


Agenda Report Reviewed by:  
City Manager: 

CITY OF SEBASTOPOL  
CITY COUNCIL  
AGENDA ITEM

**Meeting Date:** March 1, 2022  
**To:** Honorable Mayor and City Councilmembers  
**From:** Mario Landeros, Interim City Engineer  
**Subject:** First Street Water Main Replacement Project 2021-02  
**Recommendation:** Approval of Plans and Specifications and Authorization to Bid First Street Water Main Replacement Project 2021-02  
**Funding:** Currently Budgeted:  Yes  No  N/A

Account Code/Costs authorized in City Approved Budget (if applicable) AK (verified by Administrative Services Department)

**INTRODUCTION/PURPOSE:**

The item is to request Council approval of Plans and Specifications and authorization to bid the First Street Water Main Replacement Project 2021-02 ("Project").

**BACKGROUND:**

The First Street Water Main Replacement Project is CIP #0818-20.09 in the adopted Fiscal Year 2021-22 Capital Improvement Program (CIP). This project is Phase 2 of the First Street water main system that was identified as needing replacement due to leaking sections of pipe. and the relocating the water main out of private property and onto City right of way. Phase 1 work was completed in 2019.

This Project is part of the First Street water main system and will address a section of the water main from First Street, along Leland Avenue to a connection point in the Jewell Avenue right of way, and thereby eliminating the portion of water main on private property.

**DISCUSSION:**

The Project consists of the replacement of existing 10-inch diameter ductile iron water main on private property with a new 10-inch polyvinyl water main on City right of way. The new alignment will connect to the existing 10-inch water main at the intersection of First Street and Leland Avenue, extending east on Leland Avenue to its intersection with Jewell Avenue, and then head north on Jewell to where it intersects with Calder Avenue and will connect to the existing water mains in that intersection. A map of the project area is shown on Attachment 1. New gate valves would be installed to isolate water mains during maintenance operations, which is necessary for minimizing disruption in water service to City customers in the area.

The plans and specifications were prepared by GHD Inc. and is ready for approval. A Notice of Exemption for the Project has been approved by the Planning Director and will be filed with the County Clerk prior to bidding.

Upon Council's approval of the plans and specifications and authorization to bid, the Project will be advertised in accordance with the Public Contracting Code for solicitation of bids for doing the work. The estimated Project schedule is construction in summer 2022 and completion by fall 2022. The Engineer's Estimate for the construction is \$247,500.

**GOALS:**

This action supports the following City Council Goals and General Plan Actions:

- Goal 2 - Maintain, Improve and Invest in the City's Infrastructure (Water, Sewer, Streets, Circulation, Parks, Storm Drains and Public Facilities).

**PUBLIC COMMENT:**

As of the writing of this staff report, the City has not received any public comment. However, if staff receives public comment from interested parties following the publication and distribution of this staff report, such comments will be provided to the City Council as supplemental materials before or at the meeting. In addition, public comments may be offered during the public comment portion of the agenda item.

**PUBLIC NOTICE:**

This item was noticed in accordance with the Ralph M. Brown Act and was available for public viewing and review at least 72 hours prior to schedule meeting date.

**FISCAL IMPACT:**

The adopted Fiscal Year 2021-22 CIP budget includes \$247,500 for the construction in the Water Capital Fund 501.

**RECOMMENDATION:**

Staff recommends the Sebastopol City Council, by minute order, approve the plans and specifications and authorize the solicitation of bids for the First Street Water Main Project 2021-02.

**Attachments:**

- 1 Project Map
- 2 Project Plans and Specifications

Attachment 1  
First Street Water Main Replacement Project



**INVITATION FOR BIDS**

**CONTAINING  
NOTICE TO BIDDERS  
INFORMATION FOR BIDDERS  
SPECIAL PROVISIONS  
PROPOSAL AND CONTRACT FORMS**

**FOR CONSTRUCTION OF**

**First Street Watermain  
Replacement**

**Contract No. 2021-02**

**IN THE  
CITY OF SEBASTOPOL**

**BID OPENING DATE**

**March 30, 2022  
2:00 p.m.**

**ISSUED BY**

**ENGINEERING DIVISION  
CITY OF SEBASTOPOL  
714 Johnson Street  
Sebastopol, CA 95472  
(707) 823-2151**

**Mario Landeros, Interim City Engineer**

**CITY OF SEBASTOPOL  
CONTRACT DOCUMENTS AND SPECIFICATIONS**

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<b>A</b>	<b>General Guidelines for Construction Activities Erosion and Sediment Control and Minimization of Hazardous Materials Contact with Stormwater</b>

## NOTICE TO BIDDERS

Sealed proposals will be received by the Engineering Manager, Engineering Division, 714 Johnson Street, Sebastopol, California 95472, up to the hour of **2:00 PM, March 30, 2022**, for:

### **First Street Watermain Replacement Contract 2021-02**

In accordance with the applicable provisions of the Labor Code, the Director of Industrial Relations, State of California has determined the general prevailing wage rates. Copies of those rates are on file with the City Engineer.

Plans and specifications may be examined at the office of the Sebastopol Public Works Department, 714 Johnson Street, Sebastopol, California 95472, and may be obtained upon payment of Fifty Dollars (\$50.00). There will be no refund for plans and specifications. Bidders must possess a valid **Class A** license in accordance with the provisions of the State Contractor's License Act. Questions regarding the project plans, and specifications, or other contract provisions, bonding, and insurance shall be addressed to the City Engineer (707) 823-2151.

**Proposals for the job must be submitted on the proposal forms included in these specifications without removal therefrom.** Proposals shall be enclosed in an envelope marked:

### **First Street Watermain Replacement Contract 2021-02**

Each proposal must be accompanied by cash, or an unconditional certified bid bond or check made payable to the City of Sebastopol, and such cash, check, or bond shall be in an amount equal to at least ten percent (10%) of the amount of the bid.

