulation traffic control devices complying with the provisions of the California MUTCD and State of California Department of Transportation Standard Specifications and Standard Plans.
- J. Coordination: Coordinate traffic routing with that of others working in the same or adjacent areas.
- K. Under no circumstances shall access to businesses or residences be held up more than 30 minutes at any one time. The Contractor may coordinate with property and business owners to schedule work so that longer delays do not adversely affect residents or business owners to their satisfaction. In addition, Contractor shall give personal notice to all affected property owners as specified in paragraph M, hereinbefore. Before closing any street to through traffic, Contractor shall obtain prior approval from the Engineer seven (7) days in advance of closure. Contractor shall at all times provide access to public facilities such as schools, etc. and make provisions for passage of emergency vehicles.
- L. Should the Contractor appear to be neglectful or negligent in furnishing warning and productive measures as above specified, the Engineer may direct attention to the existence of hazard, and the necessary warning and protective measures shall be furnished and installed by the Contractor at his expense, without cost to the City. Should the Engineer point out any inadequacy of warning and protective measures, such action on the part of the Engineer shall not relieve the Contractor from responsibility for public safety nor abrogate his obligation to furnish and pay for these devices
- M. The Contractor shall keep the City of Sebastopol Fire Department and Police Department informed regarding the closure or restriction of any traveled way. At a minimum, the Contractor shall call the Fire Department at (707) 823-8061, daily to report any traveled way closure. This requirement applies immediately upon closure for that day and again immediately after removal of the closure. For closures over multiple days, the daily notification still applies. This requirement does not apply for single lane closures on multiple lane local streets.

1.8 CLEANING DURING CONSTRUCTION

- A. General:
 1. Rubbish shall not be allowed to accumulate on the site and the Contractor shall collect and remove, from time to time, such rubbish and debris incident to the execution of the contract as, in the opinion of the Engineer, may be undesirable or disfiguring on the premises. The Contractor may not burn any material on the site. Wet down exterior surfaces prior to sweeping to prevent blowing of dust and debris.
 2. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. At least at weekly intervals, dispose of such waste materials, debris, and rubbish offsite.
 3. At least weekly, brush sweep the entry drive and roadways, and all other streets and walkways affected by Work and where adjacent to Work. There will be times when sweeping will be required daily. Remove all mud and debris tracked onto roadway as soon as possible.
 4. Do not allow material to fall out of trucks onto any roadway when hauling away cleared and grubbed vegetation, particularly the branches and thorns of Kiave trees to be removed.

1.9 REMOVAL OF TEMPORARY FACILITIES AND UTILITIES

- A. At such time or times any temporary construction facilities and utilities are no longer required for the Work, Contractor shall notify the Engineer of his intent and schedule for removal of the temporary facilities and utilities, and obtain the Engineer's approval before removing the same. As approved, Contractor shall remove the temporary facilities and utilities from the site as his property and leave the site in such condition as specified, as directed by the Engineer, and/or as shown on the Plans.
- B. After completion of the project, all temporary utility services shall be disconnected or removed and all affected improvements shall be restored to their original condition by the Contractor at no cost to the City.
- C. 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.

END OF SECTION

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SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 15 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Product delivery requirements.
- C. Product storage and handling requirements.
- D. Product options.
- E. Product substitution procedures.

1.2 PRODUCTS

- A. All products shall be new unless specified otherwise.
- B. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.
- C. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.
- D. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Schedule delivery of products or equipment as required to allow timely installation and to avoid prolonged storage.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Deliver products or equipment in manufacturer's original unbroken cartons or other containers designed and constructed to protect the contents from physical or environmental damage.
- D. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Clearly and fully mark and identify as to manufacturer, item and installation location.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products in accordance with manufacturers' instructions. Provide manufacturer's instructions for storage and handling.
- B. Store with seals and labels intact and legible.

- C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- D. Store pumps, motors, electrical equipment, and other equipment having antifriction or sleeve bearings in weather tight warehouses.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- G. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- H. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.
- I. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- J. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 STORAGE FACILITIES

- A. Temporary Storage Building:
 - 1. Provide a weatherproof temporary storage building or other secure facility specifically for the purpose of providing for protection of products and equipment.
 - 2. Equip building with lockable doors and lighting and provide electrical service for equipment space heaters and heating or ventilation as necessary to provide storage environments acceptable to specified manufacturers.
 - 3. Provide method of storage of products and equipment off the ground.

1.6 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with the following article.

1.7 PRODUCT SUBSTITUTION PROCEDURES

- A. Engineer will consider requests for Substitutions only within 30 days after date of Owner-Contractor Agreement.
- B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that Contractor:

1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
 2. Will provide same warranty for Substitution as for specified product.
 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 5. Will reimburse Owner for review or redesign services associated with re-approval by authorities having jurisdiction.
- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Contract Documents.
- F. Substitution Submittal Procedure:
1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
 3. Engineer will notify Contractor in writing of decision to accept or reject request.

PART 16 PRODUCTS - Not Used

PART 17 EXECUTION - Not Used

END OF SECTION

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SECTION 01 70 00

PROJECT CLOSEOUT

PART 18 GENERAL

1.1 FINAL CLEANUP

- A. The Contractor shall promptly remove all rubbish, debris, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. The Contractor may not burn any material on the site. Final acceptance of the Work by the City will be withheld until the Contractor has satisfactorily complied with the foregoing requirements for final cleanup of the project site.

1.2 CLOSEOUT TIMETABLE

- A. The Contractor shall establish dates for equipment testing, acceptance periods, (as required under the Contract). Such dates shall be established not less than two weeks prior to beginning any of the foregoing items, to allow the City, the Engineer, and their authorized representatives and consultants sufficient time to schedule attendance at such activities.
- B. All temporary buildings, including field offices, storage buildings, and sheds shall be removed from the project site 7 days after completion of the Work. All temporary services such as water, power, utilities, service contracts, pager contracts, telephones, and other temporary services shall remain in service for 7 days following approval of substantial completion of the Work by the City, and shall be discontinued within 7 days after.

1.3 FINAL INSPECTION

- A. The Contractor shall notify the Engineer at least ten (10) working days prior to the anticipated date of completion of all work specified in the contract. Upon completion of the work, the Engineer shall proceed with final inspection and shall complete such inspection as promptly as practicable. The time required for such inspection and the making of any corrections as a result thereof shall be included in the contract performance time.

1.4 FINAL SUBMITTALS

- A. The Contractor, prior to requesting its final progress payment, shall submit the following items to the Engineer:
 - 1. Written guarantees or warranties.
 - 2. Certificates of compliance.
 - 3. Completed final Record Drawings.
 - 4. Certificates of inspection and acceptance by local governing agencies having jurisdiction.

1.5 COMPLETION OF THE WORK

- A. The date of substantial completion of the Project shall be the date when the construction is sufficiently completed, in accordance with the Contract Documents, as modified by any change orders agreed to by the parties, so that the City can occupy or utilize the project for the use for which it was intended, and the City has accepted the Project.

1.6 REMAINING PUNCH LIST ITEMS

- A. Upon attaining substantial completion and upon acceptance of the Work by the City, by agreement between the parties some small remaining punch list items may remain to be completed by the Contractor.

- B. Failure of the Contractor to complete or correct all such outstanding punch list work to the satisfaction of the Engineer shall constitute a waiver by the Contractor of all rights to any and all claims it may have to all monies withheld by the City under the Contract to cover the value of such uncompleted or uncorrected items.

1.7 MAINTENANCE, CORRECTION AND REPAIR PERIOD

- A. The Contractor shall comply with the correction and repair requirements contained in the General Conditions.
- B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the Contractor which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the Contractor shall have obtained a statement in writing from the affected private owner or public agency releasing the City from further responsibility and liability in connection with such repair or resurfacing.
- C. The Contractor shall make all repairs and replacements promptly upon receipt of written order from the City. If the Contractor fails to make such repairs or replacements promptly, the City reserves the right to do the work or to have the work done by others and the Contractor and its Surety shall be liable to the City for the cost thereof.

1.8 ACCEPTANCE AND FINAL PAYMENT

- A. Final acceptance of the project is in accordance with Section 10-1.03 of the General Conditions. The Engineer shall certify to the City that the contract is complete and include with the certification the amount of the final payment due the Contractor. All progress or partial payments made prior to the final payment are subject to correction in the final estimate and payment.

1.9 RELEASE OF CLAIMS

- A. After completion of work, and prior to final payment, the Contractor shall furnish to the conditional or unconditional waiver upon final payment, properly executed by the Contractor, releasing claims against the City of Sebastopol arising out of the contract, other than claims specifically excepted from the operation of the release.

PART 19 PRODUCTS - Not Used

PART 20 EXECUTION - Not Used

END OF SECTION

SECTION 01 72 00
RECORD DOCUMENTS

PART 21 GENERAL

1.1 SUBMITTALS

- A. Quality Control Submittals: Written procedures for maintaining and markup of record documents. Contract description.
- B. Contract Closeout Submittal: Record Documents in accordance with the requirements of this section. Submit prior to application for final payment.

1.2 QUALITY ASSURANCE

- A. Furnish a qualified and experienced person, whose duty and responsibility shall be to maintain record documents.
- B. Accuracy of Records:
 - 1. Coordinate changes within record documents, making neat, legible and accurate entries on each page of Specifications and each sheet of Drawings and other documents where such entry is required to show change.
 - 2. Purpose of project record documents is to provide factual information regarding aspects of Work, both concealed and visible, to enable future modification of Work to proceed without lengthy and expensive site measurement, investigation, and examination.
- C. Make entries within 24 hours after receipt of information that a change in Work has occurred.
- D. Prior to submitting each request for progress payment, request Engineer's review and approval of current status of record documents. Failure to properly maintain, update, and submit record documents may result in return of Contractor's Application for Progress Payment by Engineer.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Maintain record documents completely protected from deterioration, loss, and damage until completion of Work.
- B. In event of loss of recorded data, use means necessary to again secure data to Engineer's acceptance. Such means shall include, if necessary in Engineer's opinion, removal and reconstruction of covering materials, at no additional cost to the City.

PART 22 PRODUCTS

1.1 RECORD DOCUMENTS

- A. Promptly following the Notice to Proceed, Engineer will provide 1 complete hardcopy set of full size drawings to the Contractor for use in preparing Record Drawings.

PART 23 EXECUTION

1.1 MAINTENANCE OF RECORD DOCUMENTS

- A. General:

1. Label or stamp each record document with title, "Record Documents," in neat large printed letters.
 2. Record information concurrently with construction progress and within 24 hours after receipt of information that change has occurred. Do not cover or conceal Work until required information is recorded.
- B. Preservation
1. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
 2. Make documents and Samples available at all times for observation by Engineer.
- C. Making Entries on Drawings
1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.
Color Coding:
 - a. Green when showing information deleted from Drawings.
 - b. Red when showing information added to Drawings.
 - c. Blue and circled in blue to show notes.
 2. Date entries.
 3. Call attention to entry by "cloud" drawn around area or areas affected.
 4. Legibly mark to record actual changes made during construction, including, but not limited to:
 - a. Depths of various elements of foundation in relation to finished first floor data if not shown or where depth differs from that shown.
 - b. Horizontal and vertical locations of existing and new underground facilities and appurtenances, and other underground structures, equipment, or Work. Reference to at least two measurements of permanent surface improvements.
 - c. Location of internal utilities and appurtenances concealed in the construction referenced to visible and accessible features of the structure.
 - d. Locate existing facilities, piping, equipment, and items critical to the interface between existing physical conditions or construction and new construction.
 - e. Changes made by Addenda and Field Orders, Work Change Directive, Change Order, Written Amendment, and Engineer's written interpretation and clarification using consistent symbols for each and showing appropriate document tracking number.
 5. Dimensions on Schematic Layouts: Show on record drawings, by dimension, the centerline of each run of items such as are described in previous subparagraph above.
 - a. Clearly identify the item.
 - b. Show, by symbol or note, vertical location of item ("under slab," "in ceiling plenum," "exposed," and the like).
 - c. Make identification so descriptive that it may be related reliably to Specifications.
- D. Make entries in other pertinent documents as accepted by Engineer.

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

4 GENERAL

1 SUMMARY

- a Section includes administrative and procedural requirements for the following:
 - i Recycling nonhazardous construction waste.
 - ii Disposing of nonhazardous demolition and construction waste.
- b Related Sections:
 - i Section 02 41 10 – Demolition, Salvage and Abandonment: for disposition of waste resulting from site demolition activities.

2 DEFINITIONS

- a Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- b Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- c Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- d Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- e Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- f Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

3 PERFORMANCE REQUIREMENTS

- a Construction Waste:
 - i Site-clearing and demolition waste.
 - ii Soils.
 - iii Concrete and asphalt.
 - iv Lumber.
 - v Wood sheet materials.
 - vi Metals.
 - vii Piping and fittings.
 - viii Electrical conduit.
 - ix Packaging: Regardless of salvage/recycle goal indicated in paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1 Paper.
 - 2 Cardboard.
 - 3 Boxes.

- 4 Plastic sheet and film.
- 5 Polystyrene packaging.
- 6 Wood crates.
- 7 Plastic pails.
- 8 HI-5 beverage containers.

4 ACTION SUBMITTALS

a Waste Management Plan: Submit plan within 7 days of date established for the Notice to Proceed.

5 INFORMATIONAL SUBMITTALS

a Waste Reduction Report: Concurrent with final Application for Payment, submit report. Include the following information:

- i Material category.
- ii Generation point of waste.
- iii Total quantity of waste in **tons**.
- iv Quantity of waste salvaged, both estimated and actual in **tons**.
- v Quantity of waste recycled, both estimated and actual in **tons**.
- vi Total quantity of waste recovered (salvaged plus recycled) in **tons**.
- vii Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

b Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

c Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

d Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

6 QUALITY ASSURANCE

a Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

7 WASTE MANAGEMENT PLAN

a General: Develop a waste management plan according to ASTM E 1609 and requirements of this Section. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

5 PRODUCTS (NOT USED)

6 EXECUTION

1 PLAN IMPLEMENTATION

a General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

i Comply with Division 01 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.

b Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

i Distribute waste management plan to everyone concerned within three days of submittal return.

ii Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

c Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

i Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

ii Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

2 RECYCLING CONSTRUCTION WASTE, GENERAL

a General: Recycle paper and beverage containers used by on-site workers.

b Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

c Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.

d Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.

i Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

1 Inspect containers and bins for contamination and remove contaminated materials if found.

- ii Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
- iii Stockpile materials away from construction area. Do not store within drip line of remaining trees.
- iv Store components off the ground and protect from the weather.
- v Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3 RECYCLING CONSTRUCTION WASTE

a Packaging:

- i Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
- ii Polystyrene Packaging: Separate and bag materials.
- iii Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
- iv Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

b Site-Clearing Wastes:

- i No burning of brush or any other materials will be allowed on the site.
- ii Any and all organic material that has been cleared and grubbed must be stockpiled and composted such that seeds of invasive species by the heat of composting over a period of six to nine months. Composted material shall be used as organic mulch in accordance with Division 32 Section "Plants".

c Wood Materials:

- i Clean Cut-Offs of Lumber: Grind or chip into small pieces.
- ii Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

4 DISPOSAL OF WASTE

a General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

- i Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
- ii Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

b Burning: Do not burn waste materials.

c Disposal: Transport waste materials off Owner's property and legally dispose of them.

d Washing out of concrete trucks will not be allowed at the site.

END OF SECTION

SECTION 02 01 00

SITE CONDITIONS

PART 24 GENERAL

1.1 DESCRIPTION

- A. General: All information obtained by the Engineer regarding site conditions and existing underground utilities and similar data are shown on the Drawings. No Geotechnical Investigation Report has been prepared for this project.
- B. Information derived from inspection of topographic maps, or from plans showing locations of utilities and structures will not in any way relieve the Contractor from any risk, or from properly examining the site and making such additional investigations as he may elect, or from properly fulfilling all the terms of the Contract Documents.
- C. Related Work described elsewhere:
 - 1. Section 02 01 10 - Existing Utilities and Underground Structures
 - 2. Section 31 00 00 - Earthwork

1.2 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor shall satisfy himself 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, sanitary sewer, electric power, communications, roads, and uncertainties of weather, river stages, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment 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.
- B. The Contractor shall further satisfy himself as to the character, quality, and quantity of surface and subsurface materials to be encountered by inspecting the, and information presented by the plans and specifications made as part of this Contract. Any failure by the Contractor to acquaint himself with all available information will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the Work.
- C. The Contractor shall anticipate underground obstructions such as utility lines, foundations, groundwater, stumps, varying soil conditions, and debris. No extra payment will be allowed for the removal, replacement, repair, or possible increased cost caused by underground obstructions indicated in the Contract Documents. Any such lines or obstructions indicated on the Drawings show only the approximate location and must be verified in the field by the Contractor.
- D. The Contractor shall note that portions of the existing road surfaces are not in structural sections and that heavy truck and equipment operations may cause road surface damage in excess of normal usage. If damage does occur due to construction activity, the Engineer shall be notified immediately before proceeding with the Work, or causing more damage to occur. Damage caused to the existing asphalt road surface by Contractor's operations shall be repaired per Section 32 12 16 "Hot Mix Asphalt Paving."

1.3 ADDITIONAL INFORMATION

- A. Prior to bidding, bidders may make their own subsurface investigations subject to time schedules and arrangements approved in advance by the City. Before any subsurface test holes are excavated, obtain clearance from City.

PART 25 **PRODUCTS (NOT USED)**

PART 26 **EXECUTION (NOT USED)**

END OF SECTION

SECTION 02 01 10

EXISTING UTILITIES AND UNDERGROUND STRUCTURES

PART 27 GENERAL

1.1 SUMMARY

- A. Section includes: Contractor is responsible for locating and protecting existing utilities, facilities and underground structures. Responsibilities shall include but are not limited to those defined in this section.
- B. Refer to Drawings for the approximate locations of utilities and underground structures.

1.2 GENERAL

- A. The Contractor shall protect all existing utilities and improvements not designated for removal, and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.
- B. The approximate locations of known existing utilities are shown in the Drawings. The Contractor shall verify the location of existing utilities at least 2 working days but no more than 14 calendar days prior to the beginning excavation by notifying Underground Services Alert (USA) North at 811. The Contractor shall notify the Engineer of any utilities not shown in the Drawings or substantially different from the Drawings. The Contractor shall make exploratory excavations of all utilities including those not shown in the Drawings that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of the Contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's Work.
- C. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utilities.

1.3 CALIFORNIA ADMINISTRATIVE CODE

- A. Section 1540(a)1 of Construction Safety Orders (Title 8) California Administrative Code, Section 1540 states:
- B. (1) "Prior to opening and 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. All known owners of underground facilities in the area concerned shall be advised of proposed Work at least 48 hours prior to the start of actual excavation."
- C. The City and Engineer have determined the location of public utilities and underground structures as well as existing mapping permits. However, in accordance with California's Administrative Code, Section 1540, the Contractor shall make the effort to determine the exact location of underground installations.

1.4 PUBLIC UTILITIES AND AGENCIES AFFECTED

- A. Electrical, Pacific Gas & Electric Company has jurisdiction over electrical power - Call: (707) 579-6356 a minimum of 48 hours prior to any excavation within 10 feet of existing electrical lines. It should be noted that where a structure is known to receive service and does not have

overhead service, then underground service shall be assumed to exist. For underground utility location call Underground Service Alert (USA) at (800) 227-2600.

- B. Gas, Pacific Gas & Electric Company has jurisdiction over gas. Call: (707) 468-3954 a minimum of 48 hours prior to any excavation within 10 feet of existing gas.
- C. Telephone Service, AT&T - Call: (707) 575-2077. It should be noted that where service to a structure is known to receive service and does not have overhead service, then underground service shall be assumed to exist. For assistance with location of underground telephone facilities, call U.S.A. at (800) 227-2600.
- D. Communications/Internet, Comcast - Call: (323) 342-5552. For assistance with location of underground telephone facilities, call U.S.A. at (800) 227-2600.
- E. Water Service, City of Sebastopol has jurisdiction over water utilities. Call: (707) 823-5331.
- F. Drainage, City of Sebastopol has jurisdiction over drainage facilities in the area. Call: (707) 823-5331.
- G. Sewer Service, City of Sebastopol has jurisdiction over sanitary sewer facilities in the area. Call: (707) 823-5331.

1.5 PROTECTION OF STREET OR ROADWAY MARKERS

- A. The Contractor shall not destroy, remove, or otherwise disturb any existing survey markers, street monuments, or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or the permanent markers points that will be disturbed by the construction operations have been properly referenced. All survey markers or points disturbed by the Contractor shall be accurately replaced after all street or roadway resurfacing has been completed.

1.6 REPLACEMENT OF MONUMENTS

- A. The Contractor shall be responsible for the preservation of all existing survey monuments or permanent benchmarks. Any monuments or benchmarks disturbed or destroyed by the Contractor shall be referenced and replaced by a California licensed land surveyor. A corner record or record of survey, as appropriate, shall be filed by the licensed land surveyor as required by the most current California Professional Land Surveyors' Act with the appropriate local government agencies.
- B. Standard brass marker shall be provided by the Contractor. Brass marker shall be placed in survey monument before the concrete block has acquired its initial set and shall be firmly bedded in the concrete. The concrete block shall be so located that when the marker is installed, the reference point will fall within a one-inch circle in the center of the marker.

1.7 RESTORATION OF PAVEMENT

- A. General. All paved areas, including asphalt concrete berms cut or damaged during construction, shall be replaced with similar materials and of a thickness equal to the existing plus 1 inch or 6 inches, whichever is greater, except where specific resurfacing requirements have been called for in the Contract Documents. Restoration of paved areas shall be in accordance with the requirements of Section 32 12 16, "Hot Mix Asphalt Paving." All pavements that are subject to partial removal shall be neatly sawcut in straight lines.
- B. Temporary Resurfacing. The Contractor shall place temporary surfacing promptly after backfilling and shall maintain such surfacing until final restoration of improvements.

- C. Permanent Resurfacing. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight line to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement and other facilities (i.e., valve lids, manhole covers, etc.). The Contractor shall replace damaged pavement striping in kind.
- D. Restoration of Sidewalks. Wherever sidewalks have been removed for purposes of construction, the Contractor shall place suitable temporary sidewalks promptly after backfilling and shall maintain them in satisfactory condition until the final restoration there has been made.

1.8 EXISTING UTILITIES AND IMPROVEMENTS

- A. General. The Contractor shall protect all existing underground utilities and other improvements that may be impaired during construction operations. It shall be the Contractor's responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.
- B. Utilities to be moved. In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the Contractor, be notified by the City to move such property. Time of relocation of the utility by the utility company is not a responsibility of the City. When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the Engineer a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.
- C. Where the proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement that is indicated, the Contractor shall remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the Engineer and the City of the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the Contractor in a manner that will restore or replace the utility or improvement as nearly as possible to its former location and to equal or better condition as found prior to removal.
- D. City's Right of Access. The right is reserved to the City and to the owners of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work of this Contract.
- E. Underground Utilities Indicated. Existing utility lines that are indicated or the locations of which are made known to the Contractor prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling, and if damaged, shall be immediately repaired or replaced by the Contractor to the satisfaction of the Engineer.
- F. Underground Utilities not Indicated. In the event that the Contractor damages any existing utility lines that are not indicated or the locations of which are not made known to the Contractor prior to excavation, a written report there-of shall be made by the Contractor to the City.
- G. All costs of locating, repairing damage not due to failure of the Contractor to exercise reasonable care, and removing or relocating such utility facilities not shown in the Contract documents with reasonable accuracy, and for equipment on the project which was actually working on that portion of the Work which was interrupted or idled during such Work will be paid for as extra Work.

- H. Approval of Repairs. All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement City before being concealed by backfill or other Work. Contractor to schedule with City for all inspections.
- I. Maintain In Service. All power and telephone or the communication cable ducts, gas and water mains, irrigation lines, sanitary sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of Work shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the Engineer are made with the City of said pipelines, duct, main, irrigation lines, sanitary sewer, storm drain, pole, or wire or cable. The Contractor shall be responsible for and shall repair all damage due to its operations, and 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.

1.9 TREES WITHIN STREET RIGHTS-OF-WAYS AND PROJECT LIMITS

- A. General. The Contractor shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and project limits, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the City. All existing trees and shrubs that are damaged during construction shall be trimmed or replaced by the Contractor or a certified tree company under permit from the City. Tree trimming and replacement shall be accomplished in accordance with the following paragraphs.
- B. Trimming. Symmetry of the tree shall be preserved; no stubs or splits or torn branches left; clean cuts shall be made close to the trunk or large branch. Spikes shall not be used for climbing live trees. All limbs over 1-1/2 inches in diameter shall be coated with an asphaltic emulsion material.
- C. Replacement. The Contractor shall immediately notify the City if any tree is damaged by the Contractor's operations. If, in the opinion of the City, the damage is such that replacement is necessary, the Contractor shall replace the tree at its own expense. The tree shall be of a like size and variety as the tree damaged, or, if of a smaller size, the Contractor shall pay to the City of said tree a compensatory payment acceptable to the tree City, subject to the approval of the jurisdictional agency or City. The size of the trees shall be not less than 1-inch diameter nor less than 6 feet in height.