Notice is hereby given that for any moneys earned by the contractor and withheld by the City to ensure performance of the contract, the contractor may, at his request and expense, substitute securities equivalent to the amount withheld in the form and manner and subject to the conditions provided in Chapter 13 (commencing with Section 4590), Division 5, Title 1 of the Government Code of the State of California.

The City Council of the City of Sebastopol reserves the right to reject any and all bids and to waive any informality in any bid received. The award of the contract, if it were awarded, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed.

Questions regarding this Notice may be submitted to [Engineering@cityofsebastopol.org](mailto:Engineering@cityofsebastopol.org)

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

CITY OF SEBASTOPOL

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Mario Landeros, Interim City Engineer

**PART I**

**BIDDING AND CONTRACT DOCUMENTS**

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**BID DOCUMENTS, CONTRACT DOCUMENTS AND INSURANCE REQUIREMENTS**

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**PART 1**

**INFORMATION FOR BIDDERS**

**Section 1 Receipt and Opening of Bids:**

The City of Sebastopol (herein called the Owner) invites bids on the form attached hereto, all blanks of which must be appropriately filled in. Bids will be received by the City of Sebastopol at the Office of the City Engineer, until the date and time specified in the Notice to Bidders, and then at said office publicly opened and read aloud. The envelopes containing the bids must be sealed, addressed to the City Engineer, Engineering Division, 714 Johnson Street, Sebastopol, California, 95472, and designated as bid for:

**FIRST STREET WATERMAIN REPLACEMENT  
Contract 2021-02**

The Owner may find any bid not prepared and submitted in accordance with the provisions hereof non-responsive and may waive any informality or reject any and all bids. Any bid may be withdrawn before the postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw within 30 days after the actual date of the opening thereof.

**Section 2 Preparation of Bid:**

**BIDS SHALL BE SUBMITTED ON THE FORMS PROVIDED IN THIS DOCUMENT WITHOUT REMOVAL THEREIN.**

All blank spaces for bid prices must be filled in, in ink or typewriter, and the foregoing Certification must be fully completed and executed when submitted.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his address, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in the bid form.

**Section 3 Subcontractors:**

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this contract must be acceptable to the Owner.

**Section 4 Site Visit**

Prospective bidders are strongly encouraged to visit the job site prior to the bidding date. Contact the Sebastopol Engineering Division at 707-823-2151 for directions.

**Section 5 Telegraphic Modifications:**

Any bidder may modify his bid by telegraphic communication at anytime prior to the scheduled closing time for receipt of bids, provided such telegraphic communication is received by the Owner prior to the closing time, and provided further, the Owner is satisfied that a written confirmation of the telegraphic modification over the signature of the bidder was mailed prior to the closing time. The telegraphic communication should not reveal the bid price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed bid is opened.

If written confirmation is not received within two days from the closing time, no consideration will be given to the telegraphic modification.

**Section 6 Qualification of Bidder:**

The Owner may make such investigation as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence is submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted. Bidder must possess a valid Class A Contractor's License.

No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5 [with limited exceptions from this requirement for bid purposes only under Labor Code Section 1771.1(a)].

No contractor or subcontractor may be awarded a contract for public works on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.

**Section 7 Bid Security:**

Each bid must be accompanied by cash, certified check of the bidder, or a bid bond prepared on the form of a bid bond attached thereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of 10% of the bid. Such cash, checks or bid bonds will be returned to all except the three lowest bidders within three days after the opening of bids, and the remaining cash, checks or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or, if no award has been made within 30 days after the date of the opening of the bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

**Section 8 Liquidated Damages for Failure to Enter into Contract:**

The successful bidder, upon his failure or refusal to execute and deliver the contract, bonds, and Insurance Certificates, required within 10 days after he has received notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid. Please refer to proposed schedule of work contained in Special Provisions, Section 6.

**Section 9 Time of Completion and Liquidated Damages:**

Bidder must agree to commence work on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the project within.

**Sixty (60) working days**

thereafter. Bidder must also agree to pay as liquidated damages, the sum of \$500.00 for each consecutive working day thereafter as hereinafter provided in the General Conditions. Please refer to proposed schedule of work contained in Special Provisions, Section 6.

**Section 10 Conditions of Work:**

Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Insofar as possible, the contractor, in carrying out his work, must employ, such methods or means as will not cause any interruption of or interference with the work of any contractor.

**Section 11 Addenda and Interpretation:**

No oral interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder.

Every request for such interpretation should be in writing addressed to Sebastopol Engineering Division, 714 Johnson Street, Sebastopol, California 95472, and to be given consideration must be received at least five days prior to the date fixed for opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of a written addendum to the specifications which, if issued, will be mailed by certified mail with return receipt requested to all prospective bidders (at the respective addresses furnished for such purposes), and not later than three days prior to the date fixed for opening bids. Failure of any bidder to receive any such addendum or interpretations shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

**Section 12 Security for Faithful Performance:**

Simultaneously with his delivery of the executed contract, the Contractor shall furnish a surety bond as security for faithful performance of this contract and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract, as specified in the General Conditions included herein. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the Owner.

**Section 13 Power of Attorney:**

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

**Section 14 Laws and Regulations:**

The Bidder's attention is directed to the fact that all applicable State Laws, Municipal Ordinances and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full. Reference is made to the Provisions of the Contract contained in these specifications where applicable State Laws are specified.

This contract is subject to compliance monitoring and enforcement by the Department of Industrial Relations.

**Section 15 Method of Award - Lowest Qualified Bidder:**

If at the time this contract is to be awarded, the lowest bid submitted by a responsible bidder does not exceed the amount of funds estimated by the Owner to be available to finance the contract, the contract will be awarded.

**Section 16      Obligation of Bidder:**

At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or documents shall in no way relieve any bidder from any obligation in respect of his bid.

**Section 17      Workmen's Compensation:**

The Contractor shall maintain adequate workmen's compensation insurance under the laws of the State of California for all labor employed by him or by any subcontractor under him who may come within the protection of such workmen's compensation laws of the State of California, and shall provide, where practicable, employers' general liability insurance for the benefit of his employees and the employees of any subcontractor under him not protected by such compensation laws, and proof of such insurance satisfactory to the Governing Body shall be given by filing certificates of such insurance with the Engineer of work in form satisfactory to the Governing Body. If such insurance is underwritten by any agency other than the State Compensation Fund, such agency shall be a company authorized to do business in the State of California.

**Section 18      Wage Scale:**

Pursuant to Section 1773 of the Labor Code of the State of California, the City has obtained from the Directory of the Department of Industrial Relations the general prevailing rate of per diem wages and the general prevailing rate for holidays and overtime work for each craft, classification, or type of workman required to execute the contract. A copy of said prevailing rate of per diem wages is on file in the office of the Engineering Manager to which reference is hereby made for further particulars. Said prevailing rate of per diem wages will be made available to any interested party upon request, and a copy thereof shall be posted at the job site. The provisions of Article 2, Chapter 1, Part 7, Division 2 (commencing with Section 1770) of the Labor Code and particularly Section 1775 thereof, shall be complied with.

**Section 19      Hours of Labor:**

The Contractor shall forfeit, as penalty to the City, one hundred twenty-five dollars (\$125.00) for each workman employed in the execution of the contract by him or by any subcontractor, for each calendar day during which any workman is required or permitted to labor more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week, in violation of the provisions of Article 3, Chapter 1, Part 7, Division 2 (commencing with Section 1810) of the Labor Code of the State of California.

**Section 20      Apprentices:**

In accordance with the provisions of Section 1777.5 of the Labor Code, and in accordance with the rules and procedures of the California Apprenticeship Council, properly indentured apprentices shall be employed in the prosecution of the work. The ratio of apprentices to journeymen who shall be employed in the respective crafts or trades may be the ratio stipulated in the apprenticeship standards under which the appropriate joint apprenticeship committee operates. Willful failure by the contractor to comply with said Section 1777.5 shall result in his being denied the right to bid on a public works contract for a period of six months from the date determination is made.

Information relative to number of apprentices, indemnification, wages, hours of employment and standards of working conditions shall be obtained from the Director of the Department of Industrial Relations, who is the Administrative Officer of the California Apprenticeship Council.

**Section 21 Labor Discrimination:**

Attention is directed to Section 1735 of the Labor Code, which reads as follows:

"No discrimination shall be made in the employment of persons upon public works because of the race, religious, creed, color, national origin or ancestry, physical handicap, medical condition, marital status, or sex of such persons, except as provided in Section 12940 of the Government Code. Any contractor for public works violating this section is subject to all penalties imposed for a violation of this chapter."

**Section 22 City Water:**

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.

**Section 23 Safety Standards and Accident Prevention:**

With respect to all work performed under this contract, the Contractor shall:

1. Comply with the safety standard provisions of applicable laws, building and construction codes in the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the "Federal Register," Volume 36, No. 75, Saturday, April 17, 1971.
2. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.
3. Maintain at his field office or other well-known place at the job site, all articles necessary for giving first aid to the injured, and shall make standing arrangements for the immediate removal to a hospital or a doctor's care of persons (including employees), who may be injured on the job site. In no case shall employees be permitted to work at a job site before the employer has made a standing arrangement for removal of injured persons to a hospital or a doctor's care.

**BIDDER'S PROPOSAL**

**(DO NOT DETACH)**

**FIRST STREET WATERMAIN REPLACEMENT  
Contract 2021-02**

To the Honorable City Council  
City of Sebastopol  
Sebastopol, California

Mayor and Councilmembers:

The undersigned, as a bidder, declares he has carefully examined the location of the proposed work and that he has examined the plans and specifications and hereby proposes to furnish all materials and to do all work required to complete the work in accordance with the plans and specifications. Bidder hereby agrees to commence work under this contract on or before a date specified in written "Notice to Proceed" of the Owner, and to complete the work within Ninety (90) working days as stipulated in the specifications, or agree to the assessment of liquidated damages, and to accept payment in full for the work at the prices as set forth on the attached Bidder's sheets.

Licensed in accordance with an act providing for the registration of Contractor's License No. A.

(If an individual, so state. If a firm or co-partnership, state the firm name and give the names of all individual co-partners comprising the firm. If a corporation, state legal name of corporation and also name of President, Secretary, Treasurer and manager thereof).

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DATED: \_\_\_\_\_, 20\_\_\_\_\_

**BID SCHEDULE  
FIRST STREET WATERMAIN REPLACEMENT  
CITY OF SEBASTOPOL  
CONTRACT NO. 2021-02**

ITEM NO.	DESCRIPTION	UNIT BID PRICES	UNIT	ESTIMATED QUANTITY	BID ITEM TOTAL
1	Mobilization, Bonds and Insurance	\$	LS	1	\$
2	Water Pollution and Erosion Control	\$	LS	1	\$
3	Temporary Traffic Control	\$	LS	1	\$
4	Shoring and Trench Safety	\$	LS	1	\$
5	Dewatering	\$	LS	1	\$
6	10" Water Main	\$	LF	410	\$
7	10" Gate Valve	\$	EA	5	\$
8	Connect to Existing Water Main	\$	EA	2	\$
9	Abandon Water Main	\$	LS	1	\$
10	10"x10"x10" Tee on Zone 2 Water Main	\$	LS	1	\$
11	¾" Water Service	\$	EA	4	\$
12	Restoration of Pavement Striping and Markings	\$	LS	1	\$
<b>TOTAL BID</b>					\$
					<b>In Figures</b>

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(in words)

Above unit prices shall include all costs for performing the entire contract as shown on the plans and included in these specifications and shall include but not be limited to all labor, materials, tools, equipment, mobilization, tree preservation, profit, overhead, insurance, bonds, and the like required to finish the various forms of work.