1.10 NOTIFICATION BY THE CONTRACTOR

- A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sanitary sewer, storm drain, gas, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway; the Contractor shall notify the respective authorities representing the owners or agencies responsible for such facilities not less than three (3) days nor more than seven (7) days prior to excavation so that a representative of said owners of agencies can be present during such Work if they so desire. The Contractor shall also notify USA at (800) 227-2600 at least 2 working days, but no more than 14 calendar days, prior to such excavation.

PART 28 PRODUCTS (NOT USED)

PART 29 EXECUTION

1.1 CONTRACTOR RESPONSIBILITY

- A. The Contractor shall anticipate water, sanitary sewer, electrical, gas, communication, drainage and telephone services. It may be expected that there will be variation in location from that as

shown on the Drawings to the actual location. Contractor responsible for verifying actual location in the field after pre-marking by the various utilities affected.

- B. No extra payment will be allowed for the removal, replacement, repair, or possible increased cost caused by inadvertent or planned interception and breaking of underground obstructions which may exist.
- C. It should be understood that the various utilities are indicated on the Drawings to show only the approximate location and must be verified in the field by the Contractor. The various utility agencies will cooperate with the Contractor to endeavor to familiarize him with all known underground utilities obstructions, but this will not relieve the Contractor from full responsibility in anticipating and locating their actual location.
- D. The Contractor, in conjunction with the affected utility company(s), shall pothole and establish the horizontal and vertical location of all utilities shown on the Drawings and marked in the field. This may be done on an area-by-area basis, but shall be accomplished at least five working days in advance of the date of construction within such area. Any discrepancies (horizontal and/or vertical) between the location of a utility found by the potholing operation than that shown on the Drawings shall be brought to the Engineer's attention immediately. Potholing shall be required at the connection to existing facilities prior to the shop drawing submittals.

1.2 PRIOR INVESTIGATION

- A. Prior to bidding, each bidder shall make his own subsurface investigations, talk to the various utilities affected to secure, for his own information, the knowledge of each utility with the precise location of their facilities so that he may take into account in his bid the difference in location from that believed to exist to that which may actually prove to be the precise location.

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SECTION 02 41 10

DEMOLITION, SALVAGE AND ABANDONMENT

PART 30 GENERAL

1.1 DESCRIPTION

- A. The Contractor shall furnish all tools, equipment, materials, and supplies and shall perform all labor as required for the demolition, abandonment, or removal of pavements and structures and utility removals and abandonments, as indicated on the Drawings and as specified herein.
- B. The Work of this Section shall include, but shall not be limited to the following items:
 - 1. Demolition of asphalt pavement, concrete structures, concrete pavement, curb, gutter, sidewalk, underground piping, and other features as required to install utilities, structures, concrete pavement and asphalt pavement.
 - 2. Salvage of existing materials and equipment for reuse, including fire hydrants, water service boxes, water meters.
 - 3. Abandonment or removal of existing pipe and other utilities as indicated on the Drawings and specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02 01 00 - Site Conditions
- B. Section 02 01 10 - Existing Utilities and Underground Structures
- C. Section 31 00 00 - Earthwork

1.3 DEMOLITION/ABANDONMENT COORDINATION

- A. The Contractor shall anticipate and coordinate construction demolition and improvement as shown on the Drawings and described in the Construction Documents.
- B. The Contractor shall carefully coordinate the extent of the Work in areas where existing utilities shall be reconnected to new facilities and where existing facilities shall remain operational.
- C. While Work is being performed, the Contractor shall provide adequate access for normal operations, including access, routine operation and maintenance. The Contractor shall erect and maintain fences, warning signs, barricades, and other devices as required for the protection of the Contractor's and City's employees and the public around pipelines, structures and excavations. The Contractor shall remove all such protection when the demolition/abandonment operations are completed, or as Work progresses, or when directed by the Engineer or City.
- D. The Contractor shall coordinate all Work with the Engineer or City.
- E. The Contractor shall be responsible for scheduling and coordinating any required shut down and/or relocations as necessary for performance of the work.

1.4 SUBMITTALS

- A. Demolition and Abandonment Plan: The Contractor shall prepare and submit a Utility Demolition and Abandonment Plan to the Engineer for review at least 14 days prior to start of demolition. The procedures shall provide for safe conduct of the Work, careful deactivation, removal and disposition of materials and equipment, protection of property which are to remain

undisturbed, coordination with existing facilities to remain in service, and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operation.

1.5 REPAIR OF DAMAGE

- A. Any damage to existing street improvements, utility poles, building elements to remain, other existing utilities and facilities to remain, and private property, as caused by the Contractor's operations shall be repaired at the Contractor's expense to the satisfaction of the Engineer.
- B. Damaged items shall be repaired or replaced with new materials as required to restore damaged items or surfaces to a condition equal to and matching that existing prior to damage or start of Work of this Contract.

1.6 PROTECTION OF EXISTING FACILITIES

- A. Before beginning any cutting, trenching, demolition or abandonment Work, the Contractor shall carefully inspect the existing facilities to determine the extent of the Work. The Contractor shall take all necessary precautions to prevent damage to existing facilities which are to remain in place and in operation. The Contractor shall be responsible for any damages to existing facilities, which are caused by the operations of the Contractor. Damages to such facilities shall be repaired or replaced to existing condition at no additional cost to the City and to the satisfaction of the Engineer. The Contractor shall carefully coordinate the Work of this Section with all other Work and shall provide shoring, bracing, and supports, as required. The Contractor shall ensure that structural elements are not overloaded and shall be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition Work performed under any part of this Contract. The Contractor shall remove all temporary protection when the Work is complete or when so authorized by the Engineer.
- B. The Contractor shall carefully consider all bearing loads and capacities for placement of equipment and material.

PART 31 PRODUCTS (NOT USED)

PART 32 EXECUTION

1.1 DEMOLITION AND ABANDONMENT OF FACILITIES

- A. Demolition shall be accomplished in accordance with applicable codes and regulations. Blasting shall not be permitted.
- B. Disposal of all materials shall be performed in compliance with all applicable local, state and federal codes, regulations, and requirements. Structures to be abandoned shall be cleaned prior to abandonment.
- C. The Drawings used in this Contract to indicate demolition, abandonment and salvage are based on Record Drawings and the best available information on the existing facilities. The structures and utilities may differ slightly. Prior to the submittal of bids, the Contractor shall conduct a comprehensive survey of the facilities to verify the scope of Work, the extent of utilities, and the physical sequencing constraints.
- D. The Contract Drawings define the minimum portion of the structures to be removed. Unless otherwise shown on the Drawings, the Contractor may make rough cuts or breaks that exceed the limits of demolition shown.

- E. All debris, materials, piping, and miscellaneous waste products 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 local regulations. The Contractor is responsible for determining and complying with these regulations and shall bear all costs associated with disposal of these items.
- F. All equipment, materials, and piping within the limits of the demolition shall become the property of the Contractor, unless noted otherwise on the Drawings, and shall be removed from the site.
- G. No toxic or hazardous materials are anticipated for demolition or removal. If these or questionable substances are found during the demolition process, report the condition immediately to the Engineer in writing.

1.2 UTILITIES

- A. The utilities on site are potable water, gas, sanitary sewer, communications, electricity and storm drains.
- B. The Contractor shall be responsible for coordinating all utility service shut-downs with the City or City's Representative before demolition is started.
- C. Where utility lines that are abandoned or are designated for abandonment are exposed by demolition excavation or in conflict with new improvements, they shall be removed.
- D. Piping to be slurry filled, plugged and abandoned shall be done so in accordance with City of Sebastopol Standards and these Contract Documents.
- E. All utilities designated to remain in service shall remain in service for the duration of the work.
- F. Salvage utility facilities for reuse where designated on the Drawings. Store in a safe and protected location until reinstalled. The Contractor shall be responsible for any damages to these facilities. Damages to such facilities shall be repaired or replaced with new at no additional cost to the City and to the satisfaction of the Engineer.

1.3 PAVING DEMOLITION

- A. Asphalt concrete and armor coats shall be saw cut with a suitable tool before excavation. For all roads and paved areas, saw cutting shall be required. Breaking of asphalt, concrete, or armor coats with jack hammers or excavation equipment will not be permitted.
- B. All edges of asphalt concrete or armor coats shall be cut four (4) inches vertically, with a neat, square edge.
- C. In all cases, existing asphalt paving or armor coating shall be saw cut out after construction and just prior to final paving to a point twelve (12) inches or more wider than each side of the trench line. Saw cuts shall be parallel or perpendicular to centerline of the trench. Any strip of existing pavement with a width of four (4) feet or less shall be removed and replaced with new pavement.
- D. The Contractor shall dispose of all Portland cement concrete and asphalt concrete generated from removal or demolition activities on the project at a recycler for these materials. The Contractor shall provide receipts verifying delivery and approximate quantity (TONS) of the material delivered to the material recycler.

1.4 PROTECTED AREAS

- A. The existing structures not designated for removal, along with its associated utilities and landscaping, shall remain in place, in service and accessible to employees. The Contractor shall exercise caution when working near these structures. Any damage to this building, surrounding landscaping, or paved areas shall be repaired or replaced to original pre-contract conditions at the Contractor's sole expense. The Contractor is responsible for providing any temporary access as required for this facility.
- B. All other areas of the site not within the limits of demolition and grading shown on the Drawings shall be left undisturbed. Any damage to these areas during the demolition or construction process shall be repaired or replaced to original pre-contract conditions at the Contractor's sole expense. Disturbed areas, not within the demolition and grading limits shown on the Drawings, shall be reseeded.

1.5 BACKFILLING

- A. The Contractor shall backfill all demolition areas to final grade with appropriate fill material as shown on the Drawings and described in these Specifications.
- B. Backfill material shall meet the applicable requirements of Section 31 00 00, "Earthwork." In all areas not immediately backfilled to ground level, the Contractor shall erect safety barriers around the excavation.

END OF SECTION

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 33 GENERAL

1.1 SUMMARY

- A. Section Includes:**
1. **Cast-in-place concrete.**

1.2 SYSTEM DESCRIPTION

- A. This section includes requirements for cast-in-place concrete for valve boxes, monument boxes, and cast-in-place concrete for thrust blocks, curbs, gutters, and sidewalks.

1.3 SUBMITTALS

- A.** Submit all product data, shop drawings, laboratory test results, material source information, and certificates of compliance listed in this Section under a single submittal cover for review.
- B.** Product Data: Indicate admixtures
- C.** Design Data: Submit mix designs

1.4 QUALITY ASSURANCE

- A.** Perform cast-in-place concrete work in accordance with ACI 301.
- B.** Sustainable Design Requirements:
1. **Regional Materials:** Furnish materials extracted, processed, and manufactured within 500 miles of Project site.
- C.** Perform Work in accordance with State of California standards.
- D.** Maintain one copy of each document on site.

PART 34 PRODUCTS

1.1 CONCRETE MATERIALS

- A.** Cement: ASTM C150, Type II Portland type.
- B.** Fine and Coarse Aggregates: ASTM C33.
- C.** Water: Clean and not detrimental to concrete.
- D.** Air Entrainment Admixture: ASTM C260.
- E.** Bonding Agent: Epoxy Type.
- F.** Non-shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.

1.2 COMPOUNDS, HARDENERS AND SEALERS

- A. Curing Compound: ASTM C309, Type 1 Class B.

1.3 CONCRETE MIX

- A. Mix and deliver concrete in accordance with ASTM C94/C94M, Option A.
- B. Furnish concrete of the following strength:
 - 1. Compressive strength 4,000 psi (28 day).
 - 2. Slump 1 to 4 inches.
 - 3. Maximum water-cement ratio: 0.48.
- C. Select admixture proportions for normal weight concrete in accordance with ACI 301.
- D. Add air entraining agent to concrete mix for concrete work exposed to exterior.
- E. Concrete for curb, gutter and sidewalk to contain 1 pound lampblack per cubic yard.

PART 35 EXECUTION

1.1 PLACING CONCRETE

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.
- B. Separate slabs-on-grade from vertical surfaces with ¼ inch thick joint filler, extended from bottom of slab to within ¼ inch of finished slab surface.
- C. Place concrete continuously between predetermined expansion, control and construction joints.

1.2 FORM REMOVAL

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- B. Remove formwork progressively and in accordance with code requirements.

1.3 CURING AND PROTECTION

- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Immediately after placement, protect concrete from premature drying.
- C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete for not less than 7 days.

1.4 FIELD QUALITY CONTROL

- A. Perform field inspection and testing in accordance with ACI 301.
- B. Strength Test Samples:
 - 1. Sample concrete and make one set of three cylinders for every 150 cu yds or less of each class of concrete placed each day and for every 5,000 sf of surface area for slabs and walls.

- C. Field Testing:
 - 1. Measure slump and temperature for each compressive strength concrete sample.
 - 2. Measure air content in air entrained concrete for each compressive strength concrete sample.

- D. Cylinder Compressive Strength Testing:
 - 1. Test Method: ASTM C39/C39M.
 - 2. Test Acceptance: In accordance with ACI 301.
 - 3. Test two cylinders at 28 days.
 - 4. Retain one cylinder for testing when requested by Architect/Engineer.
 - 5. Dispose remaining cylinders when testing is not required.

1.5 DEFECTIVE CONCRETE

- A. Modify or replace concrete not conforming to required lines, details and elevations, as directed by Architect/Engineer.

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SECTION 31 00 00

EARTHWORK

PART 36 GENERAL

1.1 DESCRIPTION

- A. Earthwork shall consist of performing all operations necessary for excavation, subgrade preparation and grading where applicable.
- B. Excavation and grading within the City of Sebastopol shall conform to this specification and the applicable provisions of City of Sebastopol Grading Ordinance.
- C. All work shall conform to the lines, grades and cross-sections or elevations shown on the Drawings.
- D. Prior to bid, Contractor shall verify existing topography and notify Engineer of any discrepancy between existing topographic information indicated on the plans and actual field topographic data. Failure to notify Engineer of any discrepancy prior to bid indicates Contractor acceptance of existing conditions in conformance with those shown on the Plans.
- E. Groundwater may be present at varying depths. Seasonal fluctuations in the local groundwater table at the project site and vicinity are generally highest at the end of the winter rainy season and lowest at the end of the summer dry season. The Contractor should expect groundwater and soil moisture conditions within the project area to vary depending on seasonal rainfall and runoff conditions. Groundwater may be present close to the ground surface during prolonged wet winter weather. Groundwater will drop during dry summer and fall weather.
- F. Existing power and telephone lines, trees, fences, pipelines or other conduits, embankments, and structures in the vicinity of the work that are to remain shall be supported and protected from injury by the Contractor during the construction and until the completion of the Work. The Contractor shall be liable for all damages to such structures, as herein provided, and shall save and keep the City and Engineer harmless from any liability or expense for injuries, damages, or repairs to same.
- G. Excess material from the excavation shall become the property of the Contractor and shall be disposed of by him at his expense.
- H. Related items described elsewhere:
 - 1. Section 02 01 00 - Site Conditions
 - 2. Section 02 01 10 - Existing Utilities and Underground Structures
 - 3. Section 31 23 19 - Dewatering
 - 4. Section 31 01 40 - Shoring and Trench Safety
 - 5. Section 31 23 00 - Trench Excavation and Backfill
 - 6. Section 32 12 16 – Hot Mix Asphalt Paving

1.2 QUALITY ASSURANCE

- A. Qualifications of workmen: Provide sufficient skilled workmen and supervisors who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of construction involved and the materials and techniques specified.
- B. Codes and Standards:
 - 1. Wherever a test method is referenced in this Section it shall be made in accordance with the most current test methods in use by the California Department of Transportation

(Caltrans) as listed in the State Standard Specifications, latest edition, or ASTM method as listed below at the City's option:

TEST	TEST METHOD
Particle-Size Analysis of Soils	ASTM D422
Density of Soil in Place by Sand Cone Method	ASTM D1556
Moisture-Density Relations of Soil & Soil Aggregates	ASTM D1557
Unconfined Compressive Strength of Cohesive Soil	ASTM D2166
Laboratory Determination of Water Content of Soil & Rock	ASTM D2216
Classification of Soils for Engineering Purposes	ASTM D2487
Resistance R-Value and Expansion Pressure of Compacted Soils	ASTM D2844
Density of Soil and Soil-Aggregate in Place by Nuclear Methods	ASTM D2922
Density of Soil in Place by the Drive-Cylinder Method	ASTM D2937
Direct Shear Test of Soils Under Consolidated Drained Conditions	ASTM D3080
Liquid Limit, Plastic Limit, & Plasticity Index of Soils	ASTM D4318
Expansion Index of Soils	ASTM D4829

2. Where reference is made to the State Standard Specifications, reference shall mean the State of California, Department of Transportation (Caltrans), Standard Specifications, 2018, excluding measurement and payment Sections.

1.3 TESTING

- A. Relative compaction, moisture, and permeability tests will be made at locations determined by the Engineer. When tests indicate that the specified compaction has not been achieved, that portion of the Work shall be reworked until the required density, moisture, and permeability has been attained.
- B. The Contractor shall be responsible for the sampling and testing costs associated with any failed test.
- C. The Contractor shall be responsible for the sampling and testing costs associated with soil disposal requirements for soils that are not determined to be contaminated.
- D. A minimum of 72 hours' notice shall be given to the Engineer by the Contractor prior to commencing or recommencing any grading operation.

1.4 SUBMITTALS

- A. Submit all product data, shop drawings, laboratory test results, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.
- B. Samples: In accordance with the provisions of Section 01 33 00, "Submittal Procedures," of the specifications, submit samples of all materials 15 days prior to construction. Periodic testing of the material will also be made during construction.
- C. Product Data: submit data for geotextile fabric indicating fabric properties, test methods, and manufacturer's installation instructions.
- D. Material Source: Submit name of imported fill materials supplied.
- E. Manufacturer's Certificate: Submit Certifications that products meet or exceed specified requirements.

PART 37 PRODUCTS

1.1 TOPSOIL AND UNDOCUMENTED FILL

- A. Topsoil is classified as the top three inches of excavated material including buried organics, shallow vegetation roots and other deleterious materials and excluding cleared and grubbed materials.
- B. Undocumented fill pertains to soils previously imported and placed at the project site.

1.2 GENERAL FILL MATERIAL

- A. Shall be non-expansive and free of organic material, with a Liquid Limit less than 40 and a plasticity index less than or equal to 15 percent as determined by ASTM D4318, shall not contain clumps/rock larger than 3 inches, and should consist predominantly of materials less than 1/2 inch in greatest dimension.
- B. Existing material excavated on site may be used as fill provided it meets the requirements of subparagraph 2.3.A, after vegetative matter, rocks larger than 3 inches, and other debris is removed and after approval by the Engineer.
- C. All on-site and off-site sources of fill shall be approved by the Engineer a minimum of 2 working days prior to placement or importation to the site.

1.3 ENGINEERED FILL

- A. Material specified in paragraph 2.2, except that potentially expansive soils shall not be used as engineered fill within the top 60 inches of subgrade beneath lightly loaded structures, concrete slabs and paving.
- B. Standard Specifications, Section 26, Class 2, 3/4-inch maximum.

1.4 STRUCTURAL AGGREGATE

- A. Structural aggregate material shall consist of washed angular aggregate with the following ASTM D422 test particle size distribution:

Sieve Size	Percent Passing
3/4 Inch	100%
No. 4	0-5%
No. 200	0-3%

1.5 PIPE BEDDING MATERIAL

- A. Pipe bedding material shall be as specified on  Standard Drawing No. R-1.4.

1.6 TRENCH BACKFILL MATERIAL

- A. The following materials may be used as Trench Backfill Material:
 - 1. Engineered Fill Material.
 - 2. Standard Specifications, Section 26, Class 2, 3/4-inch maximum.
- B. The following materials shall be used as Trench Backfill Material in roadway areas:
 - 1. Standard Specifications, Section 26, Class 2, 3/4-inch maximum.

1.7 PERMEABLE MATERIAL

- A. State Standard Specification Section 68.2.02F(3), Class 2.

1.8 AGGREGATE SUBBASE

- A. Standard Specifications, Section 25, Class 2.

1.9 AGGREGATE BASE

- A. Standard Specifications, Section 26, Class 2, 3/4-inch maximum.

1.10 SAND

- A. Standard Specifications, Section 19-3.02E(2), Salt Free.

1.11 SLURRY CEMENT BACKFILL

- A. Standard Specifications, Section 19-3.02D.
- B. Materials for controlled low strength material shall be thoroughly machine-mixed in a pug mill, rotary drum, or other approved mixer. Mixing shall continue until the cementitious material and water are thoroughly dispersed throughout the material.
- C. Slurry Cement Backfill shall be used as backfill only where shown on the Drawings or as directed by the Engineer.
- D. When used as bedding around new electrical conduits the mix shall contain 1 sack of red dye per cubic yard.

1.12 SUBGRADE STABILIZATION FABRIC

- A. Standard Specifications, Section 88-1.02O, Class B1.

1.13 FILTER FABRIC

- A. Standard Specifications, Section 88-1.02B, Polypropylene, Class B.

PART 38 EXECUTION

1.1 GENERAL

- A. Verify exact location (horizontal and vertical) of all utilities by potholing prior to the start of excavation.
- B. All active portions of the construction site and material excavations shall be sufficiently watered to prevent excessive amounts of dust. Watering shall occur at least twice a day with complete coverage, preferably in the late morning and after work for the day.
- C. All grading, earthmoving and excavation shall cease during periods of winds greater than 20 miles per hour average over a one hour period.
- D. All material transported offsite shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- E. Areas disturbed by earthmoving or excavation activities shall be minimized at all times.

1.2 CLEARING AND GRUBBING

- A. Clearing and grubbing shall conform to Section 31 11 00, "Site Clearing and Grubbing."

1.3 TOPSOIL EXCAVATION

- A. Remove all topsoil and organics.
- B. Material specified in Paragraph 2.1 shall be removed before commencement of any excavation. Do not use this material for fill or backfill, except as approved by the Geotechnical Engineer. Topsoil shall be removed from the site at the Contractor's expense or amended and reused as fill in landscaped areas.

1.4 DISPOSAL OF WASTE MATERIAL

- A. Burning is prohibited. Remove unsuitable material from the site in accordance with all local laws, codes and ordinances.
- B. Existing clean suitable fill material may be stockpiled at a designated location on site after approval by the Engineer.

1.5 COMPACTION EQUIPMENT

- A. Compaction Equipment: All compaction shall be by mechanical means. Compaction equipment shall be of suitable type and adequate to obtain the densities specified and approved.

1.6 SITE EXCAVATION

- A. Perform all excavation of every description, regardless of the type, nature, or condition of material encountered, as specified, shown, or required to accomplish the Work.
- B. The Contractor shall control excavations and stockpiling in a manner to prevent water from entering the excavations. Material for fill, backfill, or for protection of excavations from surface drainage shall be neatly placed and kept shaped and covered so as to cause no dust or interference with other work.
- C. The Geotechnical Engineer shall observe all excavated bottoms, including foundations and utility structures and trenches, following removal of material. Unsuitable materials observed by the Geotechnical Engineer in the excavated bottom shall be removed by the Contractor and stabilized using Engineered Fill material, as specified in Paragraph 2.3.

1.7 STRUCTURAL EXCAVATION

- A. Excavation is unclassified. Excavate for structures to the lines and grades shown or as required to accomplish the Work. Perform all excavation regardless of the type, nature, or condition of the material encountered. Shore and brace (e.g., driven sheet piles, trench bracing) excavations as required. Protect adjacent utility facilities to remain. Remove all debris and sort material to be reused as Engineered Fill. The method of excavation used is optional; however, no heavy equipment shall be operated within 4 feet of existing structures or newly completed construction, except as approved. Excavation that cannot be accomplished without endangering existing or new structures shall be performed with hand tools. All benching, shoring and sloping of excavations shall be at the Contractor's expense.

1.8 REMOVAL OF WATER

- A. See Section 31 23 19 – Dewatering.
- B. Water disposal shall meet Federal, State, and local requirements and as specified.