Bidder understands that the Owner reserves the right to reject any or all bids and to waive any informality in the bidding.

The bidder agrees that this bid shall be good and may not be withdrawn for a period of 30 calendar days after the scheduled closing time for bids.

Upon receipt of written notice of the acceptance of this bid, bidder will execute the formal contract attached within 10 days and deliver a Surety Bond or Bonds as required by the section of the General Conditions entitled "Contract Security." The bid security attached in the sum of \_\_\_\_\_ (\$\_\_\_\_\_), \_\_\_\_\_ is to become the property of the Owner in the event the contract and bond are not executed within the time and additional expense to the Owner caused thereby.

Respectfully Submitted,

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Address

SEAL - (If Bid by a Corporation)

\_\_\_\_\_  
City, State, Zip Code



**STATEMENT OF EXPERIENCE OF BIDDER  
TO BE COMPLETED BY BIDDER AND  
SUBMITTED WITH THE BID**

The bidder has been engaged in the contracting business, under the present business name, for \_\_\_\_\_ years.  
Experience in work of a nature similar to that bid in this Proposal extends over a period of \_\_\_\_\_ years.

The bidder is required to state below work of similar magnitude or character that he has done, and to give references that will enable the Governing Body to judge his experience, skill, and business standing, and his ability to conduct the work completely and as required under the terms of the Contract.

**Year, Location, Magnitude  
and Type of Work**

**Owner / Contact Person  
and Phone Number**

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Bank References: \_\_\_\_\_

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Contractor's License No: \_\_\_\_\_ Signature of Bidder: \_\_\_\_\_  
State of California

**Attach other sheets as necessary.**

**LIST OF SUBCONTRACTORS  
TO BE COMPLETED BY BIDDER AND  
SUBMITTED WITH THE BID**

In accordance with the provisions of Sections 4104 and 4111, inclusive, of the Government Code of the State of California, each bidder shall list below the name and location of place of business of each subcontractor who will perform a portion of the contract work in an amount in excess of one-half of one percent of the total contract price. In each such instance, the nature and extent of the work to be subcontracted shall be described.

The General Contractor to whom the contract is awarded will not be permitted without written consent of the City, to substitute any person as subcontractor in place of the subcontractor designated in the original bid, or to permit any subcontract to be assigned or transferred, or to allow it to be performed by anyone other than the original subcontractor. If the original subcontractor, after having reasonable opportunity to do so, shall fail or refuse to execute the written contract presented to him by the General Contractor, the owner shall be notified and a replacement agreed upon.

The failure of the Contractor to specify a subcontractor for any portion of the contract work in excess of one-half of one percent of the total contract price shall be deemed to indicate that the Contractor intends to perform such portion himself. The subcontracting of work for which no subcontractor was designated in the original bid and which is in excess of one-half of one percent of the total contract price, will be allowed only with the written consent of the City.

Subcontractor Name	Contractors License #	D.I.R. #	Address of Office, Mill or Shop	Description of Work To Be Performed	% of Total Bid

**NOTE: All subcontractors must provide insurance certificates and endorsements in accordance with “Insurance Requirements For Contractors” contained in this document.**

**BID BOND**

**TO BE EXECUTED BY THE BIDDER AND  
SUBMITTED WITH THE BID**

**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

**FIRST STREET WATERMAIN REPLACEMENT  
Contract 2021-02**

**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 Owner 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: \_\_\_\_\_

**NONCOLLUSION AFFIDAVIT  
TO BE EXECUTED BY BIDDER AND  
SUBMITTED WITH BID**

State of California                    )  
  )ss.  
County of \_\_\_\_\_)

\_\_\_\_\_ being first duly sworn, deposes and says that he or she is  
\_\_\_\_\_ of \_\_\_\_\_ the party making the foregoing bid  
that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that 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, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, of the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

\_\_\_\_\_  
Principal

**CONTRACT**

**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:

**FIRST STREET WATERMAIN REPLACEMENT  
Contract 2021-02**

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 (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 Ninety (90) working days. The Contractor further agrees to pay, as liquidated damages, the sum of \$500.00 for each consecutive working day thereafter as provided in Section 9 of the Information to Bidders.

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 Part II, Section 20, "Payments to Contractor" of the General Conditions.

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**

**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:

**FIRST STREET WATERMAIN REPLACEMENT  
Contract 2021-02**

**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.



**50% PAYMENT 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:

**FIRST STREET WATERMAIN REPLACEMENT  
Contract 2021-02**

**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 of 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.

**CITY OF SEBASTOPOL**

**INSURANCE REQUIREMENTS FOR CONTRACTORS**

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. Builder’s Risk (Course of Construction) insurance utilizing an “All Risk” (Special Perils) coverage form, with limits equal to the completed value of the project and no coinsurance penalty provisions.
5. Surety Bonds. Contractor shall provide the following Surety Bonds:
  1. Bid bond
  2. Performance bond
  3. Payment bond
  4. Maintenance bond

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.

6. 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.
7. 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,

8. 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.

#### **Builder's Risk (Course of Construction) Insurance**

Contractor may submit evidence of Builder's Risk insurance in the form of Course of Construction coverage. Such coverage shall name the City of Sebastopol as a loss payee as their interest may appear.

If the project does not involve new or major reconstruction, at the option of the City of Sebastopol, an Installation Floater may be acceptable. For such projects, a Property Installation Floater shall be obtained that provides for the improvement, remodel, modification, alteration, conversion or adjustment to existing buildings, structures, processes, machinery and equipment. The Property Installation Floater shall provide property damage coverage for any building, structure, machinery or equipment damaged, impaired, broken, or destroyed during the performance of the Work, including during transit, installation, and testing at the City of Sebastopol's site.

**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.

**PART II**

**GENERAL CONDITIONS**

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**PART II**  
**GENERAL CONDITIONS**

**Section 1      Definitions:**

The following terms as used in this contract are respectively defined as follows:

- (a) "Contractor": A person, firm or corporation with whom the contract is made by the Owner.
- (b) "Engineer": The City Engineer of the City of Sebastopol, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.
- (c) "Subcontractor": A person, firm or corporation supplying labor and materials or only labor for work at the site of the project for, and under separate contract or agreement with, the Contractor.
- (d) "Owner": The City of Sebastopol.
- (e) "Work on (at) the project": Work to be performed at the location of the project, including the transportation of materials and supplies to or from the location of the project by employees of the Contractor and any Subcontractor.

**Section 2      Shop or Setting Drawings:**

The Contractor shall submit promptly to the Engineer copies of each shop or setting drawing as specified in Part IV, Specifications. After examination, such drawings by the engineer and the return thereof, the Contractor shall make such corrections to the drawings as have been indicated and shall furnish the Engineer with two corrected copies. If requested by the Engineer, the Contractor must furnish additional copies. Regardless of corrections made in or approval given to such drawings by the Engineer, the Contractor will nevertheless be responsible for the accuracy of such drawings and for the conformity to the Plans and Specifications, unless he notifies the Engineer in writing of any deviations at the time he furnishes such drawings.

**Section 3      Materials, Services and Facilities:**

- (a) It is understood that except as otherwise specifically stated in the Contract documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete and deliver the work within the specified time.
- (b) Any work necessary to be performed after regular working hours, on Sundays or Legal Holidays, shall be performed without additional expense to the Owner.

**Section 4      Contractor's Title or Materials:**

No materials or supplies for the work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the work, free from all liens, claims or encumbrances.



**Section 5 Inspection and Testing of Materials:**

- (a) All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. The Owner will pay for all laboratory inspection service direct, and not as a part of the contract.
- (b) Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

**Section 6 "Or Equal" Clause:**

Whenever a material, article or piece of equipment is identified on the plans or in the specifications by reference to manufacturers' or vendor's names, trade names, catalogue numbers, etc., it is intended merely to establish a standard; and, any material, article, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed, is, in the opinion of the Engineer, of equal substance and function. It shall not be purchased or installed by the Contractor without the Engineer's written approval.

**Section 7 Surveys, Permits, and Regulations:**

The Contractor shall employ as a subcontractor, a licensed land surveyor or civil engineer experienced in construction staking as required to perform the construction staking function for this project. The cost of construction staking shall be borne solely by the Contractor. The cost of construction staking shall be considered as included in the cost of the various items of work requiring construction staking and no additional compensation will be allowed.

The Contractor shall procure and pay all permits, licenses and approvals necessary for the execution of his contract.

The Contractor shall comply with all laws, ordinances, rules, orders and regulations relating to performance of the work, the protection of adjacent property, and the maintenance of passageways, guard fences or other protective facilities.

**Section 8 Contractor's Obligations:**

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary or proper to perform and complete all work required by this contract and said specifications and in accordance with the plans and drawings covered by this contract any and all supplemental plans and drawings, and in accordance with the directions of the Engineer as given from time to time during the progress of work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required.

The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements and limitations of the contract and specifications, and shall do, carry on, and complete the entire work to the satisfaction of the Engineer and the Owner.

**Section 9 Weather Conditions:**

In the event of temporary suspensions of work, or during inclement weather, or whenever the Engineer

shall direct, the contractor shall, and will cause his Subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his Subcontractors so to protect his work, such materials shall be removed and replaced at the expense of the Contractor.

**Section 10 Protection of Work and Property - Emergency:**

The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this contract. He shall at all times safely guard and protect his own work, and that of adjacent property from damage. The Contractor shall replace or make good any such damage, loss or injury unless such is caused directly by errors contained in the contract or by the Owner, or his duly authorized representatives.

In case of an emergency that threatens loss or injury of property, and/or safety of life, the Contractor will be allowed to act, with previous instructions from the Engineer, in a diligent manner. He shall notify the engineer immediately thereafter.

Where the contractor has not taken action but has notified the Engineer of an emergency threatening injury to persons or damage to the work or any adjoining property, he shall act as instructed or authorized by the Engineer.

**Section 11 Reports, Records, and Data:**

The Contractor shall submit to the Owner such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this contract. The Contractor shall maintain and furnish payroll records in accordance with Labor Code Section 1776.

**Section 12 Superintendence by Contractor:**

The Contractor shall maintain on the Project during at least 95% of the time work is being performed by the prime Contractor and/or its subcontractors, a superintendent with the authority to make all decisions relating to the Project. The contractor shall provide the name and telephone number of the Acting Superintendent at the preconstruction conference. The Superintendent shall be accessible by telephone or pager on a 24-hour basis. It is understood that such representative shall be acceptable to the Engineer and shall be the one who will continue in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll.

**Section 13 Changes in Work:**

No changes in the work covered by the approved Contract Documents shall be made without having prior written approval of the Owner. All requests for contract change orders shall be in writing. Charges or credits for the work covered by the approved change shall be determined by one or more, or a combination of the following methods:

- (a) Unit bid prices previously approved.
- (b) An agreed lump sum.
- (c) The actual cost of:
  - 1. Labor, including foreman;
  - 2. Materials entering permanently into the work;
  - 3. The ownership or rental cost of construction plant and equipment during the time of use on the extra work;

4. Power and consumable supplies for the operation of power equipment;
5. Insurance;
6. Social Security and old age and unemployment contributions.

To the cost under (c) there shall be added a fixed fee to be agreed upon but not to exceed fifteen percent (15 %) of the actual cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expenses.

**Section 14 Extras:**

Without invalidating the contract, the Owner may order extra work or make changes by altering, adding to or deducting from the work, the contract sum being adjusted accordingly, and the consent of the Surety being first obtained where necessary or desirable. All the work of the kind bid upon shall be paid for at the price stipulated in the proposal, and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by the Owner or its Engineer acting officially for the Owner, and the price is stated in such order.