1.9 SUBGRADE STABILIZATION

- A. Any base or soft areas shall be brought to the attention of the Geotechnical Engineer for evaluation of over-excavated depth and stabilized. If unsuitable materials are observed within the excavation bottom by the Geotechnical Engineer over-excavation will be required.
- B. Areas receiving fill shall be prepared according to the following, unless noted otherwise on the Drawings:
 - 1. Scarified to a depth of at least 6-inches.
 - 2. Moisture conditioned to within 2 percent of optimum moisture content.
 - 3. Compacted to at least 90 percent relative compaction.

1.10 OVER EXCAVATION

- A. If groundwater or excessive soil moisture prevents operations described in 3.9.B, the bottom of the excavation may require overexcavation and a layer of aggregate base placed on the excavation bottom to provide a firm base on which to place and compact subsequent fill. The thickness of the aggregate base layer and/or need for subgrade stabilization fabric shall be evaluated by the Geotechnical Engineer at the time of excavation.
- B. If the bottom of an excavation is found to consist of soft or unstable material that is incapable of properly supporting the pipe or structure, the Engineer shall be advised immediately in writing.
- C. The Contractor shall obtain the Engineer's approval prior to performing any overexcavation. Any overexcavating and resultant backfill and compaction without such approval shall be at the Contractor's expense. The quantity of approved unsuitable material excavated and its replacement shall be paid for as extra work only with the authorization of the Engineer and in accordance with the Contract Documents.

1.11 ROCK EXCAVATION

- A. Rock excavation shall include removal and disposal of the following: (1) all boulders measuring 1/3 of a cubic yard or more in volume; (2) all rock material in ledges, bedding deposits, and unstratified masses; (3) concrete or masonry structures which have been abandoned; and (4) conglomerate deposits which are so firmly cemented that they possess the characteristics of solid rock.
- B. Rock excavation is not anticipated for this project.
- C. Explosives and Blasting: Use of Explosives and Blasting will not be permitted.

1.12 MOISTURE CONDITIONING

- A. The term "moisture conditioning" as used in these Specifications, is defined to refer to any approved method of obtaining a required moisture content for materials to be compacted. Included under moisture conditioning requirements shall be the furnishing of all required water and the furnishing of all other necessary labor, materials and equipment required to provide the approved or required percent of moisture content. Moisture conditioning, as required, shall be performed for all materials specified to be compacted regardless of whether or not such requirement is specifically stated. No separate payment will be made for any or all operations of the Contractor pertaining to moisture conditioning or from delays occasioned thereby.
- B. Prior to and during compaction, all earthwork materials specified to be compacted, including but not limited to backfill, refill and foundation subgrade, shall have an approved moisture content which shall be uniform in each layer of material compacted. If the moisture content is less than the approved requirement, compaction operations shall not proceed until the Contractor has added the necessary amount of water. If the moisture content is greater than

the approved requirement, compaction operations shall not proceed until such time as the materials have dried sufficiently or have been otherwise mechanically dewatered or replaced with materials having the approved moisture content. The soil should be mixed after water is added to distribute the water evenly throughout the lift. Sufficient time should be allowed between water application and compaction to allow the water to penetrate the soil clods and reach a uniform value in the lift. If the soil is too moist, aeration will be required to lower moisture content to the desired level.

- C. Contractor shall be responsible to demonstrate throughout the duration of all earthwork operations, that required moisture conditioning limits are being obtained. Care must be exercised to ensure that the moisture content is not above moisture requirements. This is to ensure that the structural stability of the material is not affected.
- D. For general engineered fill construction, the following compaction requirements apply:
 - 1. Maximum 8-inch lifts of uncompacted thickness.
 - 2. Compact to a minimum 90% relative compaction at, or within, 2 percent of the ASTM D1557 optimum moisture content.
 - 3. Within the upper 12 inches of subgrade, compact to a minimum 95% relative compaction at, or within, 2 percent of the ASTM D1557 optimum moisture content.

1.13 SITE GRADING

- A. Perform all earthwork to the lines and grades as shown and/or established by the Engineer. Shape, trim, and finish slopes to conform to the lines, grades, and cross sections as shown or approved. Make slopes free of all exposed roots and stones exceeding 3 inches in diameter which are loose and liable to fall. Round tops of banks to circular curves, in general, not less than a 6-foot radius. Rounded surfaces shall be neatly and smoothly trimmed.
- B. Work that has been suspended by weather, scheduling or for any other reason, shall be protected against the effects of such weather or other conditions. Grading which has been considered acceptable, but which has been subsequently damaged shall be re-worked to meet the requirements of the Specifications.
- C. Slopes shall be re-dressed as required to mitigate any erosion that may occur prior to establishment of the erosion control mitigation measures.
- D. All grades shown on the Plans are expressed as finished elevations.

1.14 CUT SLOPES AND FILL SLOPES

- A. Permanent cut and fill slopes shall be constructed no steeper than 3H:1V. Fill slopes shall be constructed beyond planned grades and trimmed back to expose form compacted soil.
- B. Where fills are placed on existing slopes that exceed 5H:1V, the fills shall be keyed and beveled into the existing slope.

1.15 CONCRETE SLABS ON GRADE

- A. Excavate to subgrade, scarify 6-inches and compact to at least 90% of the ASTM D1557 maximum dry density with a moisture content within 2 percent of the ASTM D1557 optimum moisture content.
- B. Install structural aggregate layer to the thicknesses shown on the Drawings and compact to a minimum of 90 percent of the ASTM D1557 maximum dry density with a moisture content within 2 percent of the ASTM D1557 optimum moisture content.

1.16 HOT MIX ASPHALT PAVEMENT

- A. Excavate to subgrade, scarify 12-inches and compact to at least 95% of the ASTM D1557 maximum dry density with a moisture content within 2 percent of the ASTM D1557 optimum moisture content.
- B. Evaluate the stability of the compacted subgrade soil by wheel rolling prior to placing the overlaying aggregate base rock layer. Wheel rolling should be performed with a fully loaded water truck with tire pressures between 60 and 95 psi. The subgrade soil should exhibit only minor deflections as the wheel load passes by. Any unstable areas should be reworked and then retested for relative compaction and moisture content and then proof rolled again.
- C. Place aggregate base in 6-inch loose lifts and compact each lift to at least 95% of the ASTM D1557 maximum dry density with a moisture content within 2 percent of the ASTM D1557 optimum moisture content.

1.17 CONTAMINATED SOILS HANDLING

- A. Contaminated soils are not anticipated to be encountered during construction.
- B. If contaminated soil is discovered during construction activities, notify the Engineer, City, and upon approval from the City, notify the Sebastopol Fire Department.
- C. Contractor to maintain separate stockpiles for potentially contaminated soil such that potentially contaminated soil is not commingled with non-contaminated soil.
- D. Contractor to prepare a 10-mil, polyethylene plastic sheeting lined containment area for stockpiling and covering of potentially contaminated soils. Overlap the plastic sheeting a minimum of two feet to prevent run off underneath the plastic sheeting.
- E. Collect soil samples to fully characterize excavated soil for disposal and manage accordingly. Sample, according to protocols set forth in ASTM E1903-97, Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process, any soils generated as a result of excavations in these areas, as well as the bottoms and side walls of any such excavations.
- F. Contractor to hire a California-certified laboratory to sample and test the potentially contaminated soil in accordance with sampling requirements of the nearest Class II or III landfill that accepts contaminated soils, or other type of disposal means preapproved by the City, as laboratory results indicate. In general, for gasoline and diesel contaminated soils, this includes the collection of one 4-point composite for every 100 cubic yards of excavated contaminated soil, and analysis for TPH-gas and TPH-diesel by EPA 8015, and for volatile organic compounds by EPA 8260.
- G. Should the laboratory testing confirm the presence of contaminated soil, submit test results and any additional reporting requirements to the Class II or III landfill at least three working days prior to the planned disposal date.
- H. Upon review of the test results, the Class II or III landfill will determine if the contaminated soil may be disposed of at the facility.
- I. If the test results exceed the acceptance limits of the Class III landfill, Contractor shall submit test results and any additional reporting requirements to the nearest Class II landfill.
- J. Upon review of the test results, the Class II landfill will determine if the contaminated soil may be disposed at the facility or if additional testing is required.

- K. If additional testing is necessary, Contractor shall hire a California-certified laboratory to sample and test the contaminated soil in accordance with the additional sampling requirements.
- L. If characterization determines that wastes are hazardous under RCRA or CalEPA Hazardous Waste guidelines, treat and/or dispose of all contaminated soils at properly permitted facilities approved by the City and all other controlling regulatory agencies for such purposes.
- M. Complete disposal facility applications as necessary to obtain preapproval for disposal of all contaminated soil.

1.18 ADDITIONAL EXCAVATION IF CONTAMINATION IS DISCOVERED

- A. If contaminated soil is discovered during construction activities, notify the Engineer or City, and upon approval from the City, notify the Sebastopol Fire Department.
- B. Call upon an OSHA-certified, trained personnel, experienced in identifying unknown contaminants (such as a Professional Geologist or Registered Civil Engineer) to collect confirmation samples. Identify possible contaminated areas, and notify the Engineer or City. If warranted or directed by the Sebastopol Fire Department, Engineer, or City, perform additional remedial excavation of soil and collect confirmation soil samples.
- C. In areas where additional remedial excavation is required, complete excavation and backfilling as requested by the Engineer, City, or trained personnel prior to continuing with project.
- D. If additional soils are excavated, follow the same protocol for stockpiling, characterizing, reloading, and disposal as described in other sections of this specification.
- E. This work will be completed as an extra scope, once total contaminated soil exceeds estimations for the project.

1.19 DISCOVERED CONTAMINATION NOT PREVIOUSLY KNOWN TO EXIST

- A. If contaminated soil is discovered where not expected and contaminants cannot be identified, call upon an OSHA-certified, trained personnel experienced in identifying unknown contaminants (such as a Professional Geologist/Engineer) to collect samples and field identify possible contaminated areas.

1.20 WASTE MINIMIZATION

- A. Minimize the generation of contaminated waste. Take all necessary precautions to avoid mixing clean and contaminated wastes.

1.21 CONTAMINATED MATERIAL STORAGE AREA MAINTENANCE

- A. When contaminated materials are present and require stockpiling, complete the following tasks:
 1. Stockpile Site Locations
 2. Liner Maintenance: Maintain a stockpile area bottom to prevent tears or holes in the plastic. Any tears shall be patched or the area relined with 10-mil plastic within 24 hours. Sweep clean roadways leading to stockpile areas and repair all surface damage caused by the stockpile traffic.
 3. Dust Control: Control all dust that may arise during stockpiling activities by keeping roads swept or wet, as necessary.
 4. Conduct: All activities will be conducted in a manner that minimizes litter, nuisances, dust, noise impacts, and mud.
 5. Access: Unauthorized access will be prevented within potentially contaminated soil areas.

6. Traffic Control: Traffic will be controlled in a safe manner.
7. Emergency Communications: The Contractor using the stockpile area shall provide telephone or radio communication capacity for emergency purposes.
8. Record Keeping: Maintain a log book in which storage dates, quantity of material accepted and leaving, and concentrations of constituents are tracked and any special occurrences such as written public complaints will be recorded.
9. Length of Use/Site Closure: When Contractor completes the use of the stockpile area, he shall ensure the area is clean of any potentially contaminated soils and have approval from City prior to leaving the site.

1.22 TRANSPORTATION OF CONTAMINATED SOIL

- A. With preapproval from the City and the disposal facility, reload, transport, and dispose of contaminated materials in accordance with all local, state, and federal laws, rules, and regulations for transporting contaminated soil.
- B. Contractor shall arrange the hauling and disposal of the contaminated soil at the accepted landfill licensed to accept such soil.
- C. Transport all contaminated soil off site only to appropriate permitted Treatment and/or Disposal Facilities, approved by the City. The Contractor performing the work of this Section shall be licensed for the transportation and hauling of hazardous wastes. The firm shall provide a route plan, which clearly identifies the routes he proposes to follow while transporting soil to the off-site disposal facility.
- D. Compliance with Federal Motor Carrier Safety Regulations: A motor carrier driver or other person must comply with the rules when he/she is transporting hazardous materials by a motor vehicle, which must be marked or placarded in accordance with DOT 177.823.
- E. Transport drivers will offload soil only at the approved disposal facilities.
- F. Ensure contaminated soil is free of debris, concrete, or asphalt rubble. Ensure no free water is ponding or leaking from trucks.

1.23 REPORT, MANIFESTS, AND RECORDS

- A. Provide the Engineer or City with a compliance certificate verifying that all waste soils were received by the approved landfill has been properly disposed.
- B. Provide copies of all manifests, permits, or other documents currently in effect relating to the specific wastes to be transported, treated, and disposed hereunder except as otherwise stated in this Section.
- C. As the waste generator, the City shall furnish completed State of California Hazardous Waste Manifests (or the Uniform Manifest - 40 CFR Parts 260, 262, 271 - if effective at time of preparation) for all contaminated soils to be removed from the project area for transportation to an appropriate disposal facility. These manifests shall accompany the waste loads to disposal and be properly completed by the hauler and disposal agent as required by federal and state hazardous waste management law. The final manifest shall then be returned by registered mail to the City within the designated time period specified by federal law.
- D. The contract work will not be considered complete nor will the City make final payment until the Engineer or City receives certifications of treatment and/or disposal.

1.24 NON-CONTAMINATED SOIL REUSE

- A. Soil containing very low levels of contamination may be considered for reuse as backfill, but must be cleared with the Sebastopol Fire Department and Engineer or City for reuse, prior to reuse.
- B. Non-contaminated soil may be reused for backfill, if preapproved by the Engineer or City, and is permitted in other sections of the specifications.

1.25 DISPOSAL OF UNSUITABLE AND EXCESS EXCAVATED MATERIAL

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off project site.
- B. Location of disposal site and length of haul are the Contractor's responsibility.
- C. Soil characterization testing required for hauling and off-site disposal or reuse of excess excavated material are the Contractor's responsibility.
- D. Place excess excavated materials suitable for fill and/or backfill on site where directed by Engineer.
- E. Remove from site and dispose of any excess excavated materials after all fill and backfill operations have been completed.
- F. Segregate all excavated contaminated soil designated by the Engineer from all other excavated soils, and stockpile on site on two 6 mil polyethylene sheets with a polyethylene cover. A designated area shall be selected for this purpose. Provide and maintain temporary erosion controls on and around soil stockpiles until they are removed from site. Dispose of excavated contaminated material in accordance with State and Local requirements.

1.26 CLEAN UP

- A. Upon completion of earthwork operations, clean areas within contract limits, remove tools, and equipment. Provide site clear, clean, free of debris, and suitable for subsequent construction operations. Remove debris, rubbish, and excess material from the site.

END OF SECTION

SECTION 31 01 40

SHORING AND TRENCH SAFETY

PART 39 GENERAL

1.1 SECTION INCLUDES

- A. Shoring required for general safety, worker protection, and protection of adjacent property from the hazards of caving ground.
- B. Shoring for trench excavations.
- C. Shoring for structural excavations.
- D. Contractor's responsibilities.
- E. Contractor's trench safety plan.
- F. Contractor's supervisor.
- G. Related requirements and Work described elsewhere includes:
 - 1. Division 01 – Requirements for temporary facilities, controls, public safety, and convenience.
 - 2. Division 02 – Existing Conditions.
 - 3. Division 31 – Earthwork.
 - 4. Division 33 – Utilities.

1.2 CONTRACTOR'S RESPONSIBILITIES FOR SAFETY

- A. The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons (including employees) and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours.
- B. Safety provisions shall conform to U.S. Department of Labor (OSHA), the California Occupational Safety and Health Act, and all other applicable Federal, State, county, and local laws, ordinances, codes, the requirements set forth below, and any regulations that may be detailed in other parts of these Specifications.
- C. Contractor is advised that Part 1926 of 29 CFR, subpart P, has been revised. This regulation governs excavations, trenching and protective systems, sloping, benching, wood, and aluminum shoring for various types of soils, and depths of excavations. The Contractor shall follow these regulations (including the latest revisions) for this project.
- D. Where any of these are in conflict, the more stringent requirement shall be followed.

1.3 PERMIT

- A. For trenches or excavations of depth five (5) feet or deeper, the Contractor shall obtain from the State Division of Industrial Safety a permit for such excavation; submit a copy of the permit to the Engineer, prior to initiating any work requiring said permit.

1.4 CONTRACTOR SUBMITTALS

- A. Submit all plans, product data, shop drawings, laboratory test results, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.
- B. The Contractor's attention is directed to the provisions for "Shoring and Bracing Drawings" in Section 6705 of the California Labor Code. The Contractor, prior to beginning any trench or structure excavation five (5) feet deep or greater, shall submit to the Engineer for review for compliance with Section 6705 the Contractor's detailed plan showing design of all shoring, bracing, sloping of the sides of excavation, or other provisions for worker protection against the hazard of caving ground during the excavation of such trenches or structure excavation. If such plan varies from the shoring system standards established in the Construction Safety Orders of the State of California, such alternative system plans shall be prepared, stamped and signed by a civil or structural engineer licensed in the State of California at the Contractor's expense.
- C. Certificates of Compliance: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.
- D. For all materials that are not pre-approved by the City the Contractor shall designate the source and/or submit samples of all materials in advance of their use for required testing and Engineer's approval. All testing costs shall be at the Contractor's expense.

1.5 SAFETY ORDERS

- A. The Contractor shall have at the work site, copies or suitable extracts of the Construction Safety Orders of Cal-OSHA, and Part 1926 of 29 CFR, subpart P.
- B. All work shall comply with the provisions of these and all other applicable laws, ordinances and regulations.

1.6 TRENCH SAFETY PLAN

- A. For trenches and excavations five feet or more in depth, the Contractor shall submit to the Engineer a detailed plan, design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazards of caving ground.
- B. If such plan varies from the shoring system standards established by the Construction Safety Orders, or Part 1926 of 29 CFR, Subpart P, the plan shall be prepared, sealed and signed by a civil or structural engineer registered in California. Signed and sealed copies of calculations necessary to qualify the system shall also be submitted.
- C. Nothing herein shall be deemed to allow the use of shoring, sloping, or protective system less effective than that required by the Construction Safety Orders of the Division of Industrial Safety, or Part 1926 of 29 CFR, subpart P.
- D. If Contractor proposes to use trench jacks or speed shores, submittals shall show length and type of shoring vertical and horizontal spacing, vertical or horizontal wales and planks. Shields, when proposed or used, shall show depth allowed in the soils expected to be encountered.

1.7 ENGINEER'S REVIEW

- A. The duty of the Engineer to conduct construction review of the Contractor's performance is not intended to include a review or approval of the adequacy of the Contractor's safety supervisor, the safety program, or any safety measures taken in, on, or near the construction site.

- B. The Engineer will review the submittal of the Contractor's proposed shoring system to verify the general scope of the Work, to determine that qualified professional engineering services are used and to determine that appropriate construction techniques are proposed for use. This review shall not in any way be construed to relieve the Contractor from sole responsibility for the design and safety of such shoring.

1.8 CONTRACTOR'S SUPERVISOR

- A. The Contractor shall appoint a qualified supervisory employee who shall be responsible to determine the sloping or shoring system which shall be used depending on local soil type, water table, stratification, depth, etc.

PART 40 PRODUCTS (NOT USED)

PART 41 EXECUTION (NOT USED)

END OF SECTION

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SECTION 31 23 00

TRENCH EXCAVATION AND BACKFILL

PART 42 GENERAL

1.1 SUMMARY

- A. Section includes: The Work covered in this section consists of performing all operations necessary to excavate all earth, regardless of character and subsurface conditions, from the trench or adjacent thereto and to place stabilization, bedding, cover, water removal, backfill, base, and compaction as shown on the Drawings and as specified, or as may be ordered by the Engineer.
- B. Such earthwork shall include, but may not necessarily be limited to, the loosening, removing, loading, transporting, depositing, and compacting in its final location of all materials wet and dry, as required for the purposes of completing the Work, which shall include, but not necessarily be limited to, the furnishing, placing, and removing of sheeting, shoring and bracing necessary to safely support the sides of all excavations; all pumping, ditching, draining and other required measures for the removal or exclusion of water from the excavation; the supporting of structures above and below the ground; all backfilling around structures and all backfilling of trenches and pits; the disposal of excess excavated materials; borrow of materials to make up deficiencies for fills; and all other incidental earthwork.
- C. General intent:
1. It is the general intent of these specifications to specify conduct of the Work in such manner as to cause no exposure to unsafe conditions during construction and to provide a trench that will properly support and protect the pipe and only minor settlement in areas where such settlement will not be noticed, or compensation made for any expected settlement. The degree of compaction and type of material will vary in accordance with type of pipe, and soil and surface conditions.
 2. The Contractor shall obtain compaction and install base and temporary paving. He shall keep access roads clean and free of dust, mud or debris by providing cleanup as necessary.
 3. If the Contractor does not properly clean up, (to preconstruction conditions) the City shall have the option of using outside equipment and labor to perform the Work and such costs will be deducted from the contract.
 4. Stabilization material will be required only where soil conditions warrant and as directed by the Engineer.
 5. No backfilling shall be done until the installation to be covered has been inspected and approved for covering. Compaction of backfill shall proceed immediately after backfilling, in appropriate layers.
 6. During construction, heavy rains may be encountered causing wet backfill and other unsuitable working conditions. During these periods the City will have authority to shut down the Work to avoid poor working conditions, wet unsuitable backfill, damage to base and paving, unsafe conditions, etc.
- D. Contaminated soil and groundwater shall be handled in accordance with Section 31 00 00, "Earthwork," and all regulatory agency requirements.
- E. Related Work:
1. Section 02 01 10 - Existing Utilities and Underground Structures
 2. Section 31 00 00 - Earthwork
 3. Section 31 01 40 - Shoring and Trench Safety
 4. Section 33 11 00 - Water Utilities

1.2 QUALITY ASSURANCE

- A. Qualifications of workmen: Provide sufficient skilled workmen and supervisors who shall be present at all times during execution of this portion of the Work and who shall be thoroughly familiar with the type of construction involved and the materials and techniques specified.
- B. Codes and standards:
- C. Wherever a test method is referenced in this section it shall be made in accordance with the most current test methods in use by the California Department of Transportation (Caltrans).
- D. Where reference is made to the State Standard Specifications, reference shall mean: State of California, Business and Transportation Agency, Department of Transportation (Caltrans), Standard Specifications, 2018, excluding measurement and payment Sections.

1.3 GUARANTEES

- A. The Contractor shall guarantee his Work against settlement for a period of one year after the Notice of Completion has been filed and shall repair all damage caused by settlement within that time. For the purpose of this specification, settlement will be deemed to have occurred if the following conditions exist:
 - 1. Along unpaved portions, a depression of 1 inch below the average of the sides of the uncut portion shall be deemed a settlement.
 - 2. In paved areas, the depression of 1/4 inch below the average of the sides of the uncut portion will be deemed a settlement.

1.4 CONTRACTOR SUBMITTALS

- A. Submit all product data, shop drawings, laboratory test results, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.
- B. The Contractor's attention is directed to the provisions for "Shoring and Bracing Drawings" in Section 6705 of the California Labor Code. The Contractor, prior to beginning any trench or structure excavation five (5) feet deep or over, shall submit to the Engineer for review for compliance with Section 6705 the Contractor's detailed plan showing design of all shoring, bracing, sloping of the sides of excavation, or other provisions for worker protection against the hazard of caving ground during the excavation of such trenches or structure excavation. If such plan varies from the shoring system standards established in the Construction Safety Orders of the State of California, such alternative system plans shall be prepared, stamped and signed by a civil or structural engineer licensed in the State of California at the Contractor's expense.
- C. Certificates of Compliance: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.
- D. For all materials, the Contractor shall designate the source and/or submit samples of all materials in advance of their use for required testing and Engineer's approval, if requested. All testing costs shall be at the City's expense.

1.5 QUALITY ASSURANCE

- A. General: All soils testing will be performed by the City.
- B. Where soil material is required to be compacted to a percentage of maximum density the maximum density at optimum moisture content will be determined in accordance with the standards outlined ASTM D1557. Field density in-place tests will be performed by the City.

- C. The Contractor shall notify the Engineer at least 2 working days prior to performing any utility excavation.

PART 43 PRODUCTS

1.1 EXCAVATION

- A. The Contractor shall complete all excavation regardless of type, nature, or condition of the material encountered. The Contractor shall make his own estimate of the kind and extent of the various materials to be excavated in order to accomplish the Work. The Contractor should refer to the available Geotechnical Engineering Investigation report (soils report) for anticipated excavation conditions. Native backfill shall not be used for any utility trench backfill, unless noted otherwise on the Drawings.

1.2 BEDDING AND COVER MATERIAL

- A. Pipe Bedding Material: Section 31 00 00, "Earthwork."

1.3 TRENCH BACKFILL

- A. Trench Backfill Material: Section 31 00 00, "Earthwork."

1.4 PERMEABLE MATERIAL

- A. Permeable Material: Section 31 00 00, "Earthwork."
- B. Permeable material shall be used in over-excavated areas of trenches, including where the bottom of excavations is unstable, disturbed or wet.

1.5 GEOTEXTILE FABRICS

- A. Filter Fabric: Section 31 00 00, "Earthwork."
- B. Subgrade Stabilization Fabric: Section 31 00 00, "Earthwork."

1.6 SLURRY CEMENT BACKFILL

- A. Slurry Cement Backfill: Section 31 00 00, "Earthwork."

1.7 STEEL PLATE

- A. When steel plate bridging is provided in lieu of backfill and temporary asphalt, it shall be skid resistant and conform to Section 602.1 of the Caltrans Encroachment Permit Manual, with the following minimum thicknesses:

Trench Width	Minimum Plate Thickness
(10") 0.25 m	(1/2") 13 mm
(1' – 11") 0.58 m	(3/4") 19 mm
(2' – 7") 0.80 m	(7/8") 22 mm
(3' – 5") 1.04 m	(1") 25 mm
(5' – 3") 1.60 m	(1 1/4") 32 mm

- B. For spans greater than 5 feet-3 inches, a structural design shall be prepared by a California registered civil engineer. Plates to be coated with a "no slip" surface.

PART 44 EXECUTION

1.1 GENERAL

- A. The Contractor shall perform all excavation of whatever substance is encountered to the lines and grades shown on the plans. All excavated materials shall become the property of the Contractor and disposed of in accordance with local and state requirements.
- B. Not more than 150 feet of excavation trench will remain un-backfilled at the end of each day's work. The maximum amount of open trench permitted in any one location shall be the length necessary to accommodate the amount of pipe installed and backfilled in a single day. All trenches shall be fully backfilled at the end of each day or, in lieu thereof, shall be covered by heavy steel plates adequately braced and capable of supporting vehicular traffic in those locations where it is impractical to backfill at the end of each day. The above requirements for backfilling or use of steel plate may be waived in cases where the trench is located further than 100 feet from any traveled roadway or occupied structure. In such cases, however, barricades and warning lights meeting safety requirements shall be provided and maintained. All operations shall be carried out in an orderly fashion. Backfilling, compacting, base, and cleanup will be accomplished as sections of the pipe are installed.
- C. Where abandoned underground structures are encountered, remove to sufficient depth to allow underground lines to cross, backfill and compact during rough grading. The Engineer may require further work to be done if visual inspection indicates during construction.

1.2 WIDTH OF TRENCH

- A. Except where otherwise specifically noted or directed, excavation for pipelines and utilities shall be open-cut trenches, sides of trenches shall be vertical, shored as required, and shall be uniform width from top to bottom. Trenches shall be of a width as shown on the Drawings.
- B. If trench widths exceed those shown on the Drawings, install all additional stabilization material, special bedding and cover, backfill, base and paving or higher strength pipe in conformance with these specifications and as directed by the Engineer at no additional cost to the City.
- C. Subgrade: The surface of the subgrade after compaction shall be hard, uniform, smooth, self draining, and true to grade and cross section.
- D. Trench Bottom: The pipe bedding shall be given a final trim establishing grade such that each pipe section when first laid will be continually in contact with the bedding along the extreme bottom of the pipe. Rounding out the trench bottom or bedding to form a cradle for the pipe will not be allowed. The Contractor shall hand excavate for bell holes and fittings.

1.3 PAVING REMOVAL

- A. Pavement removed for trenching shall be recycled at an approved facility.

1.4 REMOVAL OF WATER

- A. Dewatering: Section 31 23 19 - Dewatering
- B. Water disposal shall meet federal, state, and local requirements and as specified.

1.5 SHORING, SHEETING AND BRACING

- A. See Section 31 01 40 - Shoring and Trench Safety. The Contractor shall furnish and install all shoring, sheeting and bracing required to support adjacent earth banks and structures for the protection and safety of all personnel working in the trench. All shoring, sheeting and bracing

shall conform to the requirements of the State or local agents having jurisdiction over such matters. Remove shoring, sheeting and bracing in a manner that will protect the workman and prevent caving of banks and damage to the pipe, grade, sidewall support, bedding compaction, excavation, backfill or adjacent property.

1.6 OVEREXCAVATION

- A. If the bottom of an excavation is found to consist of soft or unstable material that is incapable of properly supporting the pipe or structure, the Engineer shall be advised immediately.
- B. The Contractor shall obtain the Engineer's approval prior to performing any overexcavation. Any over excavating and resultant backfill and compaction without such approval shall be at the Contractor's expense. The quantity of approved unsuitable material excavated and its replacement shall be paid for as extra work only with the authorization of the Engineer and in accordance with the Contract Documents.

1.7 ROCK EXCAVATION

- A. Rock excavation shall include removal and disposal of the following: (1) all boulders measuring 1/3 of a cubic yard or more in volume; (2) all rock material in ledges, bedding deposits, and unstratified masses; (3) concrete or masonry structures which have been abandoned; and (4) conglomerate deposits which are so firmly cemented that they possess the characteristics of solid rock.
- B. The Contractor shall obtain the Engineer's approval prior to performing any rock excavation. Any rock excavation and resultant backfill and compaction without such approval shall be at the Contractor's expense. The quantity of approved rock excavated and its replacement with suitable fill material shall be paid for as extra work only with the authorization of the Engineer and in accordance with the Contract Documents.
- C. Rock excavation is not anticipated for this project. If the Contractor encounters rocks during earthwork activities, the Engineer shall be advised immediately.
- D. Explosives and Blasting: Use of Explosives and Blasting will not be permitted.

1.8 TRENCH BACKFILL IN THE PIPE ZONE

- A. The Contractor shall backfill the pipe zone with the bedding and cover materials specified to the dimensions shown on the Drawings. The trench shall be final-graded by hand to provide a secure bedding full length with hand excavation made for bells or collars.
- B. Trench backfill in the pipe zone shall be moisture conditioned to within 2 percent of the ASTM D1557 optimum moisture content and compacted to achieve a minimum relative compaction of 90 percent of the ASTM D1557 maximum dry density, unless noted otherwise on the Drawings.
- C. Additional backfill shall then be installed and the sides of the pipes moisture conditioned to within 2 percent of the ASTM D1557 optimum moisture content. Backfill on the sides of the pipe shall be shovel sliced to remove voids and tamped to not less than 90 percent compaction to secure full-length bedding and proper pipe wall support. After this, cover material shall be added and mechanically compacted to a relative compaction not less than 90 percent.

1.9 TRENCH BACKFILL IN THE TRENCH ZONE

- A. The Contractor shall backfill the trench zone with the trench cover materials specified to the dimensions shown on the Drawings. The trench shall be final-graded by hand to provide a secure bedding full length with hand excavation made for bells or collars.

- B. Trench backfill in the trench zone shall be moisture conditioned to within 2 percent of the ASTM D1557 optimum moisture content, placed in maximum 8 inch thick loose lifts prior to compacting, and compacted to achieve a minimum relative compaction of 90 percent of the ASTM D1557 maximum dry density.
- C. Trench backfill within 12 inches of subgrade in non-vehicular areas shall be moisture conditioned to within 2 percent of the ASTM D1557 optimum moisture content, placed in maximum 6 inch thick loose lifts prior to compacting, and compacted to achieve a minimum relative compaction of 95 percent of the ASTM D1557 maximum dry density.
- D. Trench backfill within 12 inches of subgrade in vehicular areas shall be moisture conditioned to within 2 percent of the ASTM D1557 optimum moisture content, placed in maximum 6 inch thick loose lifts prior to compacting, and compacted to achieve a minimum relative compaction of 95 percent of the ASTM D1557 maximum dry density.

1.10 PLACING AND SPREADING OF BACKFILL MATERIALS

- A. Backfill shall not be dropped directly upon any structure or pipe. Backfill shall not be placed around nor upon any structure for a minimum of 72 hours or until the concrete has attained sufficient design strength to withstand the loads imposed, whichever is greater.
- B. Backfill materials shall be placed and spread evenly in horizontal layers.
- C. During spreading each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer and uniformity of moisture throughout backfill materials. Pipe Zone backfill materials shall be manually spread around the pipe so that when compacted, the Pipe Zone backfill will provide uniform bearing and side support.
- D. Where the backfill material moisture content is below the optimum moisture content water shall be added before or during spreading until the proper moisture content is achieved.
- E. Where the backfill material moisture content is too high to permit the specified degree of compaction, the material shall be dried or replaced until the moisture content is satisfactory.
- F. Backfill shall be mechanically compacted by means of tamping rollers, sheepsfoot rollers, pneumatic tire roller, vibrating rollers, or other mechanical tampers. All such equipment shall be of a size and type subject to review by the Engineer. Impact-type pavement breakers (stompers) will not be permitted. Permission to use specific compaction equipment shall not be construed as guaranteeing or implying that the use of such equipment will not result in damage to adjacent ground, existing improvements, or new improvements. The Contractor shall make its own determination in this regard.
- G. Material for mechanically compacted backfill shall be placed in lifts which, prior to compaction, shall not exceed the thickness specified below for various types of equipment:
 1. Vibratory equipment, including vibratory plates, vibratory smooth-wheel rollers, and vibratory pneumatic-tired rollers - maximum lift thickness of 1 foot.
 2. Rolling equipment, including sheepsfoot (both vibratory and non-vibratory), grid, smooth-wheel (non-vibratory), pneumatic-tired (non-vibratory), and segmented wheels - maximum lift thickness of 1 foot.
 3. Hand-directed mechanical tampers-maximum lift thickness of 4 inches.
- H. Mechanically compacted landfill shall be placed in horizontal layers of thickness not exceeding those specified above, compatible to the material being placed and the type of equipment being used. Each layer shall be evenly spread, moistened or dried, if necessary, and then tamped or rolled until the specified relative compaction has been attained.

1.11 COMPACTION OF BACKFILL MATERIALS

- A. Specification Section 31 00 00 - Earthwork. Each layer of backfill material as defined herein, shall be mechanically compacted to the specified percentage of maximum density. Equipment that is consistently capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content range.
- B. Flooding, ponding, or jetting shall not be used.
- C. Equipment weighing more than 10,000 pounds shall not be used closer to structure walls than a horizontal distance equal to the depth of the fill against the structure wall at that time or 5-feet, whichever is greater. Hand operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.
- D. Trench Backfill Requirements: The pipe class has been structurally designed based upon the trench configuration specified herein.
 - 1. The Contractor shall maintain the specified trench width up to a horizontal plane lying 12 inches above the top of the pipe.
 - 2. If, at any location under said horizontal plane, the Contractor slopes the trench walls or exceeds the maximum trench widths indicated the Pipe Zone backfill shall be "improved" or the pipe class improved at no additional cost to the City. "Improved" backfill shall mean Slurry Cement Backfill or other equivalent materials acceptable to the Engineer.
 - 3. All trenches shall have a minimum of 2 inches of temporary asphalt placed daily and maintained unless final paving can be completed in the same day. Temporary asphalt shall be placed flush with adjacent pavement grade.
 - 4. Steel plates may be used to cover open trenches in-lieu of backfill and temporary asphalt pavement.

1.12 COMMUNICATIONS/ELECTRICAL

- A. Bed and backfill in accordance with the Drawings.

1.13 STEEL PLATE

- A. General: When backfilling operations of an excavation in the traveled way, whether transverse or longitudinal, cannot be properly completed within a work day, steel plate bridging with a non-skid surface and shoring may be required to preserve unobstructed traffic flow.
- B. Steel plate bridging and shoring shall be installed using either Method (1) or (2):
 - 1. Method 1 for speeds more than 45 mph:
 - 2. The pavement shall be cold planed to a depth equal of the thickness of the plate and to a width and length equal to the dimensions of the plate.
 - 3. Method 2 for speeds 45 mph or less:
 - a. Approaching plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2 inches into the pavement. Subsequent plates are butted to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope 8.5 percent with a minimum 12 inch taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry or an equivalent slurry.
- C. When steel plate bridging is required, the following conditions shall apply:
 - 1. Steel plates used for bridging must extend a minimum of 12 inches beyond the edges of the trench.
 - 2. Steel plate bridging shall be installed to operate with minimum noise.

3. The trench shall be adequately shored to support the bridging and traffic loads.
 4. Temporary paving with cold asphalt concrete shall be used to feather the edges of the plates, if plate installation by Method (2) is used.
 5. Bridging shall be secured against displacement by using adjustable cleats, shims or other devices.
- D. Steel plate bridging and shoring shall be installed using either Method (1) or (2):
1. Method 1 for speeds more than 45 mph:
 - a. The pavement shall be cold planed to a depth equal of the thickness of the plate and to a width and length equal to the dimensions of the plate.
 2. Method 2 for speeds 45 mph or less:
 - a. Approaching plate(s) and ending plate (if longitudinal placement) shall be attached to the roadway by a minimum of 2 dowels pre-drilled into the corners of the plate and drilled 2 inches into the pavement. Subsequent plates are butted to each other. Fine graded asphalt concrete shall be compacted to form ramps, maximum slope 8.5 percent with a minimum 12 inch taper to cover all edges of the steel plates. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry or an equivalent slurry.
- E. Steel plate bridging should not exceed 4 consecutive working days in any given week.

1.14 TESTING

- A. Relative compaction shall be to the densities specified and referenced herein. All testing will be performed by the City.

END OF SECTION

SECTION 31 23 19

DEWATERING

7 GENERAL

1 DESCRIPTION

- a Groundwater is anticipated in this project. The Contractor is advised that groundwater may be present in some of the proposed excavations, depending on site location, depth of excavation, soil conditions and time of year. As necessary, the Contractor shall keep excavations free from water during construction.
- b The Contractor shall provide all labor, materials, and equipment necessary to dewater trench and structure excavations, in accordance with the requirements of the Contract Documents, to enable the pipes and structures to be installed in excavations that are free from standing or flowing water that may be due to groundwater, surface water, stormwater or precipitation.
- c The preferred disposal method for water removed from trenches and other excavations is through discharge to the sanitary sewer.
- d If required, the Contractor shall obtain a waste discharge permit from the City of Sebastopol for the discharge of dewatered groundwater to the sanitary sewer system.
- e The Contractor shall be responsible for all permits and fees associated with such discharges.
- f The preferred discharge location for dewatered groundwater is the City of Sebastopol's wastewater collection system, as described in paragraph 1.4 of this Section.
- g The Contractor shall develop an excavation dewatering plan in accordance with paragraph 1.5.A of this Section.
- h The Contractor shall qualitatively monitor for odor or visual discrepancies indicative of hydrocarbon contamination in groundwater during dewatering operations. The Contractor shall notify the Owner immediately if potential contamination is encountered.
- i The Contractor's dewatering operations shall not interfere with vehicle or pedestrian traffic. Under no circumstances shall dewatering water be allowed to flood streets and cause hazardous conditions for vehicular or pedestrian traffic. Dewatering pump noise shall be mitigated, especially at night. Any mitigating measures taken to conform to these requirements shall be at no extra expense to the Owner.
- j The Contractor shall obtain any and all permits required in conjunction with dewatering operations, including permits for construction of dewatering wells.

2 RELATED WORK SPECIFIED ELSEWHERE

- a Section 02 01 00 – Site Conditions
- b Section 31 01 40 – Shoring and Trench Safety
- c Section 31 23 00 – Trench Excavation and Backfill

3 DEFINITIONS

- a Dewatering: Practices that manage the discharge of groundwater and accumulated precipitation from a work location so that construction work may be accomplished.

4 DISCHARGE TO COLLECTION SYSTEM

- a No water shall be discharged into sanitary sewers without the prior written consent of the Engineer and 24 hours advance notice to the City of Sebastopol.
- b Groundwater turbidity may not exceed 10 NTU for discharging into the City's wastewater collection system.
- c If the turbidity requirements above are not met by tank settling alone, a filter must be employed to remove soil particles from the groundwater prior to discharge.
- d Testing of water samples for turbidity shall be performed and documented daily for the first week, then at weekly intervals during the remaining period of discharge. Water shall only be discharged if the sample test results meet the specified turbidity requirements. A log of the monitoring and sampling results shall be maintained.
- e The Contractor shall coordinate groundwater discharge into the collection system with the Owner, including verifying water quality requirements, discharge flow limitations into the collection system, and location of discharges into the collection system. Discharged flows into the collection system shall be limited to 100 gpm.
- f In no case shall the Contractor's groundwater disposal operation surcharge the collection system (i.e., full pipe flow).
- g The costs associated with any damage caused as a result of Contractor's groundwater disposal operation surcharging the collection system shall be the Contractor's sole responsibility.

5 SUBMITTALS

- a Submit all plans, product data, shop drawings, laboratory test results, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.
- b Dewatering Plan
 - i Dewatering systems shall be designed and maintained by the Contractor and shall be coordinated with the design of shoring specified in Section 31 01 40, "Shoring and Trench Safety." The plans should contain at a minimum the sizes of pumps, tanks, filtration devices, and the points of disposal. The plan should also include alternate (contingent) systems, and the Contractor should be prepared to alter the initial dewatering or shoring systems to meet the specified requirements.
 - ii The plan shall also include the water quality requirements specified herein.
- c Section 01 33 00 – Submittal Procedures
- d Product Data: Submit data for each of the following:
 - i Dewatering Pumps: Indicate sizes, capacities, priming methods, and engine or motor characteristics.
 - ii Pumping equipment for control of discharge.
 - iii Size of tank(s) used for storage.
 - iv Specifications and size and type of filters and any other materials used for filtration.

6 CLOSEOUT SUBMITTALS

- a Section 01 33 00 – Submittals
- b Once the storage tank(s) are no longer needed, clean and remove from the site and return the area to original condition.

7 PRE-INSTALLATION MEETINGS

- a Section 01 30 00 – Administrative Requirements: Pre-installation meeting.
- b Convene minimum one week prior to commencing work of this Section.

8 SEQUENCING

- a Section 01 10 00 – Summary: Requirements for sequencing.

9 COORDINATION

- a Coordinate work to permit the following construction operations to be completed on stable substrate.
 - i Excavation for structures and pipelines as specified in Section 31 23 00 “Trench Excavation and Backfill.”
- b Coordinate with the Engineer prior to the commencement of any soil excavation and groundwater discharge.
- c All dewatering operations shall be adequate to assure the integrity of the finished project.

8 PRODUCTS

1 DEWATERING EQUIPMENT

- a Select dewatering equipment to meet specified performance requirements.

9 EXECUTION

1 DEWATERING OPERATIONS

- a Install dewatering system in accordance with the approved Dewatering Plan.
 - i Secure City approved areas for siting of groundwater storage tanks and treatment systems. Located system components to allow continuous dewatering operations without interfering with the excavation work.
 - ii Install the dewatering system in accordance with State, local and Unified Building Code standards.
- b Remove water from the excavation in accordance with the approved Dewatering Plan.
 - i Keep excavations free from water during construction.
 - ii Treat all water from the dewatering operations as required for removal of sediment prior to discharge. Water discharged to the City’s collection system shall be within acceptable limits.
 - iii Draw down the static water level a minimum of 2 feet below the bottom of excavations to maintain the undisturbed state of natural soils and allow the placement of any fill to the specified density.
 - iv Operate dewatering systems continuously until backfill has been completed to 1-foot above the normal static groundwater level.
 - v Control the release of groundwater to its static level to prevent disturbance of the natural foundation soils or compacted fill and to prevent floatation or movement of structures and pipelines.
 - vi Control groundwater to prevent softening of the bottom of excavations, or formation of “quick” conditions. Dewatering systems shall not remove natural soils.
 - vii At all times, site grading shall promote drainage away from excavations. Surface runoff shall be diverted from excavations.
 - viii Dewatering in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.
 - ix Control surface runoff to prevent entry or collection of water in excavations.

- c Notify the Engineer and stop excavation work should the dewatering system not adequately control water within the excavation.
 - i Supplement or modify dewatering system and provide other remedial measures to control water within excavation.
 - ii Demonstrate dewatering system operation complies with performance requirements before resuming excavation operations.

- d Notify the Engineer and stop excavation work if potentially contaminated groundwater is encountered.
 - i Upon notification from the Contractor regarding potential groundwater contamination, the City will sample and analyze to verify the existence and extent of contamination.

- e Notify the Engineer and stop excavation work if settlement or ground movement is detected.
 - i Contractor shall control the rate and effect of the dewatering in such a manner as to avoid all settlement and subsidence.
 - ii Where critical structures or facilities exist immediately adjacent to areas of proposed dewatering, reference points shall be established and observed at daily intervals to detect any settlement or ground movement that may develop. The Contractor shall conduct the dewatering operation in a manner that protects adjacent structures and facilities. The cost of repairing any damage to adjacent structures and restoration of facilities shall be the responsibility of the Contractor.

- f Maintain all equipment in an operable state.
 - i Inspect equipment daily and repair or replace as needed.
 - ii Clean accumulated sediment from tanks as needed.

- g Remove dewatering systems after dewatering operations are discontinued.
 - i The Contractor shall be responsible for sampling and disposal of sediments collected in storage tanks, as well as other waste materials related to groundwater discharge.
 - ii Repair damage caused by dewatering systems or resulting from failure of systems to protect property.

END OF SECTION

SECTION 31 25 00

EROSION CONTROL

10 GENERAL

1 REFERENCES

a The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

i AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

1	ASTM D 4439-14	Standard Terminology for Geosynthetics
2	ASTM D 4491-14	Water Permeability of Geotextiles by Permittivity
3	ASTM D 4533-11	Trapezoid Tearing Strength of Geotextiles
4	ASTM D 4632-13	Grab Breaking Load and Elongation of Geotextiles
5	ASTM D 4751-12	Determining Apparent Opening Size of a Geotextile
6	ASTM D 4873-09	Identification, Storage, and Handling of Geosynthetic Rolls

b California Department of Transportation, Standard Specifications, Section 13 Water Pollution Control.

c Field Guide for Construction Site Dewatering.

d Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual (October 2016).

e Construction Site Best Management Practices (BMP) Manual.

f Construction Site Monitoring Program (CSMP) Guidance Manual.

g Manuals and templates are available at Caltrans Division of Construction website: <http://www.dot.ca.gov/hq/construc/stormwater/>.

2 GENERAL

a A Storm Water Pollution Prevention Plan (SWPPP) document is not required for this project.

b The Contractor shall prepare a Water Pollution Control Plan (WPCP) for review and approval by the Engineer, and implement water pollution prevention measures outlined in the approved WPCP, specified in this specification section, in Standard Specification Section 13, and the requirements of the National Pollution Discharge Elimination System (NPDES).

c The Contractor shall become fully informed of, and comply with the applicable Federal, State and local regulations that govern the Contractor's operations and storm water discharges from both the project site and areas of disturbance outside the project limits during construction.

d Unless arrangements for disturbance of areas outside the project limits are made by the District and made part of the contract, it is expressly agreed that the District assumes no responsibility to the Contractor or property owner whatsoever with respect to any arrangements made between the Contractor and property owner to allow disturbance of areas outside the project limits.

e The Contractor shall be responsible for the costs and for any liability imposed by law as a result of the Contractor's failure to comply with the requirements set forth in this section including, but not limited to, compliance with the applicable provisions of Federal, State and local regulations. For the purposes of this paragraph, costs and liabilities include but are not limited to fines,

penalties and damages whether assessed against the State or the Contractor, including those levied under the Federal Clean Water Act and the State Porter Cologne Water Quality Act.

- f Conformance with the requirements of this section "Erosion Control," shall not relieve the Contractor from the Contractor's responsibilities, as provided in Section 5-1.36, "Property and Facility Preservation," Section 7-1.05, "Indemnification," and Section 7-1.06, "Insurance," of the Standard Specifications.
- g Earthwork construction activities shall be limited to summer months from May 15 through October 15.
- h Heavy equipment shall be placed outside of drainage channels except when necessary to perform the Work.
- i Upon completion of construction activities, drainage channels shall be restored and re-contoured as nearly as practicable to pre-project conditions, and shall match adjacent natural channel contours.
- j All demolished materials shall be removed from the project sites and disposed of by the Contractor. Refer to Specification Section 02 41 10 "Demolition, Salvage and Abandonment" for additional details and requirements.