**Section 15 Time for Completion and Liquidated Damages:**

It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion as specified in the contract of the work to be done hereunder are **ESSENTIAL CONDITIONS** of this contract; and it is further mutually understood and agreed that the work embraced in this contract shall be commenced on a date to be specified in the "Notice to Proceed."

The Contractor agrees that said work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the contractor does hereby agree, as a part consideration for the awarding of this contract, to pay the Owner the amount specified in the contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work.

The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticality and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount shall be retained from time to time by the Owner from current periodical estimates.

It is further agreed that time is of the essence of each and every portion of this contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; provided, further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

- (a) To any preference, priority or allocation order duly issued by the Government;

- (b) To unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; and
- (c) To any delays of Subcontractors or suppliers occasioned by any of the causes specified in subsections (a) and (b) of this article;

Provided, further, that the Contractor shall, within ten (10) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the contract, notify the Owner, in writing, of the causes of the delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of his decision in the matter.

**Section 16 Correction of Work:**

All work, all materials, whether incorporated in the work or not, all processes of manufacture, and all methods of construction shall be at all times and places subject to the inspection of the Engineer who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture and methods of construction for the purposes for which they are used. Should they fail to meet the Engineer's approval, they shall be forthwith reconstructed, made good, replaced, and/or corrected, as the case may be, by the Contractor at his own expense. Rejected material shall immediately be removed from the site. If, in the opinion of the Engineer, it is undesirable to replace any defective or damaged materials or to reconstruct to correct any portion of the work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor shall be reduced by such amount in the judgment of the Engineer.

**Section 17 Claims for Extra Cost:**

No claim for extra work or cost shall be allowed unless the same was done in pursuance of a written order of the Engineer approved by the Owner, as aforesaid, and the claim presented with the first estimate after the changed or extra work is done. When work is performed under the terms of subparagraph 13(c) of the General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost and when requested by the Owner, give the Owner access to accounts relating thereto.

**Section 18 Right of the Owner to Terminate Contract:**

In the event that any of the provisions of this contract are violated by the Contractor, or by any of his Subcontractors, the Owner may serve written notice upon the Contractor and the Surety of its intention to terminate the contract, such notices to contain the reasons for such intention to terminate the contract, and unless within ten (10) days after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement of correction be made, the contract shall, upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination, the Owner shall immediately serve notice thereof upon the Surety and the Contractor and the Surety shall have the right to take over and perform the contract; provided however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the Owner may take over the work and prosecute the same to completion by contract or by force account for the account and at the expense of the Contractor and the Contractor and his Surety shall be liable to the Owner for any excess cost occasioned the Owner thereby, and in such event the Owner may take possession of and utilize in completing the work, such materials, appliances, and plant as may be on the site of the work and necessary therefore.

**Section 19 Construction Schedule and Periodic Estimates:**

Immediately after execution and delivery of the contract, and before the first partial payment is made, the Contractor shall deliver to the Owner an estimated construction progress schedule in form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract Documents and the anticipated amount of each monthly payment that will become due the Contractor in accordance with the progress schedule. The Contractor shall also furnish a detailed estimate giving a complete breakdown of the contract price and periodic itemized estimates of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

**Section 20 Payments to Contractor:**

Not later than the 15th day of each calendar month the Owner shall make a progress payment to the Contractor on the basis of a duly certified and approved estimate of the work performed during the preceding calendar month under this contract less 5% retention, payable upon final acceptance of the work.

The Contractor shall submit his monthly estimate of work (in triplicate) no later than the first day of the month.

All work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the contract.

Owner's Right to Withhold Certain Amounts and Make Application Thereof: The Contractor agrees that he will indemnify and save the Owner harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature herein above designated have been paid, discharged or waived. If the Contractor fails so to do, then the Owner may, after having served written notice on the said Contractor, either pay unpaid bills, of which the Owner has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor or his Surety. In paying any unpaid bills of the Contractor, the Owner shall be deemed the agent of the contractor, and any payment so made by the Owner shall be considered as a payment made under the contract by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.

**Section 21 Acceptance of Final Payment Constitutes Release:**

The acceptance by the Contractor of final payment shall be and shall operate as a release of the Owner of all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from any obligations under this contract or the Performance and Payment Bond. Final payment shall be made 35 days after recording of Notice of Completion.

**Section 22 Contract Security:**

The Contractor shall furnish a performance bond in an amount at least equal to one hundred percent (100%) of the contract prices as security for the faithful performances of this contract and also a payment bond in an amount not less than fifty percent (50%) of the contract price, as security for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract. Attorneys-in-fact who sign contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

**Section 23 Mutual Responsibility of Contractors:**

If, through acts of neglect on the part of the Contractor, any other Contractor or any other Subcontractor shall suffer loss or damage on the work, the Contractor agrees to settle with such other Contractor or Subcontractor by agreement or arbitration if such other Contractor or Subcontractor will so settle. If such other Contractor or Subcontractor shall assert any claim against the Owner on account of any damage alleged to have been sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against any such claim.

**Section 24 Separate Contract:**

The Contractor shall coordinate his operations with those of other Contractors. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of work. The Contractor, including his Subcontractors, shall keep informed of the progress and the detail work of other Contractors and shall notify the Engineer immediately of lack of progress or defective workmanship on the part of other Contractors. Failure of a Contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by him of the status of the work as being satisfactory for proper coordination with his own work.

**Section 25 Subcontracting:**

The Contractor may utilize the services of specialty Subcontractors on those parts of the work that, under normal contracting practices, are performed by specialty Subcontractors.

The Contractor shall not award any work to any Subcontractor without prior written approval of the Owner, which approval will not be given until the Contractor submits to the Owner a written statement concerning the proposed award to the Subcontractor, which statement shall contain such information as the Owner may require.