3 EROSION AND SEDIMENT CONTROLS

- a The controls and measures required by the Contractor include but are not limited to the items below.
 - i Structural Practices: Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Structural practices shall include the following devices:
 - 1 Fiber Rolls (sediment logs or wattles): Contractor shall provide fiber rolls as temporary structural practice to minimize erosion and sediment runoff. Fiber rolls shall be properly placed and installed to effectively retain sediment immediately after completing each phase of work (e.g., clearing and grubbing, excavation, embankment, and grading) in each independent runoff area (e.g., after clearing and grubbing in an area between a ridge and drain, fiber rolls shall be placed as work progresses; fiber rolls shall be removed/replaced/relocated as needed for work to progress in the drainage area). Areas where fiber rolls are to be used are shown on the drawings. Final removal of fiber roll barriers shall be upon approval by the Owner. Fiber Rolls shall be provided as follows:
 - a Along the downhill perimeter edge of all areas disturbed.
 - b Along the top of the slope or top bank of drainage ditches, channels, swales, etc. that traverse disturbed areas.
 - c Along the toe of all cut slopes and fill slopes of the construction areas.
 - d Perpendicular to the flow in the bottom of existing drainage ditches, channels, swales, etc. that traverse disturbed areas or carry runoff from disturbed areas. Rows shall be spaced a maximum of 100 feet apart.
 - e Perpendicular to the flow in the bottom of new drainage ditches, channels, and swales. Rows shall be spaced a maximum of 100 feet apart.
 - f At the entrance to culverts that receive runoff from disturbed areas.
 - 2 Diversion Dikes. Diversion dikes shall have a maximum channel slope of 2 percent and shall be adequately compacted to prevent failure. The minimum height measured from the top of the dike to the bottom of the channel shall be 18 inches. The minimum base width shall be 6 feet and the minimum top width shall be 2 feet. The Contractor shall ensure that the diversion dikes are not damaged by construction operations or traffic. Diversion dikes shall be located as shown on the drawings.
 - 3 A stabilized vehicular entrance/exit at the Well #9 site shall be provided in accordance with Stabilized Construction Entrance/Exit Detail TC-1 of the Caltrans Construction Site Best

4 SUBMITTALS

- a Prepare and submit a Water Pollution Control Plan, including a minimum of one (1) 11"x17" figure showing the details of the water pollution control measures and Best Management Practices (BMPs) that will be implemented.
 - i As part of the water pollution control work, a Water Pollution Control Program, hereafter referred to as the "WPCP," is required for this contract. The WPCP shall conform to the requirements in Section 13-2, "Water Pollution Control Program," of the Standard Specifications, the requirements in the Caltrans manuals, and these Construction Details.
 - ii No work having potential to cause water pollution, as determined by the Engineer, shall be performed until the WPCP has been approved by the Engineer.
 - iii Within 30 calendar days after the approval of the contract, the Contractor shall submit 3 copies of the WPCP to the Engineer. The Contractor shall allow 10 days for the Engineer to review the WPCP. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the WPCP within 7 days of receipt of the Engineer's comments and shall allow 7 days for the Engineer to review the revisions. Upon the Engineer's approval of the WPCP, 3 additional copies of the WPCP incorporating the required changes shall be submitted to the Engineer. Minor changes or clarifications to the initial submittal may be made and attached as amendments to the WPCP. In order to allow construction activities to proceed, the Engineer may conditionally approve the WPCP while minor revisions or amendments are being completed. The objectives of the WPCP shall be to identify pollution sources that may adversely affect the quality of storm water discharges associated with the project and to identify, construct, implement and maintain water pollution control measures, hereafter referred to as control measures, to reduce to the extent feasible pollutants in storm water discharges from the construction site during construction under this contract.
 - iv The WPCP shall incorporate control measures and minimum requirements in the following categories:
 - 1 Soil stabilization practices;
 - 2 Sediment control practices;
 - 3 Wind Erosion Control practices;
 - 4 Tracking control practices;
 - 5 Non-storm water management and waste management and materials disposal control practices.
 - v Specific objectives and minimum requirements for each category of control measures are contained in the Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual.
 - vi The Contractor shall consider the objectives and minimum requirements presented in the SWPPP-WPCP Preparation Manual for each of the above categories. When minimum requirements are listed for any category, the Contractor shall incorporate into the WPCP and implement on the project, one or more of the listed minimum controls required in order to meet the pollution control objectives for the category. In addition, the Contractor shall consider other control measures presented in the SWPPP-WPCP Preparation Manual and shall incorporate into the WPCP and implement on the project the control measures necessary to meet the objectives of the WPCP. The Contractor shall document the selection process in accordance with the procedure specified in the SWPPP-WPCP Preparation Manual.
 - vii The following contract items of work, as shown on the project Plans, shall be incorporated into the WPCP as critical temporary control measures:
 - 1 During construction and as part of the erosion control measures:
 - a Place fiber rolls around all soil stock piles and at the grading limits.
 - b Place straw bales or rock bags around all storm drain inlets.
 - c The Contractor shall consider other control measures to supplement these critical temporary control measures when necessary to meet the pollution control objectives of the WPCP.

- viii The Contractor shall maintain and protect the temporary control measures throughout the duration of the project and shall restore these controls to the lines and grades shown on the Plans prior to acceptance of the project.
- ix The WPCP shall include, but not be limited to, the following items as described in the Handbook:
 - 1 Project description and Contractor's certification;
 - 2 Project information;
 - 3 Pollution sources, control measures, and water pollution control drawings; and
 - 4 Amendments, if any.
- x The Contractor shall amend the WPCP, graphically and in narrative form, whenever there is a change in construction activities or operations which may affect the discharge of significant quantities of pollutants to surface waters, ground waters, municipal storm drain systems, or when deemed necessary by the Engineer. The WPCP shall also be amended if the WPCP has not achieved the objective of reducing pollutants in storm water discharges. Amendments shall show additional control measures or revised operations, including those in areas not shown in the initially approved WPCP, which are required on the project to control water pollution effectively. Amendments to the WPCP shall be submitted for review and approval by the Engineer in the same manner specified for the initially approved WPCP. Amendments shall be dated and attached to the on-site WPCP document.
- xi The Contractor shall keep a copy of the WPCP, together with updates, revisions and amendments at the project site.

- b Submit all product data, laboratory test results, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.

- c Product Data:
 - i Submit data for erosion control materials listed in this section indicating properties, test methods, and manufacturer's installation instructions.
- d Material Source: Submit name of imported fill materials supplied.
- e Manufacturer's Certificate: Submit Certifications that products meet or exceed specified requirements.

- 11 PRODUCTS**
- 1 TEMPORARY FIBER ROLLS (sediment logs or wattles)
 - a Standard Specifications, Section 21-1.02P Fiber Rolls.
 - i Type A or Type B
 - ii 8 – 10 inches in diameter, 10 – 20 feet long.
 - b Standard Specifications, Section 13-6.03E Temporary Fiber Rolls.
 - c The Contractor shall use wooden stakes for fiber roll installation. Wooden stakes utilized for fiber roll installation, shall have a minimum cross section of 1 inch by 2 inches, or as suggested by the fiber roll manufacturer.
- 2 EROSION CONTROL BLANKETS
 - a Standard Specifications, Section 21-1.02O Jute Mesh or Netting.
- 3 TEMPORARY COVERS
 - a Standard Specifications, Section 13-5.02F Temporary Covers.
 - b Standard Specifications, Section 88-1.02H Temporary Covers.

4 GRAVEL-FILLED BAGS

- a Standard Specifications, Section 13-5.02G Gravel-Filled Bags.
- b Standard Specifications, Section 88-1.02F Gravel-Filled Bags.

5 SEDIMENT FILTER BAGS

- a Standard Specifications, Section 88-1.02G Sediment Filter Bag.

6 TEMPORARY HYDRAULIC MULCH

- a Standard Specifications, Section 13-5.03E Temporary Hydraulic Mulch (Bonded Fiber Matrix).
- b Standard Specifications, Section 13-5.03F Temporary Hydraulic Mulch (Polymer-Stabilized Fiber Matrix).

7 TEMPORARY TACKED STRAW

- a Standard Specifications, Section 13-5.03H Temporary Tacked Straw.

8 TEMPORARY HYDROSEED

- a Standard Specifications, Section 13-5.03I Temporary Hydroseed.

12 EXECUTION

1 GENERAL

- a Upon approval of the WPCP, the Contractor shall be responsible throughout the duration of the project for installing, constructing, inspecting and maintaining the control measures included in the WPCP and any amendments thereto and for removing and disposing of temporary control measures. Unless otherwise directed by the Engineer or specified in these construction details, the Contractor's responsibility for WPCP implementation shall continue throughout any temporary suspension of work ordered in accordance with Section 8 1.06, "Suspensions," of the Standard Specifications. Requirements for installation, construction, inspection, maintenance, removal and disposal of control measures are specified in the Handbook and these construction details.
- b Soil stabilization practices and sediment control measures, including minimum requirements, shall be provided throughout the duration of the project.
- c Implementation of soil stabilization practices and sediment control measures for soil-disturbed areas of the project site shall be completed prior to the start of any other construction activities.
- d Throughout the winter season, the active, soil-disturbed area of the project site shall be no more than 0.04 acres. The Engineer may approve, on a case-by-case basis, expansions of the active, soil-disturbed area limit. The Contractor shall demonstrate the ability and preparedness to fully deploy soil stabilization practices and sediment control measures to protect soil-disturbed areas of the project site before the onset of precipitation. The Contractor shall maintain a quantity of soil stabilization and sediment control materials on site equal to 30 percent of that sufficient to protect unprotected, soil-disturbed areas on the project site and shall maintain a detailed plan for the mobilization of sufficient labor and equipment to fully deploy control measures required to protect unprotected, soil-disturbed areas on the project site prior to the onset of precipitation. The Contractor shall include a current inventory of control measure materials and the detailed mobilization plan as part of the WPCP.

- e Soil-disturbed areas of the project site shall be considered to be non-active whenever soil disturbing activities are expected to be discontinued for a period of 10 or more days and the areas are fully protected. Areas that will become non-active shall be fully protected with soil stabilization practices and sediment control measures within 5 days of the discontinuance of soil disturbing activities or prior to the onset of precipitation, whichever is first to occur.
- f Active soil-disturbed areas of the project site shall be fully protected at the end of each day with soil stabilization practices and sediment control measures unless fair weather is predicted through the following work day. The weather forecast shall be monitored by the Contractor on a daily basis.
- g The National Weather Service (<http://www.weather.gov/>) forecast shall be used. If precipitation is predicted prior to the end of the following work day, construction scheduling shall be modified, as required, and the Contractor shall deploy functioning control measures prior to the onset of the precipitation.
- h The Contractor shall implement, year-round and throughout the duration of the project, control measures included in the WPCP for sediment tracking, wind erosion, non-stormwater management and waste management and disposal.
- i The Engineer may order the suspension of construction operations which create water pollution if the Contractor fails to conform to the requirements of this section "Erosion Control" as determined by the Engineer.

2 INSTALLATION OF FIBER ROLLS (sediment logs or wattles)

- a Fine grade the subgrade by hand dressing where necessary to remove local deviations and to remove larger stones or debris that will inhibit intimate contact of the fiber roll with the subgrade. Prior to roll installation, contour a concave key trench 2 to 4 inches deep along the proposed installation route. Soil excavated in trenching should be placed on the uphill or flow side of the roll to prevent water from undercutting the roll.
- b Place fiber rolls into the key trench and stake on both sides of the roll within 6 feet of each end. Spacing for stakes shall be 3 to 5 feet. Stakes are typically driven in on alternating sides of the roll. Stakes shall be buried 12 inches minimum.
- c When more than one fiber roll is placed in a row, the rows should be abutted securely to one another to provide a tight joint, not overlapped. Fiber rolls shall be placed in a single row, lengthwise on the contour, with ends of adjacent rolls tightly abutting one another.

3 INSTALLATION OF OTHER SEDIMENT AND EROSION CONTROLS

- a Install other sediment and erosion controls in accordance with project SWPPP and Standard Specification Section 13.

4 MAINTENANCE

- a The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The following procedures shall be followed to maintain the protective measures.
 - i Fiber Roll Maintenance. Fiber roll barriers shall be inspected in accordance with paragraph INSPECTIONS. Close attention shall be paid to the repair of damaged rolls, end runs and undercutting beneath rolls. Necessary repairs to barriers or replacement of rolls shall be accomplished promptly. Sediment deposits shall be removed when deposits reach one-half of the height of the barrier. Roll rows used to retain sediment shall be turned uphill at each end of

each row. When a fiber roll barrier is no longer required, it shall be removed. The immediate area occupied by the roll and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be re-vegetated.

5 INSPECTIONS

- a General. The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days, within two (2) calendar days of forecasted rains, and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month.
- b Inspections Details. Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.
- c Inspection Reports. For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. The report shall be furnished to the Engineer within 24 hours of the inspection as a part of the Contractor's work. A copy of the inspection report shall be maintained on the job site.

END OF SECTION

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SECTION 32 12 16

HOT MIX ASPHALT PAVING

PART 45 GENERAL

1.1 DESCRIPTION

- A. Work included: Work covered in this section consists of performing all operations necessary for producing and placing hot mix asphalt (HMA) by mixing aggregate and asphalt binder at a mixing plant and spreading and compacting the HMA mixture.
- B. General intent: All roadway surfaces shall be replaced in a manner which will result in a surface equal to or better than that existing prior to the trenching operations. HMA shall be replaced with a minimum thickness equal to the existing plus 1 inch, or 4 inches total, whichever is greater.
- C. Section Includes:
 - 1. Quality Control Plan.
 - 2. Quality Control Testing.
 - 3. Acceptance Testing.
 - 4. Asphalt Binder and Tack Coat.
 - 5. Aggregate Materials.
 - 6. Hot Mix Asphalt.
 - 7. Thermoplastic Materials
 - 8. Traffic Paint
 - 9. Temporary Traffic Striping and Markings
- D. HMA shall be provided in accordance with the Type A HMA construction process and conform to the latest Caltrans Section 39-2 of the Standard Specifications and as detailed in this specification.
- E. Related Work described elsewhere:
 - 1. Section 31 00 00 - Earthwork
 - 2. Section 31 23 00 - Trench Excavation and Backfill
- F. References
 - 1. AMERICAL ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (AASHTO)
 - a. M 17 2011 (2015) Standard Specification for Mineral Filler for Bituminous Paving Mixtures
 - b. M 323 2013 Standard Specification for Superpave Volumetric Mix Design
 - c. R 30 2002 (2015) Standard Practice for Laboratory Conditioning of Asphalt Mixtures
 - d. R 59 2011 (2015) Standard Practice for Recovery of Asphalt Binder from Solution by Abson Method
 - e. T 27 2014 Standard Method for Test for Sieve Analysis of Fine and Coarse Aggregates
 - f. T 49 2014 Standard Method of Test for Penetration of Bituminous Materials
 - g. T 59 2013 Standard Method of Test for Emulsified Asphalts
 - h. T 96 2002 (2010) Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
 - i. T 164 2014 Standard Method of Test for Quantitative Extraction of Asphalt Binder from Asphalt Mixtures
 - j. T 176 2008 Standard Method of Test for Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test

- k. T 209 2012 Standard Method of Test for Theoretical Maximum Specific Gravity (Gmm) and Density of Asphalt Mixtures
 - l. T 269 2014 Standard Method of Test for Percent Air Voids in Compacted Dense and Open Asphalt Mixtures
 - m. T 275 2007 (2012) Standard Method of Test for Bulk Specific Gravity (Gmb) of Compacted Asphalt Mixtures Using Paraffin-Coated Specimens
 - n. T 283 2014 Standard Method of Test for Resistance of Compacted Asphalt Mixtures to Moisture-Induced Damage
 - o. T 304 2011 Standard Method of Test for Uncompacted Void Content of Fine Aggregate
 - p. T 305 2011 Standard Method of Test for Determination of Draindown Characteristics in Uncompacted Asphalt Mixtures
 - q. T308 2010 Standard Method of Test for Determining the Asphalt Binder Content of Asphalt Mixtures by the Ignition Method
 - r. T 312 2014 Standard Method of Test for Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyrotory Compactor
 - s. T 313 2012 (2016) Standard Method of Test for Determining the Flexural Creep Stiffness of Asphalt Binder Using the Bending Beam Rheometer (BBR)
 - t. T 315 2012 (2016) Standard Method of Test for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)
 - u. T 324 2014 Standard Method of Test for Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures
 - v. T 329 2013 Standard Method of Test for Moisture Content of Asphalt Mixtures by Oven Method
 - w. T 335 2009 Standard Method of Test for Determining the Percentage of Fracture in Coarse Aggregate
2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
- a. D36/D36M 2014 Standard Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
 - b. D92 2012b Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
 - c. D217 2017 Standard Test Methods for Cone Penetration of Lubricating Grease
 - d. D297 2015 Standard Test Methods for Rubber Products—Chemical Analysis
 - e. D445 2014 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)
 - f. D1856 2009 (Reapproved 2015) Standard Test Method for Recovery of Asphalt from Solution by Abson Method
 - g. D2007 2011 Standard Test Method for Characteristic Groups in Rubber Extender and Processing Oils and Other Petroleum-Derived Oils by the Clay-Gel Absorption Chromatographic Method
 - h. D2074 2007 (Reapproved 2013) Standard Test Methods for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method
 - i. D2995 1999 (Reapproved 2009) Standard Practice for Estimating Application Rate and Residual Application Rate of Bituminous Distributors
 - j. D4791 2010 Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
 - k. D5329 2009 Standard Test Methods for Sealants and Fillers, Hot-Applied, for Joints and Cracks in Asphalt Pavements and Portland Cement Concrete Pavements
 - l. D7741/D774M 2011 Standard Test Method for Measurement of Apparent Viscosity of Asphalt-Rubber or Other Asphalt Binders by Using a Rotational Handheld Viscometer
 - m. Asphalt Institute MS-2 7th Edition (2015)

3. State of California, Business and Transportation Agency, Department of Transportation (Caltrans), Standard Specifications, 2018 edition excluding measurement and payment items.

1.2 QUALITY CONTROL PLAN

- A. Establish, implement and maintain a Quality Control Plan (QCP) to ensure materials and work comply with the specifications and the corrective actions required to control the quality of work. The QCP shall comply with these specifications and Section 39-2 of the Caltrans Standard Specifications.
- B. Attend a pre-paving conference with the Engineer to discuss methods of performing the production and paving work and how quality control will be performed throughout.
- C. The Contractor must identify the HMA sampling locations in their QCP. During production, take samples under California Test Method (CT) 125 except if requested in writing with Engineer approval, you may sample HMA from:
 1. The plant
 2. The truck
 3. The paver hopper
 4. The mat behind the paver
- D. In place density tests per CT 375 Nuclear Gage field test shall be performed by the Contractor during HMA operations to meet compaction requirements per Standard Specifications. The frequency of testing shall be in accordance with CT 375 and Section 39-2.02A of the Standard Specifications.
- E. Qualifications of workers: Provide sufficient skilled workers and supervisors who shall be present at all times during execution of this portion of the Work and who shall be thoroughly familiar with the type of construction involved and the materials and techniques specified.
- F. Codes and standards:
 1. Wherever a test method is referenced in this section, it shall be made in accordance with the most current test method in use by the California Department of Transportation (Caltrans) in the State Standard Specifications, latest edition.
 2. For references made to the Standard Specifications, reference shall mean State of California, Business and Transportation Agency, Department of Transportation (Caltrans), Standard Specifications, latest edition, excluding measurement and payment items.

1.3 SUBMITTALS

- A. Submit all product data, shop drawings, laboratory test results, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.
- B. The Contractor shall provide the Engineer with the following information a minimum of 10 days prior to commencing the Work:
 1. Hot mix asphalt job mix formula (JMF) in accordance with Caltrans Standard Specifications.
 - a. Proposed JMF on Form CEM-3511.
 - 1) Include percentage of reclaimed asphalt pavement (RAP)
 - b. Mix design documentation, data and aggregate quality on Form CEM-3512 dated within 12 months of submittal.
 - c. JMF verification on Form CEM-3513, if applicable
 - d. JMF renewal on Form CEM-3514, if applicable

- e. Materials Safety Data Sheets (MSDS) for:
 - 1) Asphalt binder
 - 2) Supplemental fine aggregate except fines from dust collectors
 - 3) Antistrip additives
- 2. Written confirmation from the supplier that the JMF to be supplied meets all specified requirements.

C. Tack Coat

- 1. Submit asphalt binder tack coat and asphaltic emulsion tack coat.

D. The Contractor shall develop and submit a Quality Control Plan for the project. This shall, at a minimum, cover the areas or subjects contained in Section 39-2 of the Standard Specifications. The Contractor shall not begin hot mix asphalt production or placement without written approval from the Engineer of the QCP and an approved JMF. Approval of the QCP and JMF by the Engineer does not relieve the contractor of responsibility for quality control or work methods.

1. Test Reports:

- a. Submit reports of tentative paving material design and testing.
- b. Submit reports of testing and inspection during the course of the Project.
 - 1) Submit all laboratory test reports for daily Rice Specific Gravity and Nuclear Gage field tests immediately upon receipt from the testing laboratory.
 - 2) Submit daily field summary reports for all testing activities.
 - 3) Submit current certificates from all laboratories immediately upon receipt from the testing laboratory. Certificates shall not be expired or more than 1 year old.
 - 4) Submit current certificates for mixes, materials and products immediately upon receipt from the testing laboratory or product supplier. Certificates shall not be expired for more than 1 year, and must reflect materials actually used on the project. JMF shall have no changes in aggregate, asphalt, or other materials from what was provided in current certificates.
- 2. Quality control sampling and acceptance testing shall be performed by the Contractor in accordance with Section 39-2.02.

1.4 ENGINEER'S ACCEPTANCE

- A. In addition to the Quality Control Plan, the Engineer may provide an independent quality assurance to perform independent sampling and acceptance testing in accordance with Section 39-2 of the Standard Specifications.
- B. Acceptance testing may be performed by the Engineer in accordance with Section 39-2.
- C. In place density tests per CT 375 Nuclear Gage field test may be performed during HMA operations by the Engineer to confirm compaction requirements are per Standard Specifications.

1.5 PRODUCT HANDLING

- A. All products described herein shall be handled in conformance to the applicable provisions of the Standard Specifications.

1.6 PROJECT CONDITIONS

A. Weather Limitations:

- 1. No HMA shall be placed when weather conditions prevent the proper handling, finishing, or compaction of the mixtures.
- 2. Do not apply when underlying surface is muddy, frozen or wet.
- 3. Do not place tack coat when temperature is below 45° F.

4. Do not place hot mix asphalt when air temperature is below 45° F and surface temperature is below 50° F.
- B. Traffic Striping and Pavement Markers
1. Do not apply pavement marking paint within 8 hours of fog or rain or when below 40 Degrees F.
 2. Contractor shall guarantee that all traffic lane pavement markers be in place and adhered to the pavement for a period of not less than 90 days from the date of acceptance of the work by the City.
 3. All new traffic striping and pavement markings shall be thermoplastic, unless otherwise shown on the Drawings.
 4. No pavement markings shall be applied to any roadway surface until new hot mix asphalt surface has cured for a minimum of seven (7) days when hot melt bituminous adhesive is used, and not less than 14 days when epoxy adhesive is used.

PART 46 PRODUCTS

1.1 TACK COAT

- A. Tack Coat, Grade PG 64-16, conforming to the provisions of Sections 39 and 92 of the Standard Specifications shall be used between layers of each lift of HMA, and on curbs, gutters and construction joints.

1.2 ASPHALT BINDER

- A. Asphalt binder, Grade PG 64-16, conforming to the provisions of Sections 39 and 92 of the Standard Specifications.

1.3 AGGREGATE

- A. Aggregate shall be clean and free from deleterious substances and shall meet the gradation and quality for 1/2-inch HMA Type A in the Caltrans Standard Specifications.

1.4 HOT MIX ASPHALT

- A. Hot Mix Asphalt shall be 1/2-inch HMA Type A and conform to the latest provisions of Section 39-2 of the Standard Specifications.
- B. HMA batch plant shall be Caltrans-qualified under the Caltrans Materials Plant Quality Program of the Standard Specifications.
- C. Reclaimed asphalt pavement shall be acceptable in accordance with the Standard Specifications not exceeding 15.0 percent of the aggregate blend.

1.5 THERMOPLASTIC AND TRAFFIC PAINT

- A. Provide thermoplastic in accordance with the Section 84-2.02B of the Standard Specifications.
- B. Provide traffic paint where shown on the Plans in accordance with Section 84-2.02C of the Standard Specifications.
- C. Provide glass beads in thermoplastic in accordance with Section 84-2.02D of the Standard Specifications.

1.6 TEMPORARY TRAFFIC STRIPING, PAVEMENT MARKINGS AND PAVEMENT MARKERS

- A. Provide temporary traffic striping, pavement markings and pavement markers in accordance with Section 12-6.03D of the Standard Specifications.

PART 47 EXECUTION

1.1 PROTECTION OF EXISTING STREET SURFACE

- A. During the entire construction period, the Contractor shall take care to protect existing pavement or sealed surfaces. Backhoes and trenchers must have street pads. Grossers or metal tipped pads will not be allowed. Surfaces scarred by cleanup or excavation equipment shall be repaired in a manner satisfactory to the Engineer. Any and all damage caused by the Contractor's operations to existing roads and streets shall be repaired by the Contractor to at least the original condition and to the satisfaction of the Engineer, at no additional cost to the City.
- B. If pavement is damaged (excessive loading, grouser marking, scarring/scraping of pavement, etc.) in adjacent lanes, a full lane width grinding and overlay will be required as directed by the City. If pavement is damaged due to excessive loading near the trench wall causing openings in the pavement, full depth structural section replacement will be required as directed by the City. If pavement restoration comes to within 4 feet from the edge of the pavement or lip of gutter/curb, pavement shall be replaced to the edge of pavement or lip of gutter/curb.

1.2 PAVING REMOVAL

- A. Sawcutting shall be required for all roads. See Section 31 23 00 "Trench Excavation and Backfill" for paving removal requirements.
- B. The upper 12 inches of subgrade and aggregate base shall be compacted to 95% relative compaction in accordance with ASTM D1557 prior to placement of HMA.
- C. Clean and dry subgrade area prior to commencing with placement of HMA

1.3 AGGREGATE BASE

- A. Aggregate base shall be spread and compacted according to Section 26 of the Standard Specifications. Compact to a minimum 95 percent relative compaction in accordance with ASTM D1557.

1.4 TACK COAT

- A. Ensure the area is clean and dry. All material accumulations which would interfere with the adhesion of the tack coat or with the placing and performance of the HMA shall be removed, including dust, loose aggregate, soil, leaves, and pieces or lumps of other foreign material deposited on the surface.
- B. A tack coat shall be applied to existing pavement including planed surfaces, between HMA layers, and to vertical surfaces of curbs, gutters and construction joints at the minimum residual rates specified in Section 39-2 of the Standard Specifications.
- C. Before placing HMA, a tack coat shall be furnished and applied uniformly to contact surfaces of all cold pavement joints, curbs, gutters, and all existing pavement to be surfaced in conformance with Section 39-2 of the Standard Specifications.
- D. Tack coat shall be applied to any course in advance of spreading the next course unless the surface temperature is at least 140 °F.

- E. Hot mix asphalt shall not be placed until tack coat has cured.
- F. Immediately in advance of placing HMA, apply additional tack coat to damaged areas or where loose or extraneous material is removed.
- G. Close areas receiving tack coat to traffic. Do not track tack coat onto pavement surfaces beyond the job site.
- H. The cost of applying tack coat will be considered included in the Contract Price and no additional compensation will be allowed therefore.

1.5 TRANSPORTING HOT MIX ASPHALT

- A. From mixing site in trucks having tight, clean compartments.
- B. Coat hauling compartments with lime-water mixture to prevent sticking.
- C. Elevate and drain compartment of excess solution before loading mix.
- D. Provide covers over asphalt concrete mixture to protect from weather and to prevent loss of heat.
- E. During periods of cold weather or for long distance deliveries, pre-insulation around entire truck bed surfaces.
- F. Do not use petroleum products such as kerosene or diesel fuel to release HMA from trucks, spreaders, or compactors.

1.6 HOT MIX ASPHALT

- A. HMA surfacing shall conform to the provisions of Section 39 of the Standard Specifications. Placing HMA shall be done under suitable weather conditions for such operations. Rain, snow or other inclement weather will be cause for discontinuing paving Work. The Engineer shall have the authority for determining whether weather conditions are sufficient cause to postpone work.

1.7 SPREADING AND COMPACTING

- A. Spreading and compacting shall be performed in accordance with Section 39-2 of the Standard Specifications.
- B. Longitudinal joints in the top layer must match specified lane edges shown on the striping plans. Longitudinal joints in lower HMA layers shall be offset at least 0.5 feet from each side of the specified lane edges.
- C. Finish rolling shall be completed before pavement surface temperature is below 150 degrees F.
- D. Traffic shall not be allowed on HMA until mid-depth temperature is below 160 degrees F and the pavement surface temperature is below 140 degrees F.

1.8 SMOOTHNESS AND DRAINAGE

- A. Verify smoothness and drainage using a water truck. Spray sufficient quantity of water to cause surface runoff from the entire newly paved surface. Any puddles and birdbaths deeper than 1/4 inch shall be corrected by sawcutting, removing and replacing HMA a sufficient distance from puddles and birdbaths to correct them, or by grinding. All smoothness and

drainage corrections to HMA shall be at the Contractor's expense and to the satisfaction of the Engineer.

1.9 TRENCH PATCHING

- A. All trench patches shall be limited to the width of the trench plus 1 foot on either side of the trench.

1.10 THERMOPLASTIC TRAFFIC STRIPES AND PAVEMENT MARKINGS

- A. Provide and maintain temporary traffic striping, pavement markings and pavement markers during the course of construction in accordance with Section 12 of the Standard Specifications.
- B. All new surfaces shall have the thermoplastic traffic stripes and markings applied in two applications in accordance with Section 84-2 of the Caltrans Standard Specifications.
- C. All striping and markings and pavement markers shall be laid out by the Contractor and field reviewed by the Engineer prior to final placement of the striping and marker materials. Failure to obtain this field review shall be basis for rejection of the work by the Engineer. Any work rejected shall be completely removed, the surface of the pavement restored to the satisfaction of the City, and new striping and marking placed at the Contractor's expense.
- D. Restriping except where indicated on the drawings, shall coincide with the original painting and shall be applied in one application in accordance with Section 84-2 of the Caltrans Standard Specifications.
- E. Where striping and markers joins existing striping and markers, as shown on the Drawings, the Contractor shall begin and end the transition from the existing striping pattern or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.
- F. All surfaces to be painted shall be clean and dry prior to painting. Ample time shall be allowed between placement of the asphalt pavement and the initial painting application. There shall be a minimum drying time between thermoplastic applications of approximately 20 minutes.
- G. Striping shall not be applied at temperatures below 50° F or if pavement surfaces are wet. Striping shall not be installed until seven (7) days after placement of hot mix asphalt.

1.11 CURB PAINTING

- A. The Contractor shall paint curbs with two coats of paint as shown on the Drawings in conformance with Section 84-2 of the Standard Specifications.

1.12 STREET MAINTENANCE

- A. Until the permanent pavement is placed, the base rock or temporary asphaltic plant mix at the surface of the trench shall be maintained at all times at a grade level with the adjacent street. Continuous inspection and maintenance of the trench area will be required. Lights and barriers shall be maintained on all Work that is not safe for travel until such time as is made safe.

1.13 CONTRACTOR'S RESPONSIBILITY

- A. Settlement of replaced pavement over trenches within the warranty period shall be considered the result of improper or inadequate compaction of the subbase or base materials. The Contractor shall promptly repair all pavement deficiencies noted during the warranty period.

END OF SECTION

SECTION 32 12 17

SLURRY SEAL

PART 48 GENERAL

1.1 DESCRIPTION

- A. Work included: Work covered in this section consists of performing all operations necessary for producing and placing slurry seal.

General intent: This section shall consist of furnishing and placing a Type II slurry seal onto existing asphalt cement (AC) pavement at locations and to the limits shown on the Plans in conformance with the requirements of Section 37-3 "Slurry Seals and Micro-Surfacing," of the Revised Standard Specifications and the International Slurry Seal Association Publication A105, dated February 2010 (copies available from www.slurry.org), except where specified otherwise in these Special Provisions.

The completed slurry seal shall leave a homogeneous mat, adhere firmly to the prepared surface, and have a friction resistant surface texture throughout its service life.

Cracks from ¼-inch and less than 1-inch in width shall be sealed per Section 37-6, "Crack Treatments" of these Special Provisions.

- B. Section Includes:

1. Aggregate
2. Slurry Seal

- C. Related Work described elsewhere:

1. Section 31 00 00 – Earthwork
2. Section 32 12 16 – Hot Mix Asphalt Paving

- D. References

1. AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (AASHTO)
 - a. T 44 2014 Standard Method of Test for Solubility of Bituminous Materials
 - b. T 49 2015 Standard Method of Test for Penetration of Bituminous Materials
 - c. T 51 2009 Standard Method of Test for Ductility of Asphalt Materials
 - d. T 53 2009 Standard Method of Test for Softening Point of Bitumen (Ring-and-Ball Apparatus)
 - e. T 59 2016 Standard Method of Test for Emulsified Asphalts
 - f. T 225 2016 Standard Method of Test for Diamond Core Drilling for Site Investigation
 - g. T 335 2009 Standard Method of Test for Determining the Percentage of Fracture in Coarse Aggregate
2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
 - a. C29M 2017 Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
 - b. D36 2014 Standard Test Method for Softening Point of Bitumen (Ring-and-Ball Apparatus)
 - c. D70 2018 Standard Test Method for Density of Semi-Solid Asphalt Binder (Pycnometer Method)
 - d. D92 2016 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester

- e. D140/140M 2016 Standard Practice for Sampling Asphalt Materials
 - f. D217 2017 Standard Test Methods for Cone Penetration of Lubricating Grease
 - g. D244 2009 Standard Test Methods and Practices for Emulsified Asphalts
 - h. D297 2015 Standard Test Methods for Rubber Products—Chemical Analysis
 - i. D445 2017 Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)
 - j. D562 2010 Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer
 - k. D2007 2011 Standard Test Method for Characteristic Groups in Rubber Extender and Processing Oils and Other Petroleum-Derived Oils by the Clay-Gel Absorption Chromatographic Method
 - l. D2042 2015 Standard Test Method for Solubility of Asphalt Materials in Trichloroethylene or Toluene
 - m. D3111 2010 Standard Practice for Flexibility Determination of Hot-Melt Adhesives by Mandrel Bend Test
 - n. D3723 2005 Standard Test Method for Pigment Content of Water-Emulsion Paints by Low-Temperature Ashing
 - o. D3910 2015 Standard Practices for Design, Testing, and Construction of Slurry Seal
 - p. D5329 2016 Standard Test Methods for Sealants and Fillers, Hot-Applied, for Joints and Cracks in Asphalt Pavements and Portland Cement Concrete Pavements
 - q. D4791 2010 Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
 - r. D6943 2015 Standard Practice for Immersion Testing of Industrial Protective Coatings and Linings
 - s. D7428 2015 Standard Test Method for Resistance of Fine Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus
 - t. D7741 2011 Standard Test Method for Measurement of Apparent Viscosity of Asphalt-Rubber or Other Asphalt Binders by Using a Rotational Hand Held Viscometer
 - u. E70 2007 Standard Test Method for pH of Aqueous Solutions With the Glass Electrode
3. CALIFORNIA TEST METHODS (CT)
- a. CT 125 1998 Sampling Highway Materials and Products Used in the Roadway Structural Sections
 - b. CT 202 2002 Method for Test for Sieve Analysis of Fine and Coarse Aggregates
 - c. CT 205 2010 Method of Test for Percentage of Crushed Particles
 - d. CT 208 2011 Method of Test for Apparent Specific Gravity of Fine Aggregates
 - e. CT 211 2010 Method of Test for Abrasion of Coarse Aggregate by Use of the Los Angeles Abrasion Testing Machine
 - f. CT 217 2011 Method of Test for Sand Equivalent
 - g. CT 227 2012 Method of Test for Evaluating Cleanness of Coarse Aggregate
 - h. CT 229 2011 Method of Test for Durability Index
 - i. CT 302 2014 Method of Test for Film Stripping
 - j. CT 331 2017 Method of Test for Residue by Evaporation of Latex Modified Asphaltic Emulsion
 - k. CT 332 2017 Method of Test for Torsional Recovery of Polymer Modified Asphalt Emulsion Residue

- l. CT 339 2000 Method of Field Test for the Determination of Distributor Spread Rate
 - m. CT 385 2007 Method of Test for Crumb Rubber Modifier
 - n. CT 388 2014 Method of Test for Sampling and Reheating Asphalt Rubber Binder Field Samples Prior to Viscosity Testing in Accordance to ASTM D 7741
 - o. CT 401 2012 Method of Test for Latex Concentration in Asphalt Emulsions
 - p. CT 413 2012 Determination of Chloride Content in Organic Additives for Portland Cement Concrete
 - q.
4. State of California, Business and Transportation Agency, Department of Transportation (Caltrans), Standard Specifications, 2018 edition excluding measurement and payment items.

1.2 SUBMITTALS

- A. At least 15 days before starting placement of a slurry seal or micro-surfacing, submit:
- 1. Asphaltic emulsion, polymer modified asphaltic emulsion, or micro-surfacing emulsion data as follows:
 - a. Supplier and Type/Grade of asphaltic emulsion;
 - b. Type of modifier polymer for polymer modified asphaltic emulsion or micro-surfacing emulsion; and
 - c. Copy of the specified test results for asphaltic emulsion, polymer modified asphaltic emulsion, or micro-surfacing emulsion.
 - 2. Aggregate test results for the followings:
 - a. Gradation;
 - b. Los Angeles Rattler;
 - c. Percent of crushed particles;
 - d. Sand equivalent; and
 - e. Durability.
- B. Submit a laboratory report of test results and the proposed mix design from an authorized laboratory. The authorized laboratory must sign the laboratory report and mix design. The report must include:
- 1. Test results used in the mix design compared with specification requirements
 - 2. Proportions based on the dry weight of aggregate, including ranges, for:
 - a. Aggregate;
 - b. Water;
 - c. Additives;
 - d. Mineral filler; and
 - e. Slurry seal emulsion or micro-surfacing emulsion residual asphalt content.
 - 3. Recommended changes to the proportions based on heating the mixture to 100 degrees F and mixing for 60 seconds, if atmospheric temperatures during application will be 90 degrees F or above, for:
 - a. Water;
 - b. Additives; and
 - c. Mineral filler.
 - 4. Quantitative moisture effects on the aggregate's unit weight determined under ASTM C29M
- C. If the mix design consists of the same materials covered by a previous laboratory report, you may submit the previous laboratory report that must include material testing data performed within the previous 12 months for authorization.

- D. If you change any of the materials in the mix design, submit a new mix design and laboratory report at least 10 days before starting slurry seal or micro-surfacing work.
- E. Submit a certificate of compliance as specified for asphaltic emulsion in section 94-1.01C of the Standard Specifications with each shipment of asphaltic emulsion, polymer modified asphaltic emulsion or micro-surfacing emulsion.
- F. The Contractor shall furnish to the Engineer weight or load slips verifying the quantities of aggregate and asphaltic emulsion. Slips shall be provided to the Engineer on the day of the delivery.

1.3 ENGINEER'S ACCEPTANCE

- A. Slurry seal acceptance is based on:
 - 1. Visual inspection for the following:
 - a. Uniform surface texture throughout work limits.
 - b. Marks in the surface:
 - 1) Up to 4 marks in the completed slurry seal that are up to 1 inch wide and up to 6 inches long per 1,000 square feet of slurry seal placed, at discretion of the Engineer.
 - 2) No marks in the completed slurry seal that are over 1 inch wide or 6-inches long.
 - c. Excessive raveling consisting of the separation of the aggregate from the polymer modified asphaltic emulsion.
 - d. Bleeding consists of the occurrence of a film of asphalt material on the surface of the slurry seal or micro-surfacing.
 - e. Delaminating of slurry seal from the existing pavement
 - f. Rutting or wash-boarding.
 - g. Any other visible defect in the quality of the work.

PART 49 PRODUCTS

1.1 AGGREGATE

- A. Aggregate for slurry seal must comply with the gradations shown for Type II. Aggregate for slurry seal shall be black in color.

1.2 SLURRY SEAL

- A. POLYMER MODIFIED ASPHALTIC EMULSIONS
 - 1. Asphalt emulsion shall be polymer modified asphalt emulsion, grade PMCQS1h cationic conforming with the requirements of Section 2.2(A) "Polymer Modified Asphaltic Emulsions" and conform to the requirements in the Standard Specifications.

PART 50 EXECUTION

1.1 GENERAL

- A. Prior to applying the slurry seal, loose materials, oil spots, dirt, pavement striping and markers, vegetation and other objectionable material that may compromise the slurry seal to be placed shall be removed from the existing surface and the pavement structural integrity shall be restored. The pavement surface shall be cleaned by sweeping, flushing or other means necessary to remove all extraneous material. The Engineer shall approve all surface preparation prior to the application of slurry seal.

- B. Use grinding or other approved methods for striping, pavement marking or pavement marker removal, including removal of existing double-sided yield to pedestrian object marker.
- C. Use grinding or other approved methods for striping, pavement marking or pavement marker removal, including removal of existing double-sided yield to pedestrian object marker.
- D. All crack sealing work shall be completed prior to application of slurry seal.
- E. Prior to commencing the slurry seal operation, all surface utility covers including but not limited to survey monuments, manholes, water valves, etc. shall be protected by thoroughly covering the surface with an appropriate adhesive and oiled or plastic paper. No adhesive material shall be permitted to cover, seal or fill the joint between the frame and cover of the structure. Covers are to be uncovered and cleaned of slurry material by the end of the same work day. The Contractor shall take precautions to remove any slurry that may cover these appurtenances.
- F. Protection and maintenance of the street surface to the condition required for proper slurry application shall be the sole responsibility of the Contractor and no additional expense will be allowed. The Contractor shall, at the direction of the City, repair and reseal all areas of the street which have not been sealed properly and completely or have been damaged by traffic.

1.2 PROPORTIONING

- A. Protection and maintenance of the street surface to the condition required for proper slurry application shall be the sole responsibility of the Contractor and no additional expense will be allowed. The Contractor shall, at the direction of the City, repair and reseal all areas of the street which have not been sealed properly and completely or have been damaged by traffic.
- B. The delivery rate of aggregate and emulsion per revolution of the aggregate feeder shall be calibrated at the appropriate gate settings for each mixer-spreader truck used on the project. The calibration shall demonstrate that delivery rates of dry aggregate and emulsion residue are within the recommended percentages stated in the laboratory mix design. The Contractor shall provide written calibration documentation for each application truck which has been performed within the last calendar year. The Contractor shall further provide a short calibration demonstrating gate settings and liquids are delivering job materials within the mix design recommended ranges.

1.3 MIXING AND SPREADING EQUIPMENT

- A. All equipment, tools, and machines used in the application of slurry seal shall be maintained in satisfactory working condition at all times. A minimum of two (2) slurry seal machines shall be on the job and in good operating condition at all times.
- B. The slurry seal shall be mixed in a self-propelled mixing machine equipped with a continuous flow pug mill, capable of accurately delivering and automatically proportioning the aggregate, emulsified asphalt, mineral filler, water and admixtures to a double shafted, multi-blade pug mill mixer capable of minimum speeds of 200 revolutions per minute. Mix retention time in the pug mill shall be less than three (3) seconds. The mixing machine shall have sufficient storage capacity of aggregate, emulsified asphalt, mineral filler and water to maintain an adequate supply to the proportioning controls and make fifteen (15) tons of emulsion mix.
- C. The mixing machine shall be equipped with hydraulic controls for proportioning the material by volume to the mix. Each material control device shall be calibrated, properly marked, pre-set and lockable.
- D. The mixing machine shall be equipped with a water pressure and nozzle type spray bars to provide a water spray immediately ahead of the spreader box. The mixing machine shall be equipped with an approved fines feeder that provides a uniform, positive, accurately metered,

pre-determined amount of the mineral filler at the same time and location that the aggregate is fed.

- E. A burlap drag or other approved flexible drag or screed shall be attached to the rear of the spreader box. A drag stiffened by hardened slurry is ineffective and is to be replaced immediately.
- F. The slurry seal retention time in the pug mill shall be less than three seconds. No retention of mixed slurry seal shall be allowed within the pug mill by gate shut-off or other mechanical means. Transit mix trucks shall not be used.

1.4 PLACEMENT

- A. The slurry seal (mixture) shall be spread per the application range requirements of Type II slurry seal per Section 3.4 "Placement," of the Standard Specifications.
- B. The slurry seal shall not be placed if either the temperature or the air temperature is below 55 degrees F and falling, but may be applied when both the air and pavement temperature is 45 degrees F or above and rising. The mixture shall not be applied if high relative humidity prolongs the curing beyond a reasonable time.
- C. Longitudinal joints shall be butt jointed and should be located outside of the typical wheel paths, where possible.
- D. Handwork shall be kept to a minimum. Areas which cannot be accessed by the mixing machine shall be surfaced using hand squeegees to provide complete and uniform coverage. Handwork shall exhibit the same finish as that applied by the spreader box and shall be completed prior to final surfacing. Hand tools shall be available to remove spillage. Ridges or bumps in the finished surface will not be permitted. The mixture shall be uniform and homogeneous after spreading on the existing surface and shall not show separation of the emulsion and aggregate after setting.
- E. The Contractor shall exercise care to prevent slurry from being deposited on concrete surfaces. The Contractor shall remove slurry from surfaces not designated to be sealed each day. No additional streets shall be slurry sealed until this clean-up has been performed. The method of slurry removal shall be approved by the City. All streets to be slurry sealed shall be sealed from edge of pavement to edge of pavement. The slurry shall fully extend up to the lip of gutter but shall not overlap the gutter by more than 1 inch. Excess overlay shall be removed by methods that shall not damage the remaining slurry seal. Spreaders to be used for this operation shall meet the approval of the City.
- F. The sites for stockpiling and batching materials shall be clean and free from objectionable materials and shall be located outside the road right-of-way. Arrangements for these sites shall be the responsibility of the Contractor. The Contractor shall provide to the City an executed written agreement with the property owner prior to commencing operations.
- G. Any areas of chatter (wash boarding), poor coating, delaminating, segregation, uneven surfaces or poor joints shall be corrected. If any of these conditions are observed, the placement of slurry seal shall be stopped until corrections are made to the equipment to prevent such defects. At the Contractor's expense, the Contractor shall be responsible for correcting any slurry placement that exhibits poor quality or workmanship, whether these conditions were observed during placement or after the slurry seal mix has cured.
- H. No loads may begin to be applied after 2:00 PM.
- I. The Contractor will only be permitted to continue with production if the following conditions are met:
 - 1. The pavement has been properly cleaned initially and thereafter as necessary;

2. Delivery tickets, samples and certificates of compliance are delivered to the Engineer by the end of the day (5:00 PM latest);
 3. Complete daily production records are delivered to the Engineer by the end of the day (5:00 PM latest); and
 4. Workmanship is acceptable including cleaning up of edges.
- J. After completing slurry seal application, the Contractor shall perform complete sweepings of the project and adjacent streets where any materials have been tracked.
- K. Within 4 hours after placement, slurry seals must be set enough to allow traffic without pilot cars. Protect slurry seals from damage until it has set and will not adhere or be picked up by vehicle tires. Slurry seals must not exhibit distress from traffic such as bleeding, raveling, separation or other distresses.

END OF SECTION

SECTION 33 05 13

MANHOLES

PART 1 GENERAL

1.01. SUMMARY

A. Section Includes:

1. Monolithic concrete manholes and structures, including catch basin, and channel drains, with transition to cover frame, covers, anchorage, and accessories.
2. Modular precast concrete manhole and structures with tongue-and-groove joints, covers, anchorage, and accessories.
3. Bedding and cover materials.

B. Related Sections:

1. Section 03 30 00 - Cast-in-Place Concrete
2. Section 31 00 00 - Earthwork.
3. Section 31 23 00 – Trench Excavation Backfill

1.02. REFERENCES

A. American Concrete Institute:

1. ACI 318 - Building Code Requirements for Structural Concrete.

B. ASTM International:

1. ASTM A48/A48M - Standard Specification for Gray Iron Castings.
2. ASTM C1244-20 - Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill
3. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
4. ASTM C497 - Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.
5. ASTM C913 - Standard Specification for Precast Concrete Water and Wastewater Structures.
6. ASTM C923 - Standard Specification for Resilient Connectors between Reinforced Concrete Manhole Structures, Pipes and Laterals.

1.03. DESIGN REQUIREMENTS

- A. Equivalent strength: Based on structural design of reinforced concrete as outlined in ACI 318.
- B. Design of Lifting Devices for Precast Components: In accordance with ASTM C913.

- C. Design of Joints for Precast Components: In accordance with ASTM C913; maximum leakage of 0.025 gallons per hour per foot of joint at 3 feet of head.

1.04. SUBMITTALS

- A. Section 01 33 00 - Submittals: Requirements for submittals.
- B. Product Data: Submit cover and frame construction, features, configuration, and dimensions.

1.05. QUALITY ASSURANCE

- A. Perform Work in accordance with City of Santa Rosa Sanitary Sewer Standard Specifications (Section 130).