The Contractor shall be as fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

The Contractor shall cause appropriate provisions to be inserted in all Subcontractors relative to the work to bind Subcontractors to the Contractor by the terms of the General Conditions and other Contract documents insofar as applicable to the work of Subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provisions of the Contract Documents.

Nothing contained in this contract shall create any contractual relation between any Subcontractor and the Owner.

**Section 26 Engineer's Authority:**

The Engineer shall give all orders and directions contemplated under this contract and specifications, relative to the execution of the work. The Engineer shall determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Engineer's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said contract or specifications, the determination or decision of the Engineer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this contract affected in any manner or to any extent by such question.

**Section 27 Use of Premises and Removal of Debris:**

The Contractor expressly undertakes at his own expense:

- (a) to take every precaution against injuries to persons or damage to property;
- (b) to store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work;
- (c) to place upon the work or any part thereof only such loads as are consistent with the safety of that portion of the work.
- (d) to clean up frequently all refuse, rubbish, scrap materials, and debris caused by his operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance;
- (e) before final payment to remove all surplus materials, false-work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations, and to put the site in a neat, orderly condition;
- (f) to effect all cutting, fitting or patching of his work required to make the same to conform to the plans and specifications and, except with the consent of the Engineer, not to cut or otherwise alter the work of any other Contractor.

**Section 28 Quantities of Estimate:**

Wherever the estimated quantities of work to be done and materials to be furnished under this contract are shown in any of the documents including the proposal, they are given for use in comparing bids and the right is especially reserved except as herein otherwise specifically limited, to increase or diminish them as may be deemed reasonably necessary or desirable by the Owner to complete the work contemplated by this contract, and such increase or diminution shall in no way vitiate this contract, nor shall any such increase or diminution give cause for claims or liability for damages.

**Section 29 Lands and Rights-of-Way:**

Prior to the start of construction, the Owner shall obtain all lands and rights-of-way necessary for the carrying out and completion of work to be performed under this contract.

**Section 30 General Guaranty:**

Neither the final certificate of payment nor any provision in the Contract Documents, nor partial or entire occupancy of the premises by the Owner, shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or

responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. The Owner will give notice of observed defects with reasonable promptness.

**Section 31 Insurance Requirements for Contractors:**

Refer to Part I, Information for Bidders for Insurance Requirements.

**Section 32 Workmen's Compensation Insurance:**

Workmen's Compensation Insurance: The Contractor shall maintain adequate workmen's compensation insurance under the laws of the State of California for all labor employed by him or by any Subcontractor under him who may come within the protection of such workmen's compensation laws of the State of California, and shall provide, where practicable, employers' general liability insurance for the benefit of his employees and the employees of any Subcontractor under him not protected by such compensation laws; and proof of such insurance satisfactory to the Governing Body shall be given by filing certificates of such insurance with the Engineer of work in form satisfactory to the Governing Body. If such insurance is underwritten by any agency other than the State Compensation Fund, such agency shall be a company authorized to do business in the State of California. See Insurance Requirements for Contractors, in Part I, Information for Bidders.

**Section 33 Claims and Arbitration:**

Public Contract Code Sections 20104 to 20104.6 and Section 9-1.10, "Arbitration," of the Standard Specifications are hereby incorporated into this contract. In the event of a discrepancy, the Public Contracts Code shall take precedence.

Sections 20104 to 20104.6 of the Public Contracts Code state the following:

§20104. Application of article; "Public work"; "Claim"

(a)(1) This article applies to all public works claims of three hundred seventy-five thousand dollars (\$375,000) or less which arise between a contractor and a local agency.

(2) This article shall not apply to any claims resulting from a contract between a contractor and a public agency when the public agency has elected to resolve any disputes pursuant to Article 7.1 (commencing with Section 10240) of Chapter 1 of Part 2.

(b)(1) "Public work" has the same meaning as in Sections 3100 and 3106 of the Civil Code, except that "public work" does not include any work or improvement contracted for by the state or Regents of the University of California.

(2) "Claim" means a separate demand by the contractor for (A) a time extension, (B) payment of money or damages arising from work done by, or on behalf of, the contractor pursuant to the contract for a public work and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, (C) an amount the payment of which is disputed by the local agency.

(c) The provisions of this article or summary thereof shall be set forth in the plans or specifications for any work which may give rise to a claim under this article.

§20104.2. Requirements to submit claim; Agency's response; Dispute by claimant over response; Failure of agency to respond; Inapplicability of article to tort claims

For any claim subject to this article, the following requirements apply:

(a) The claim shall 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.

(b)(1) For claims of less than fifty thousand dollars (\$50,000), the local agency shall 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 local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 15 days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, which ever is greater.

(c)(1) For claims of over fifty thousand dollars (\$50,000) and less than or equal to three hundred seventy-five thousand dollars (\$375,000), the local agency shall 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 local agency may have against the claimant.

(2) If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of the local agency and the claimant.

(3) The local agency's written response to the claim, as further documented, shall be submitted to the claimant within 30 days after receipt of the further documentation, or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.

(d) If the claimant disputes the local agency's written response, or the local agency fails to respond within the time prescribed, the claimant may so notify the local agency, in writing, either within 15 days of receipt of the local agency's response or within 15 days of the local agency'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 local agency shall schedule a meet and conference within 30 days for settlement of the dispute.

(e) Following the meet and confer conference, if the claim or any portion remains in dispute, the claimant 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 shall be tolled from the time the claimant 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.

(f) This article does not apply to tort claims and nothing in this article is intended nor shall 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.

#### §20104.4. Procedures to resolve claims

The following procedures are established for all civil actions filed to resolve claims subject to this article:

(a) Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall 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.