1.06. QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

1.07. DELIVERY, STORAGE AND HANDLING

- A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.
- B. Comply with precast concrete manufacturer's instructions for unloading, storing and moving precast manholes and structures.
- C. Store precast concrete manholes and structures to prevent damage to Owner's property or other public or private property. Repair property damaged from materials storage.
- D. Mark each precast structure by indentation or waterproof paint showing date of manufacture, manufacturer, and identifying symbols and numbers shown on Drawings to indicate its intended use.

PART 2 PRODUCTS

2.01. MANHOLES

- A. Manholes: Reinforced precast concrete in accordance with ASTM C478 with gaskets in accordance with ASTM C923.
- B. Joint Seal:
 - 1. RAM-NEK or approved equal will be allowed for jointing.
- C. Pipe to Manhole Connectors:
 - 1. Flexible couplings shall be as manufactured by Mission Rubber Company or equal.

2.02. FRAMES AND COVERS

- A. Manufacturers:
 - 1. D&L Supply A-1024
 - 2. South Bay Foundry SBF 1900 CPH

3. Substitutions: Section 01 60 00 - Product Requirements.

B. Product Description:

1. Casting shall be first-class grey iron, tough, and of even grain, and shall be dipped after they have been thoroughly cleaned in asphalt that has been heated to not less than 200 degrees F.
2. Ring and cover shall be Phoenix Iron Works P-1090 or approved equal with closed pick hole.
 - a. All material used in manufacturing shall conform to A.S.T.M A-48 Class 35 B or of United States Government Specifications QQ1-652b.

2.03. CONFIGURATION

- A. Shaft Construction: Concentric with eccentric cone top section; lipped male/female joints; sleeved to receive pipe sections.
- B. Shape: Cylindrical.
- C. Clear Inside Dimensions: 48 inch diameter.
- D. Design Depth: As indicated on Drawings.
- E. Clear Cover Opening: As indicated on Drawings.
- F. Pipe Entry: Furnish openings as indicated on Drawings.

2.04. BEDDING AND COVER MATERIALS

- A. Bedding: Coarse Aggregate Subbase Fill as specified in Section 31 00 00.
- B. Soil Backfill from Above Pipe to Finish Grade: Engineered Fill, as specified in Section 31 00 00.

2.05. INFLOW PROTECTION

- A. Inflow Protector Insert: HDPE Syneco Systems PEACEMAKER Inflow Inserts, or approved equal. Size to match.

PART 3 EXECUTION

3.01. EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify items provided by other sections of Work are properly sized and located.
- C. Verify built-in items are in proper location, and ready for roughing into Work.
- D. Verify correct size of manhole and structure excavation.

3.02. PREPARATION

- A. Coordinate placement of inlet and outlet pipe or duct sleeves required by other sections.
- B. Do not install structures where site conditions induce loads exceeding structural capacity of structures.
- C. Inspect precast concrete structures immediately prior to placement in excavation to verify structures are internally clean and free from damage. Remove and replace damaged units.

3.03. INSTALLATION

- A. Excavation and Backfill:
 - 1. Excavate for manholes and structures in accordance with Section 31 23 00 in location and to depth shown. Provide clearance around sidewalls of structure for construction operations.
 - 2. When groundwater is encountered, prevent accumulation of water in excavations. Place manholes and structures in dry trench.
 - 3. Where possibility exists of watertight structure becoming buoyant in flooded excavation, anchor structure to avoid flotation.
- B. Place manhole base.
- C. Place manhole and structure sections plumb and level, trim to correct elevations, anchor to base.
- D. Backfill excavations for manholes and structures in accordance with Section 31 23 00.
- E. Form and place manhole and structures cylinder plumb and level, to correct dimensions and elevations.
- F. Cut and fit for pipe.
- G. Grout base of shaft sections to achieve slope to exit piping. Trowel smooth. Contour to form continuous drainage channel.
 - 1. The invert shall be shaped to provide an adequate channel between the inlet and outlet pipes. The channel and shelf shall be steel troweled to a smooth dense surface. Adequate care must be taken to prevent displacement of the sewer pipe from line or grade during construction of the base.
 - 2. The Contractor shall have the option of laying pipe through the manhole, shaping the upper half of the channel and the shelf, and later breaking out the pipe above the spring line, in which case they will be required to patch and smooth up with mortar the broken edges of pipe, or they may stop the pipe at the inside face of the manhole and construct the channel to the shape and size of the pipe. The invert shall follow a straight line between the inlet and outlet pipe, or a smooth curve on an even grade, if changing direction.
- H. Set cover frames and covers level without tipping, to correct elevations.

3.04. PRECAST CONCRETE MANHOLE INSTALLATION

- A. Lift precast components at lifting points designated by manufacturer.

- B. When lowering manholes and structures into excavations and joining pipe to units, take precautions to ensure interior of pipeline and structure remains clean.
- C. Set precast structures bearing firmly and fully on crushed stone bedding, compacted in accordance with provisions of Section 31 23 00 or on other support system shown on Drawings.
- D. Assemble multi-section structures by lowering each section into excavation. Lower, set level, and firmly position base section before placing additional sections.
- E. Remove foreign materials from joint surfaces and verify sealing materials are placed properly. Maintain alignment between sections by using guide devices affixed to lower section.
- F. Joint sealing materials may be installed on site or at manufacturer's plant. Joints shall be filled with mortar consisting of one (1) part cement to three (3) parts sand by volume before placing each section, and after the shaft is in place the joints inside and outside shall be neatly stuck and outside joints shall be banded to insure waterproofing the completed structure.
- G. Verify manholes and structures installed satisfy required alignment and grade.
- H. Remove knockouts or cut structure to receive piping without creating openings larger than required to receive pipe. Fill annular space with mortar.
- I. Cut pipe to finish flush with interior of structure.
- J. Shape inverts through manhole and structures as shown on Drawings.

3.05. FRAME AND COVER INSTALLATION

- A. Set frames using mortar and masonry.
- B. Set frame and cover 2 inches above finished grade for manholes with covers located within unpaved areas to allow area to be graded away from cover beginning 1 inch below top surface of frame.
- C. Casting shall be first-class grey iron, tough, and of even grain, and shall be dipped after they have been thoroughly cleaned in asphalt that has been heated to not less than 200 degrees F. After castings have seasoned sufficiently so that there will be no further distortion due to temperature changes, the cover and ring seat shall be machined so that the tops are flush and the entire area of the seat is in contact with the cover in any position of the cover on the seat.

3.06. FIELD QUALITY CONTROL

- A. Section 01 40 00 – Quality Control: Field inspecting, testing, adjusting, and balancing.
- B. Test concrete manhole and structure sections in accordance with ASTM C-1244-20.
- C. Each manhole shall be tested for leakage by plugging the sewer line between the manhole and the first joint. The manhole shall be filled with water to the rim of the frame casting and shall lose no more than 2 inches over a period of 30 minutes. In lieu of water testing, testing of sewer manholes may be done by vacuum testing per the City of Santa Rosa Sanitary Sewer Standard Specifications (Section 130) and ASTM C 1244-20.

END OF SECTION

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SECTION 33 11 00

WATER UTILITIES

13 GENERAL

1 DESCRIPTION

a Section includes: The Contractor shall provide all materials, equipment, and labor necessary to furnish and install all water pipe with all necessary fittings and coupling systems and all appurtenant work, complete and operable, including all connections as shown on the Drawings and as specified herein.

b All water piping materials, equipment and installation shall be in accordance with the AWWA Standards and be NSF-61 certified.

c Section includes:

- i Water Main Piping.
- ii Gate Valves.
- iii Couplings.
- iv Bolts and Nuts for Underground Piping and Valves.
- v Restrained Joints.
- vi Service Saddles.
- vii Tapping Sleeves.
- viii Corporation Stops.
- ix Angle Meter Ball Valves/Curb Stops.
- x Service Piping and Fittings.
- xi Service Elbows.
- xii Valve boxes.
- xiii Tracer Wire.

2 RELATED WORK SPECIFIED ELSEWHERE

- a Division 1 - General Requirements.
- b Section 03 30 00 – Cast-In-Place Concrete.
- c Section 31 01 40 - Shoring and Trench Safety.
- d Section 31 23 00 - Trench Excavation and Backfill.
- e Section 31 23 19 - Dewatering.
- f Section 33 13 00 – Disinfecting of Water Utilities

3 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- a American Public Works Association (APWA)
 - i Uniform Color Code for Marking of Underground Utility Locations.
- b American Society of Testing and Materials (ASTM)
 - i ASTM A193 – Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High Temperature or High Pressure Service and Other Special Purpose Applications
 - ii ASTM A194 – Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both

- iii ASTM A536 – Standard Specification for Ductile Iron Castings
 - iv ASTM D2737 – Standard Specification for Polyethylene (PE) Plastic Tubing
 - v ASTM F477 – Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- c American Water Works Association (AWWA)
- i AWWA C104 – Standard for Cement–Mortar Lining for Ductile-Iron Pipe and Fittings
 - ii AWWA C105 – Polyethylene Encasement for Ductile-Iron Pipe Systems
 - iii AWWA C110 – Standard for Ductile-Iron and Gray-Iron Fittings
 - iv AWWA C111 – Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
 - v AWWA C153 – Standard for Ductile-Iron Compact Fittings for Water Service
 - vi AWWA C504 – Standard for Rubber-Seated Butterfly Valves.
 - vii AWWA C509 – Resilient-Seated Gate Valves for Water Supply Service
 - viii AWWA C550 – Protective Interior Coatings for Valves and Hydrants
 - ix AWWA C600 – Installation of Ductile Iron Water Mains and their Appurtenances.
 - x AWWA C901 – Standard for Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) through 3 In. (76 mm), for Water Service – PE material designations PE 2708, PE 3608, and PE 4710.
- d National Fire Protection Association (NFPA):
- i 24 95 Installation of Private Fire Service Mains and Their Appurtenances
 - ii 291-01 Fire Flow Testing and Marking of Hydrants
- e NSF International:
- i 61-2022 Drinking Water System Components-Health Effects (Sections 1-9)
- f American Welding Society (AWS):
- i A5.8 04 Brazing Filler Metal
- g Foundation for Cross-Connection Control and Hydraulic Research-2022
- h Copper Development Association Copper Tube Handbook-2010
- i City of Santa Rosa Water Standard Specifications (Section 132)

4 QUALITY ASSURANCE

- a Standards: The materials and work performed in this Section shall conform to the applicable standards of:
- i The American National Standards Institute (ANSI).
 - ii The American Society for Testing and Materials (ASTM).
 - iii American Water Works Association Inc. (AWWA).
 - iv The National Sanitation Foundation (NSF).
 - v The American Society of Mechanical Engineers, Boiler and Pressure Vessel Code (ASME).
 - vi Plumbing and Drainage Institute (PDI).
 - vii Underwriters Laboratories Inc. (UL).
 - viii Uniform Plumbing Code (UPC).
 - ix National Fire Protection Association (NFPA).
 - x Factory Mutual Research Corporation (FMRC).
 - xi City of Santa Rosa Water Standard Specifications (Section 132).
- b Tests: All materials used in the manufacture of the pipe shall be tested in accordance with the requirements of AWWA and NSF-61, and the referenced standards, as applicable, in addition to national, local, and state codes.

- c Contractor shall coordinate with and provide a minimum 48 hour notice to the City for all inspections.
- d All costs of inspection and tests shall be borne by the Contractor.
- e The pipe shall be subjected to the specified hydrostatic strength tests, flexure tests, and crushing tests. Hydrostatic testing procedures shall be per City of Santa Rosa Water Distribution System Construction Standard Specifications - Section 132-1.18. The crushing tests shall be made on samples taken from the center of full-length sections of pipe.
- f The Contractor shall verify with the pipe manufacturer all connection details.
- g Qualification of manufacturers:
 - i The material shall be the product of a supplier regularly engaged in the manufacturing of pipe and plumbing products.
 - ii All materials shall be new and of current manufacture and shall be guaranteed against defects or workmanship in accordance with the General Conditions.
- h Qualification of installers:
 - i For the actual assembly, installation, and testing of the work in this Section, use only thoroughly trained and experienced personnel who are completely familiar with the requirements for this work and with the installation recommendations of the manufacturers of the specified items.
 - ii In acceptance or rejection of installed materials, no allowance will be made for lack of skill on the part of installers.

5 CONTRACTOR SUBMITTALS

- a Submittals shall be in accordance with Section 01 33 00, "Submittal Procedures". Submit complete shop drawings including layouts, elevations, and details to the Engineer.
- b Submit all product data, shop drawings, laboratory test results, hydrostatic testing procedures, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.
- c Material List:
 - i In accordance with the provisions of Section 01 33 0 "Submittal Procedures" of the Specifications, submit with the shop drawings a complete list of all materials and equipment proposed to be furnished and installed under this portion of the work, giving manufacturer's name, catalog number, and catalog cuts for each item where applicable.
- d Manufacturers' Literature and Data (Submit all items as one submittal package for review):
 - i Piping.
 - ii Gaskets.
 - iii Valves.
 - iv Service line products.
 - v Valve boxes.
 - vi Joint restraint.
 - vii Tapping sleeves.
 - viii Couplings.
 - ix Disinfection products.
 - x Tracing Wire.
- e Testing Certifications:
 - i Hydrostatic Testing
 - ii Certification of Disinfection, including free chlorine residuals, and bacteriological examinations.

- f Manufacturer's recommendations:
 - i Accompanying the materials list and shop drawings, submit four copies of the manufacturer's current recommended method of installation.
- g Certificates of Compliance: Certificates of Compliance shall be provided for all products and materials proposed to be used under this Section.

6 COORDINATION

- a Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

7 DELIVERY, STORAGE, AND HANDLING:

- a Coated pipe shall be shipped on bunks, and secured with nylon belt tied down straps or padded banding located approximately over braces. Coated pipe shall be stored on padded skids, sand or dirt berms, sand bags, old tires or other suitable means so that coating will not be damaged. Coated pipe shall be handled with the wide belt slings, padded forks, or other means that will not damage the pipe or coating. Chains, cables or other equipment likely to cause damage to the pipe or coating shall not be used. Prior to shipment, the pipe shall be visually inspected for damage to the coating. Any damaged areas shall be repaired at the Contractor's expense in accordance with the standard to which the coating was applied.
- b Deliver and store valves and other materials and appurtenances in shipping containers with labeling in place.

14 PRODUCTS

1 GENERAL

- a These Specifications are intended to be standard specifications and they may therefore contain specifications for materials not required for this project or allowed on any or various parts of it. Certain materials, which are applicable for only one portion or a small portion, may be shown on the plans and not particularly specified herein.
- b All materials shall conform to sizes, capacity, quality and quantities as shown on the drawings or described in these Specifications. Materials shall be from new stock, delivered in good condition. No damage to stock shall be used.
- c Where no method of tests for materials is specified, the latest applicable test specified by ASTM or AWWA shall be followed.
- d After delivery to the site, all materials shall be carefully unloaded, protected against breakage, rusting, accumulation of foreign matter, disintegration, and injury. The Contractor shall be responsible for all lost or damaged material supplied and work done under this contract.

2 WATER MAIN PIPING

- a PVC Pipe
 - i Application: Below Grade Pipe Only.
 - ii The pipe shall be manufactured in strict compliance to AWWA Standard C900, consistently meeting and/or exceeding the Quality Assurance test requirements of this standard with regard to pressure rating, material, workmanship, burst pressure, flattening, impact resistance, and extrusion quality.
 - iii Pipe: C900 PVC (DR 18) ASTM D1784, Cell Classification of 12454
- b Class: DR14 for all water main piping. Ductile Iron Fittings (below grade):
 - 1 Ductile iron: ANSI/AWWA C110/A21.10.
 - 2 Compact fittings ANSI/AWWA C153/A21.53.

- 3 Coating and Lining:
 - a Bituminous Coating: ANSI/AWWA C110/A21.10.
 - b Cement Mortar Lining: ANSI/AWWA C104/A21.4, double thickness.
 - c Jackets: ANSI/AWWA C105/A21.5 polyethylene jacket.

3 GATE VALVES

- a Size: 2-inch to 12-inch.
- b City of Sebastopol Standard 877.
- c Resilient Wedge Gate Valves: AWWA C509 and/or C515 of the latest versions.
 - i Body Material: ductile iron.
 - ii Working Pressure: 250psig.
 - iii Seat: Resilient.
 - iv Stem: Non-rising bronze stem with O-ring stem seals.
 - v Operating Nut: 2-inch square; open counterclockwise unless otherwise indicated.
 - vi Ends: Flanged or mechanical joint end connections.
 - vii Coating: 12-mil holiday-free epoxy AWWA C550; interior/exterior.
 - viii Bolting: Paragraph 2.5.
- d Manufacturers:
 - i Mueller Company
 - ii Clow Eddy – Iowa
 - iii US Pipe
 - iv American Flow Control
 - v Substitutions: Section 01 60 00 - Product Requirements.

4 COUPLINGS

- a Restrained Coupling
 - i Type: AWWA C219, NSF 61 listed.
 - ii Body: Ductile Iron; ASTM A536
 - iii Bolts: 316 stainless steel.
 - iv Coating: AWWA C550; interior/exterior.
 - v Pressure rating: meet or exceed adjacent piping system rating.
 - vi System compatible with connecting pipe; verify connecting pipe O.D.
- b Restrained Flange Coupling Adaptor
 - i System: restrain plain end of pipe to a flange, conforming to AWWA C110.
 - ii Body: Ductile Iron; ASTM A536
 - iii Bolts: 316 stainless steel,
 - iv Coating: AWWA C550; interior/exterior.
 - v Pressure rating: meet or exceed adjacent piping system rating.
 - vi System compatible with connecting pipe; verify connecting pipe O.D.
- c Manufacturers:
 - i Ford - Ultra-Flex
 - ii Romac - XR501
 - iii Smith-Blair - Quantum Series
 - iv Hymax - 860 Series
 - v Substitutions: Section 01 60 00 - Product Requirements.

5 BOLTS FOR UNDERGROUND PIPING AND VALVES

- a Bolts: ASTM A307, Grade B heavy hex head. External valve bolts and nuts shall be stainless steel Type 304 or better.

- b Nuts: ASTM A563, heavy hex nuts. External valve bolts and nuts shall be stainless steel Type 304 or better.
- c Plastic washers and sleeves for dielectric joints shall be provided.
- d All nuts and bolts shall have a fluoropolymer coating. Fluoropolymer coating for bolts and nuts shall be applied at a nominal thickness of 1 mil. and baked on. Coating shall have a minimum kinetic friction coefficient of 0.08. Coating shall be Tripac 2000 Blue Coating System, or approved equivalent.

6 RESTRAINED JOINTS

- a Manufacturer:
 - i EBAA Iron - Series 2000PV Megalug.
 - ii Romac Industries, Inc. - Romagrip.
 - iii Substitutions: Section 01 60 00 - Product Requirements.
- b Materials: ductile iron, ASTM A536.
- c Coating: Fusion bonded epoxy, MEGA-BOND or approved equivalent.
- d Pressure rating: minimum working pressure rating equivalent to the pipe.

7 SERVICE SADDLES

- a City of Sebastopol Standard 864 & 863A.
- b Materials: Bronze and stainless steel nylon coated of the double strap type.
- c Saddle shall be stamped for use with ductile iron pipe.
- d Manufacturer:
 - i Ford - 202BS, FC202, FS303
 - ii Jones - J 969 Series
 - iii McDonald – 3845, 3855
 - iv Mueller - DR 2 S Series, BR 2 S Series
 - v Romac - 202BS, 202NS
 - vi Smith-Blair 317, 393Substitutions: Section 01 60 00 - Product Requirements.

8 TAPPING SLEEVES

- a Material: Cast Iron Stainless steel
- b Sleeve must be compatible with pipe type.
- c Manufacturers:
 - i Dresser: Style 630.
 - ii Ford: FTSS
 - iii JMC: 415
 - iv JCM: 432
 - v McDonald 3845, 3855
 - vi Mueller: H-304
 - vii Powerseal: 3490
 - viii Romac: SST111
 - ix Smith-Blair: 663, 664 & 665
 - x Substitutions: Section 01 60 00 - Product Requirements.

9 CORPORATION STOPS

- a Materials: Bronze no-lead alloy conforming to AWWA C800 and ASTM B62.
- b Manufacturer:
 - i Mueller: B-25008N
 - ii Ford: FB 1000-4-Q-NL - 1", FBI000-6-Q-NL - 1-1/2".
 - iii Jones: E -3401SG- 1", E19375SG - 1" & 1-1/2".
 - iv McDonald: 74701BQ
 - v Substitutions: Section 01 60 00 - Product Requirements.

10 CURB STOPS

- a Materials: Bronze no-lead alloy conforming to AWWA C800 and ASTM B62.
- b Manufacturer: Mueller B-24286.
- c Substitutions: Section 01 60 00 - Product Requirements.

11 SERVICE PIPING AND FITTINGS

- a Per City of Sebastopol Standard 864 & 863A.
- b Piping Material (HDPE):
 - i Material: High Density Polyethylene per ANSI/AWWA C901 and ASTM D2737 -02
 - ii Size: Blue Copper Tubing Size (CTS) SDR 9
 - iii Pressure Class: PE3608 – 200 psi tubing or PE 4710 – 250 psi tubing
- c Piping Material (Copper)
 - i Type "K" hard temper copper
 - ii Materials: Per AWWA C800 and ASTM B88
- d Size: ¾", 1", 1-1/2" Per Approved Plans.

12 SERVICE ELBOW

- a Materials: Bronze no-lead alloy conforming to AWWA C800 and ASTM B62.
- b Manufacturer:
 - i Ford.
 - ii Jones
 - iii McDonald
 - iv Mueller H 15533.
 - v Substitutions: Section 01 60 00 - Product Requirements.

13 BLOW OFF - BALL VALVES

- a Per City of Sebastopol Standards 861
- b Manufacturer:
 - i Ford - B11-777W-NL
 - ii Jones - E-1900W
 - iii McDonald - 76101W
 - iv Mueller - B-20200N
 - v Substitutions: Section 01 60 00 - Product Requirements.

14 ANGLE BALL VALVES

- a Per City of Sebastopol Standards 863-A and 864

- b Manufacturers:
 - i Ford - BA13-332W-NL, BA43-342W-Q-NL, BA43-444W-Q-NL-1”
 - ii Jones - E-1966W, E-1963WSG
 - iii McDonald - 74604B, 74602BQ
 - iv Mueller - B-24265N, B-24258
 - v Substitutions: Section 01 60 00 - Product Requirements.

- 15 COMBINATION AIR VACUUM VALVE
 - a Manufacturer:
 - i APCO: 143C.
 - ii Crispin: UL10.
 - iii Valmatic: VM-201C

- 16 BUG SCREEN
 - a Manufacturer:
 - i Flow Ezy: “M8” Pipe mounted suction screen.

- 17 PIPE EMBEDMENT MATERIAL
 - a Unless otherwise specified or shown, all material used for pipe embedment shall be as specified in Section 31 23 00, “Trench Excavation and Backfill.”

- 18 VALVE BOXES
 - a Valve boxes:
 - i Manufacturer: Christy Model G5.
 - ii Substitutions: Section 01 60 00 - Product Requirements.

- 19 PIPE & JOINT SLEEVES
 - a Ductile iron or zinc coated steel.

 - b Mechanical Joint Solid Sleeve:
 - i Manufacturers:
 - 1 Tyler Union
 - 2 Star
 - 3 Sigma
 - 4 U.S. Pipe

- 20 TRACER WIRE
 - a Manufacturers:
 - i Pro-Line
 - ii Substitutions: Section 01600 - Product Requirements.

 - b Characteristics:
 - i Type: THWN
 - ii Gage: No. 12
 - iii Materials: Copper conductor, PVC insulation, nylon jacket.

- 21 ACCESSORIES
 - a Non-shrink Grout: Specified in Section 03 30 00.

15 EXECUTION

1 EXAMINATION

- a Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- b Verify existing utility water main size, location, and inverts are as indicated on Drawings.

2 PREPARATION

- a Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs. Use only equipment specifically designed for pipe cutting. Use of chisels or hand saws will not be permitted. Grind edges smooth with beveled end for push-on connections.
- b Remove scale and dirt on inside and outside before assembly.
- c Prepare pipe connections to equipment with flanges or unions.
- d Cutting of Asbestos Cement Pipe (ACP) shall be done utilizing a Pipe Cutter (snapper), of the proper type and size for intended use. A ratcheting hand snapper shall only be used on ACP sizes of 6 inch and smaller. The "snapper", and all appurtenances shall have been inspected by the Contractor to ensure that it is in good working order prior to use. If field conditions require an alternative method for cutting of the ACP, the alternative method shall comply with all laws and requirements as specified by OSHA, the Contractor's State Licensing Board, and any other governing body for this type of work. In all cases, cutting, handling, and disposal shall be done per the above stated governing bodies. Cut pipe shall be properly enclosed as soon as possible after removed from the trench.

3 BEDDING AND BACKFILL

- a 2-inch to 12-inch Pipe
 - i Install bedding per plan.
 - ii Install backfill per plan.

4 INSTALLATION - PIPE

- a Install pipe in accordance with manufacturer's instructions and AWWA.
- b Maintain separation of water main from sewer piping in accordance with State of California Department of Public Health code or per the Plans.
- c Install pipe to indicated elevation to within tolerance of 5/8 inches.
- d Route pipe in straight line.
- e Install pipe with no high points. If field conditions arise which necessitate high points, install air release valves as directed by Engineer.
- f Install pipe to have bearing along entire length of pipe. Excavate bell holes to permit proper joint installation. Do not lay pipe in wet or frozen trench.
- g Install pipe to allow for expansion and contraction without stressing pipe or joints.
- h Close pipe openings with watertight plugs during work stoppages.
- i Install access fittings to permit disinfection of water system.
- j Form and place concrete for thrust restraints at each elbow or change of direction of pipe main.

k Establish elevations of buried piping with not less than 4 feet of cover. Measure depth of cover from final surface grade to top of pipe barrel.

l Install pipe warning tape continuous over top of pipe buried 6 inches below finish grade, above pipe line.

5 INSTALLATION - VALVES

a Gate Valves: Install valves per Plan.

b Set valves on solid bearing compacted soil.

c Center and plumb valve box over valve. Set box cover flush with finished grade.

6 POLYETHYLENE ENCASEMENT

a Encase ductile iron fittings in polyethylene to prevent contact with surrounding backfill material.

b Install in accordance with AWWA C105.

c Terminate encasement 3 to 6 inches above ground where pipe is exposed.

7 PIPE SLEEVES:

a Install where water lines pass through retaining walls, building foundations and floors. Seal with modular mechanical type link seal. Install piping so that no joint occurs within a sleeve. Split sleeves may be installed where existing lines pass through new construction.

8 THRUST RESTRAINT

a Install clamps, set screw retainer glands, or restrained joints. Protect metal restrained joint components against corrosion by applying a bituminous coating, or by concrete mortar encasement of metal area. Do not encase pipe and fitting joints to flanges.

9 BACKFILLING

a Backfill around sides and to top of pipe per trench detail in the Plan.

b Maintain optimum moisture content of bedding material to attain required compaction density.

10 DISINFECTION OF POTABLE WATER PIPING SYSTEM

a Flush and disinfect system in accordance with Section 33 13 00.

11 FIELD QUALITY CONTROL

a Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

b Compaction Requirements: In accordance with Section 31 23 00.

c When tests indicate Work does not meet specified requirements, remove Work, replace and retest at the Contractor's expense.

12 PRESSURE TESTING

- a Prior to acceptance of the Work by the City, the Contractor shall perform pressure testing on potable water distribution systems in accordance with City Standards and:
 - i AWWA C600 for ductile iron pipe.
 - ii AWWA C605 for PVC pipe.
 - iii AWWA C901 for Polyethylene pressure pipe.

- b When tests indicate Work does not meet specified requirements, remove Work, replace and retest at the Contractor's expense.

END OF SECTION

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SECTION 33 13 00

DISINFECTING OF WATER UTILITIES

PART 51 GENERAL

1.1 SUMMARY

- A. Section includes disinfection of potable water systems and tanks; and testing and reporting results.
- B. **Related Sections:**
 - 1. **Section 33 11 00 – Water Utilities.**

1.2 REFERENCES

- A. City of Sebastopol Standards.
- B. City of Santa Rosa Water Standard Specifications (Section 132).
- C. American Water Works Association:
 - 1. AWWA B301 - Liquid Chlorine.
 - 2. AWWA C651 - Disinfecting Water Mains.

1.3 SUBMITTALS

- A. Submit all product data, shop drawings, laboratory test results, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.
- B. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- C. Disinfection Procedure: Submit procedure description including type of disinfectant and calculations indicating quantities of disinfectants required to produce specified chlorine concentration in accordance with Section 4 of AWWA C651. Submit proposed water disposal and de-chlorination procedure.
- D. Product Data: Submit procedures, proposed chemicals, and treatment levels for review.
- E. Test Reports: Indicate results comparative to specified requirements.
- F. Certificate: Certify cleanliness of water distribution and storage system meets or exceeds specified requirements.

1.4 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.
- B. City will collect samples for disinfection residual testing. Reporting may include:
 - 1. **Type and form of disinfectant used.**
 - 2. **Date and time of disinfectant injection start and time of completion.**
 - 3. **Test locations.**
 - 4. **Name of person collecting samples.**
 - 5. **Initial and 24-hour disinfectant residuals in treated water in ppm for each outlet tested.**
 - 6. **Date and time of flushing start and completion.**
 - 7. **Disinfectant residual after flushing in ppm for each outlet tested.**
- C. City will collect samples for bacteriological testing. Reporting may include:
 - 1. **Date issued, project name, and testing laboratory name, address, and telephone number.**

2. Time and date of water sample collection.
 3. Name of person collecting samples.
 4. Test locations.
 5. Initial and 24 hour disinfectant residuals in ppm for each outlet tested.
 6. Coliform bacteria test results for each outlet tested.
 7. Certify water conforms, or fails to conform, to bacterial standards of authority having jurisdiction.
- D. Water Quality Certificate: City will verify water conforms to quality standards of authority having jurisdiction, suitable for human consumption.
- 1.5 QUALITY ASSURANCE
- A. Perform Work in accordance with AWWA C651.
 - B. Neutralize disinfectant solution and chlorinated water before disposal.
 - C. Legally dispose of disinfection solution and chlorinated water .
 - D. Repair damage caused by disinfectant solution and disinfection procedures.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. Section 01 60 00 - Product Requirements : Requirements for transporting, handling, storing, and protecting products.
 - B. Store disinfectants in cool, dry place away from combustibles such as wood, rags, oils and grease.
 - C. Handle disinfectants with caution; protect skin and eyes from contact; avoid breathing vapors; wear gloves, aprons, goggles, and vapor masks.

PART 52 - PRODUCTS

1.1 DISINFECTION CHEMICALS

- A. Chlorine Forms: In accordance with AWWA C651, Section 4.

PART 53 - EXECUTION

1.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify piping system has been cleaned, inspected, and pressure tested and accepted.
- C. Perform scheduling and disinfecting activity with start-up, water pressure testing, adjusting and balancing, demonstration procedures, including coordination with related systems.

1.2 APPLICATION

- A. Provide and attach required equipment to perform the Work of this section.
- B. Comply with California Department of Public Health Disinfection Requirements.
- C. Perform disinfection of water distribution system during installation of system and pressure testing. Refer to Section 33 11 00.

- D. Introduce treatment into piping system.
 - E. Maintain disinfectant in system for 24 hours.
 - F. Dechlorinate, flush, circulate, and clean until required cleanliness is achieved; use municipal domestic water.
 - G. Replace permanent system devices removed for disinfection.
- 1.3 FIELD QUALITY CONTROL
- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
 - B. Pipeline Disinfection, Flushing, and Sampling:
 - 1. Disinfect pipeline installation in accordance with AWWA C651.
 - 2. Upon completion of retention period required for disinfection, flush pipeline until chlorine concentration in water leaving pipeline is no higher than that generally prevailing in existing system or is acceptable for domestic use.
 - 3. Legally dispose of chlorinated water. When chlorinated discharge may cause damage to environment, apply neutralizing chemical to chlorinated water to neutralize chlorine residual remaining in water.
 - 4. After final flushing and before pipeline is connected to existing system, or placed in service, request City to sample, test and certify water quality suitable for human consumption. Do not proceed with pipeline connection work until test is certified and City authorizes work to proceed.

END OF SECTION

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SECTION 33 31 00

SANITARY UTILITY SEWERAGE PIPING

PART 4 GENERAL

4.01. SUMMARY

- A. Section Includes:
 - 1. PVC sanitary sewage pipe.
 - 2. Underground pipe markers.
 - 3. Bedding and cover materials.

- B. Related Sections:
 - 1. Section 31 00 00 - Earthwork.
 - 2. Section 33 05 13 – Manholes
 - 3. Division 2

4.02. REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 10-lb Rammer and a 18-in. Drop.

- B. ASTM International:
 - 1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³).
 - 2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³).
 - 3. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
 - 4. ASTM D2729 - Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 - 5. ASTM D2751 - Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Sewer Pipe and Fittings.
 - 6. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 7. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
 - 8. ASTM D3034 - Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 - 9. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

- C. Others specified

4.03. DEFINITIONS

- A. Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations.

4.04. SUBMITTALS

- A. Section 01 33 00 - Submittals: Requirements for submittals.

- B. Submit all product data, shop drawings, laboratory test results, leakage testing details including testing equipment, material source information, and certificates of compliance listed in this Section under a single submittal cover for review. Incomplete submittals will not be reviewed.
- C. Materials List
1. In accordance with the provisions of Section 01 33 0 "Submittal Procedures" of the Specifications, submit with the shop drawings a complete list of all materials and equipment proposed to be furnished and installed under this portion of the work, giving manufacturer's name, catalog number, and catalog cuts for each item where applicable.
 2. The Contractor shall use a single manufacturer for each of the following types of items unless otherwise approved by the Engineer.
 - Pipe
 - Fittings
 - Lateral cleanout plug
- D. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
- E. Testing Certifications:
1. Leakage Testing
- F. Bypass pumping and/or diversion system plan (if required). This shall include temporary documentation of pump and discharge line capacities, manufacturer, and age. Bypass pumping plan shall also include shop drawings that identify pumping locations and methods with sufficient detail to assure that the work can be accomplished without sewage spills. The plans shall include an emergency discharge response plan to be followed in the event of a failure of the bypass pumping system.

4.05. CLOSEOUT SUBMITTALS

- A. Section 01 70 00 – Project Closeout: Requirements for submittals.
- B. Project Record Documents: Record location of pipe runs, connections, manholes, cleanouts, and invert elevations.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

4.06. QUALITY ASSURANCE

- A. Perform Work in accordance with City Standard Plans.
- B. Perform Work in accordance with City of Santa Rosa Sanitary Sewer Standard Specifications (Section 130).

4.07. FIELD MEASUREMENTS

- A. Verify field measurements and elevations are as indicated.

4.08. COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

PART 5 PRODUCTS

5.01. SANITARY SEWAGE PIPE

- A. Color: Green
- B. Gravity PVC Laterals and Mains (size 4-inch and larger): ASTM D3034 and ASTM F-679, Poly (Vinyl Chloride) (PVC) material; inside nominal diameter as specified on the Drawings, bell and spigot style rubber ring sealed gasket joint.
 - 1. Fittings: SDR 26 gasketed type. Flexible transition couplers shall have stainless steel shear bands. Lateral bends from cleanout to main shall be gasket x spigot long radius bends
 - 2. Joints: ASTM F477 & ASTM D-3139, elastomeric gaskets.
 - 3. Diameter ratio: SDR 26
 - 4. Size: Per plans. All laterals shall be 6" unless otherwise specified.
- C. Risers
 - 1. (Size 4" and 6") shall be SDR 35 or 26
- D. Manufacturers:
 - 1. JM Manufacturing Co. or JM Eagle is not acceptable.

5.02. RESTRAINED AND MECHANICAL JOINTS

- A. Manufacturer:
 - 1. For PVC Pipe:
 - a. Mechanical Joint Fittings: EBAA Iron, Inc., Series 2000PV or equivalent.
 - 2. Substitutions: Section 01 60 00 - Product Requirements.
- B. Materials: ASTM D-2241.
- C. Joints: Gasketed, meeting ASTM D-3139 and ASTM F-477

5.03. COUPLINGS

- A. Manufacturers
 - 1.
 - a. APAC - 300 Series
 - b. Dresser - Style 253
 - c. Ford - Ultra-Flex
 - d. Romac - 501 Series
 - e. Smith-Blair -Quantum Series
 - 2. Substitutions: Section 01 60 00 - Product Requirements.
- B. System compatible with connecting pipe; verify connecting pipe O.D.

5.04. CLEANOUT PLUGS

- A. Cleanout plugs shall be installed on all cleanouts and conform with City of Sebastopol Standard Detail 513 and 513A
- B. Manufacturers:
 - 1. IPS/Test-Tite Flush Mount T-Cone Plug - 4" - S 401, 6" - S 601
 - 2. Cherne Industries "Original" End of Pipe Gripper
- C. CLEANOUT BOX
 - 1. Cleanout plugs shall be installed on all cleanouts and conform with City of Sebastopol Standard Detail 513 and 513A
 - 2. Manufacturers:
 - Cleanout Box - 4" (Lid marked "SEWER")
 - a. D & L Supply - M-8030
 - b. Geneco - CC4
 - c. South Bay Foundry - B5230
 - Cleanout Box - 6"
 - d. Genco – CC6

5.05. BEDDING AND COVER MATERIALS

- A. Bedding: Fine Aggregate Fill as specified in Section 31 00 00.
- B. Soil Backfill from Above Pipe to Finish Grade: Select Fill Soil Type, as specified in Section 31 00 00.

PART 6 EXECUTION

6.01. EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on drawings.

6.02. PREPARATION

- A. Correct over excavation with fine aggregate.
- B. Remove large stones or other hard matter which could damage pipe or impede consistent backfilling or compaction.
- C. Prior to the installation of each new individual sewer wye on the main, the Contractor shall determine the exact location of the existing sewer lateral at the back of sidewalk or PUE. Two acceptable methods of locating a sewer lateral at the back of sidewalk are.
 - 1. Removing sidewalk and/or potholing by hand digging at the back of sidewalk to locate the existing lateral pipe a minimum of 24 hours prior to sewer main installation in that area.

2. Inserting a metallic electricians "fish tape" into the existing lateral pipe after the pipe is exposed during sewer main excavation and tracing the "fish tape" to the back of sidewalk using a pipe and cable metal locator. If this method does not locate the existing sewer lateral, method "1" shall be used.
- D. All existing pipe impeding the construction of new laterals shall be removed per specification Section 02 41 10 and 02 01 10.

6.03. BEDDING

- A. Excavate pipe trench in accordance with Section 31 23 00.
- B. Place bedding material at trench bottom, level materials in continuous layer not exceeding 6 inches.
- C. Maintain optimum moisture content of bedding material to attain required compaction density.

6.04. INSTALLATION - PIPE

- A. Install pipe, fittings, and accessories in accordance with City of Sebastopol Standard Details and City of Santa Rosa Sewer Construction Specifications (Section 130). Seal joints watertight.
- B. Lay pipe to slope gradients noted on drawings to meet join existing property side laterals; with maximum variation from indicated slope of 1/8 inch in 10 feet. Pipe shall be installed at continuous slope as shown on drawings.
- C. Excavate bell holes to permit proper joint installation.
- D. Install pipe to have bearing along entire length of pipe.
- E. Install bedding at sides and over top of pipe to minimum compacted thickness of 6 inches.
- F. Cover is the distance from the top of the pipe to the final finished grade measured directly over the pipe.
- G. Minimum cover for all sewer mains and laterals shall be 36". The Engineer may approve shallower installations but in no case shall cover be less than 24".
- H. Where cover is less than 36", special construction techniques must be approved such as the use of ductile iron pipe, a concrete cap over the trench, or the use of control density backfill.
- I. Refer to Section 31 23 00 for backfilling and compacting requirements. Do not displace or damage pipe when compacting.
- J. Install all sewer laterals perpendicular to the curb unless otherwise shown per plan.
 1. Any lateral not installed perpendicular to the curb shall installer tracer wire (material & type per Section 33 11 00) in the following manner, unless otherwise shown on drawings and details:
 - a. Wrap wire two times around wye connection at main and secure.
 - b. Lay both ends on top of and along the lateral to the cleanout and up the cleanout riser. Both ends of the wire shall extend approximately 6 inches beyond riser.
 - c. Secure wire to top of lateral pipe at approximately 5 foot intervals. Ends of wire must be easily accessible inside the cleanout box.

- K. Install plastic ribbon tape continuous over top of pipe buried 12 inches below finish grade, above pipe line; coordinate with Section 31 23 00.

6.05. TESTING OF SEWERS

- A. Test for leakage shall be performed for all portions of the sewer, including manholes, is required.
 - 1. All testing required shall conform with the City of Santa Rosa Sewer Construction Specification 130-1.08
- B. All new or rehabilitated sanitary sewer manholes shall be tested unless otherwise directed by the Engineer. If the manhole fails the test, the manhole shall be repaired and retested at the contractor's expense. If manhole joint sealants are compromised during the vacuum test, the manhole must be disassembled and the joint sealants replaced. If there is reason to believe that the manhole has been disturbed after the initial vacuum test, additional tests may be requested by the Engineer and performed at the Contractor's expense.

1. Leakage Testing:

- a. Water Test: Manholes, after inlets and outlets have been plugged, shall be filled with water to the rim of the frame casting and shall lose no more than 2 inches over a period of 30 minutes.
- b. Vacuum Testing shall be performed in accordance with ASTM C 1244-20. Vacuum testing shall not take place until all permanent paving is complete.
 - 1) All lift holes and joints shall be grouted and the entire manhole, including grade rings, sealed prior to testing.
 - 2) All pipes entering the manhole shall be temporarily plugged, taking care to securely brace the pipes and plugs to prevent them from being drawn into the manhole.
 - 3) The test head shall be placed in accordance with the manufacturer's recommendations. The test unit shall be braced against the manhole frame and not the grade ring(s) or taper.
 - 4) Vacuum test gauge and test equipment used for this test shall be supplied by the Contractor and shall be operated per manufacturer's specifications by qualified personnel. Accuracy and calibration of the guage shall be certified by a reliable testing firm at 6 month intervals, or when requested by the Engineer.
 - 5) A vacuum of 10 inches HG (4.91 PSI) of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off. The time it takes the indicator gauge to drop from 10 inches HG (4.91) to 9 inches Hg (4.4 PSI) shall be measured. The manhole will pass the vacuum test if the time is greater than shown in the following table:

Minimum Test Time Based On Manhole Diameter (sec.)

Manhole Depth in Feet	Manhole Diameter in Inches			Time in Seconds
	48	60	72	
0-4	10	13	16	
4-8	20	26	33	
8-12	30	39	49	
12-16	40	52	67	
16-20	50	65	81	
20-24	59	78	97	
24-30	74	98	121	

- 6) After the vacuum test, manholes shall be visually inspected for leaks and defects and repaired as required by the engineer
- c. Exfiltration or Infiltration testing

2. Installation of vacuum equipment and indicating devices must be in accordance with the manufacturer's recommendations and performance specifications, which must be provided by the manufacturer and approved by the Engineer. The equipment must be capable of testing the entire manhole, including cast iron frame and grade adjustment rings.

6.06. BYPASS PUMPING AND/OR DIVERSION SYSTEM

- A. Bypass pumping shall be performed per the City of Santa Rosa Sewer Specification 130-1.10
- B. Contractor shall allow up to 10 working days for response from the City and Engineer for any request regarding sewer flows.

6.07. FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Compaction Requirements: In accordance with Section 31 23 00.
- C. When tests indicate Work does not meet specified requirements, remove work, replace and retest.

6.08. PROTECTION OF FINISHED WORK

- A. Section 01 70 00 -Project Closeout: Requirements for protecting finished Work.
- B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION

APPENDIX A

CITY OF SEBASTOPOL General Guidelines for Construction Activities Erosion and Sediment Control and Minimization of Hazardous Materials Contact with Stormwater

GENERAL GUIDELINES FOR CONSTRUCTION ACTIVITIES

1. The *Erosion and Sediment Control Field Manual, Third Edition, June 1999*, by the California Regional Water Quality Control Board, San Francisco Bay Region, forms the basis for these requirements, and is incorporated herein in its entirety. A copy of the *Field Manual* may be obtained from the California Environmental Protection Agency State Water Resources Control Board Water Quality home page, <http://www.waterboards.ca.gov/stormwtr/training.html> under "Publications Available".
2. The City shall periodically inspect the Contractor's work to ensure that work conforms to these erosion control guidelines and requirements.
3. For public projects, the City shall perform erosion control follow-up and maintenance and be responsible for post construction stormwater protection following completion of the project, in accord with the provisions of the *Field Manual* and the City's Storm Water Management Plan.
4. The Contractor shall conform to all of the requirements contained in the approved plans and these contract documents and specifications and any other documents referenced herein.

EROSION CONTROL

Contractor shall conform with the requirements contained in Part IV, Specifications, Section 02770, Soil Erosion Control, and these guidelines.

GENERAL PRACTICES TO MINIMIZE HAZARDOUS MATERIALS CONTACT WITH STORM WATER (to be used in conjunction with the *Field Manual*)

1. Scheduling: The key to keeping potentially hazardous construction materials (PHCM) out of storm water is to perform most of the construction (earthwork and foundation work) during the dry season. All erosion control facilities shall be in place by October 15, or before the first rains - which ever comes first. All PHCMs shall be covered with tarps and elevated off the ground if rain is predicted.
2. Chemical Storage: Chemicals shall be stored in their original containers or in well-labeled, sealed containers in designated areas.
3. Drainage: PHCMs shall not be transported, applied, or washed within areas which drain to the City Storm Drain System.
4. Construction Equipment and Vehicles - Maintenance
 - a. Maintain all construction equipment to prevent oil or other fluid leaks.
 - b. Use drip pans for any oil or fluid changes that are required for maintenance of equipment. Keep vehicles and equipment clean. Do not allow excessive build-up of oil and grease.
 - c. Use off-site repair shops as much as possible.
 - d. Always use secondary containment, such as a drain pans or drop cloths, to catch spills or leaks when removing or changing fluids.
 - e. Place stockpiled spill cleanup materials where they will be readily accessible. Regularly

inspect on-site vehicles and equipment for leaks, and repair immediately. Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment on-site.

- f. Segregate and recycle wastes, such as greases, used oil or oil filters, antifreeze, cleaning solutions, automotive batteries, and hydraulic and transmission fluids.
5. Construction Equipment and Vehicles – Fueling
 - a. Use off site fueling stations as much as possible.
 - b. If fueling must occur on-site, use designated areas, located away from drainage. Locate on-site fuel storage tanks over a retention area designed to hold the total tank volume.
 - c. Cover the retention area with an impervious material and install it in a manner to ensure that any spills will be contained in the retention area.
 - d. Discourage "topping-off" of fuel tanks, as it frequently leads to fuel spillage.
 - e. Always use secondary containment, such as a drain pans or drop cloths, when fueling to catch spills/leaks.
 - f. Place stockpiled spill cleanup materials where they will be readily accessible.
 - g. Avoid mobile fueling of mobile construction equipment around the site; transport the equipment to designated fueling areas.
 6. Construction equipment and Vehicles – Washing
 - a. Use off-site commercial washing businesses as much as possible.
 - b. Washing vehicles and equipment outdoors or in areas where wash water flows onto paved surfaces or into drainage pathways can pollute storm water. If you wash a large number of vehicles or pieces of equipment, conduct this work at an off-site commercial facility.
 - c. Do not permit steam cleaning on-site. Steam cleaning can generate significant pollutant concentrations.
 7. Construction Equipment and Vehicles – Storage
 - a. Locate vehicle and equipment storage, cleaning, and maintenance areas in designated, confined areas. These areas should be located away from significant drainage courses.
 - b. Direct any concentrated storm water run-on/runoff around storage and service areas. Minimize contact of storm water and run-on/runoff with stored equipment by raising equipment on pallets or other similar devices.
 8. Toxic Materials: Through proper material use, waste disposal, and training of employees, the discharge of toxic pollutants can be prevented. Such methods include the following:
 - a. Dispose of all wastes in accordance with Federal, State, and local regulations.
 - b. Use the entire product before disposing of the container.
 - c. Do not remove the container's original product label prior to disposal. It contains important safety and disposal information.
 - d. Do not clean out brushes or paint containers on dirt or into streets, gutters, storm drains,

or streams. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and reuse thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.

- e. Select and site designated hazardous waste storage areas.
- f. Store hazardous materials and wastes in covered containers and protect from vandalism. Place hazardous material and waste containers in secondary containment.
- g. Do not mix wastes. Mixing can cause chemical reactions, make recycling impossible, and complicate disposal.
- h. Recycle any useful material such as oil or water-based paint. Provide a summary of available recycling and disposal services.
- i. Make sure that toxic liquid wastes and chemicals are not disposed of in dumpsters designated for construction debris.
- j. Arrange for regular waste collection before containers overflow.
- k. Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.