(b)(1) If the matter remains in dispute, the case shall 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) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

(2) Notwithstanding any other provision of law, upon stipulation of the parties, arbitrators appointed for

the purposes of this article shall be experienced in construction law, and, upon stipulation of the parties, mediators and arbitrators, shall be paid necessary and reasonable hourly rates of pay not to exceed their customary rate, and such fees and expenses shall 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 shall these fees or expenses be paid by state or county funds.

(3) 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 shall, in addition to payment of costs and fees under this chapter, pay the attorney's fees of the other party arising out of the trial de novo.

(c) The court may, upon request by any party, order any witness to participate in the mediation or arbitration process.

§20104.6. Payment of portion of claim which is undisputed; Payment of interest on arbitration award or judgment

(a) No local agency shall fail to pay money as to any portion of a claim which is undisputed except as otherwise provided in the contract.

(b) In any suit filed under Section 20104.4, the local agency shall pay interest at the legal rate on any arbitration award or judgment. The interest shall begin to accrue on the date the suit is filed in a court of law.

#### **Section 34      Damage by Storm, Flood, Tidal Wave or Earthquake:**

If the project is damaged by storm, flood, tidal wave or earthquake, then payment shall be made to the Contractor for repair in accord with Section 7-1.165 of the State of California Department of Transportation Standard Specifications except that payment or participation in payment shall only be made when such damage exceeds 5 percent (5%) of the amount of the Contractor's bid.

#### **Section 35      Checking of Drawings:**

The Contractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Engineer of any discrepancies. Figures shown on drawings shall in general be followed in preference to scale measurements. Large scale drawings shall in general govern over small scale drawings. The Contractor shall compare all drawings and verify the figures before layout of the work, and shall be responsible for any errors which might have been avoided by such comparison.

#### **Section 36      As-built Drawings:**

The Contractor shall deliver to the Engineer, one set of marked prints showing any deviation from the contract drawings. The Contractor shall show all information necessary for the preparation of an accurate record of the installation. This copy shall be neatly prepared and shall be submitted from time to time so that it may be checked by the Engineer before the work is covered up. As-Built Drawings shall be complete and approved before final payment being issued.

#### **Section 37      Substitute Materials and Equipment:**

The Contractor may, at his option, suggest substitute makes and kinds of materials and equipment (other than those specified), indicating the amount of credit or extra cost in each instance. Acceptance of substitute items shall be only by written approval of the City. In the event the Engineer's evaluation of the suggested substitute item is required to obtain City's approval, the Contractor shall pay the Engineer's fee for investigating and evaluating the substitution. In all instances of substitutions, the Contractor shall assume full responsibility for having all substitute items comply in all respects with the applicable portions of the contract specifications, except where such requirement is specifically waived by the City.

**Section 38 Defective Material or Work:**

Materials not conforming to the requirements of these specifications shall be considered as defective, and all such materials, whether in place or not, shall be rejected and shall be removed immediately from the site of the work, unless otherwise permitted by the Engineer. No rejected material, the defects of which have been subsequently corrected, shall be used until approved in writing by the Engineer.

Work which does not conform to the requirements of these specifications or is deficient in construction, shall be rejected by the Engineer and be replaced by the Contractor at his own proper cost, charge and expense, and without allowance for additional cost of such replacement to the Contractor.

Upon failure on the part of the Contractor to comply with any order of the Engineer made under the provisions of these Articles or Sections, the Engineer shall have authority to remove and replace defective material or work at the expense of the Contractor, and the Contractor and his Sureties shall be liable therefor.

**Section 39 Right to Retain Imperfect Work:**

If any portion of the work done or material furnished under this contract shall prove defective and not in conformance with the drawings and specifications, and if the imperfection in the same shall not be of sufficient magnitude or importance to make the work dangerous or undesirable, the Engineer shall have the right and authority to retain such work instead of requiring the imperfect work to be removed and reconstructed, but he shall make deductions therefor in the payments due or to become due for the applicable contract item(s) of work as may be just and reasonable.

**Section 40 Existing Utilities:**

The Contractor is responsible for protection of all utility services and facilities within the limits of this work. The Contractor is responsible for checking in the field the locations as shown, and is further responsible for any and all utility laterals or services where presence or location is unknown.

The Contractor is responsible for not interrupting any of the utility services while work is in progress and he shall take proper precautions to safeguard such utilities while working near them. Should any utility be damaged during construction, all cost of replacing or repairing shall be borne by the Contractor.

The Pacific Gas and Electric Company and Pacific Telephone shall be notified 48 hours prior to any construction near its underground facilities, and shall be notified by the Contractor well in advance of construction to make utility lines.

The Contractor shall take precaution against damage of private water and gas service lines when crossing private property.

The Owner shall be notified and a request made that all sewer and water lines be marked before start of construction.

Prior to starting work, the contractor shall (a minimum of 2 working days in advance) call Underground Service Alert (USA), toll free, at (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 who 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.

**Section 41 Differing Site Conditions:**

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of any unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

Upon written notification, the Engineer will investigate the conditions, and if the Engineer determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment excluding loss of anticipated profits will be made and the contract modified in writing accordingly. The Engineer will notify the Contractor of the determination as to whether or not an adjustment of the contract is warranted.

No contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

No contract adjustment will be allowed under the provisions specified in this section for any effects caused on unchanged work.

Any contract adjustment warranted due to differing site conditions will be made in accordance with the provisions in Section 4-1.03, "Changes," of the Standard Specifications.

**Section 42 Project Appearance:**

The Contractor shall maintain a neat appearance to the work.

In any area visible to the public, the following shall apply:

When practicable, broken concrete and debris developed during clearing and grubbing shall be disposed of concurrently with its removal. If stockpiling is necessary, the material shall be removed or disposed of weekly.

The Contractor shall furnish trash bins for all debris from structure construction. All debris shall be placed in trash bins daily. Forms or falsework that are to be reused shall be stacked neatly concurrently with their removal. Forms and falsework that are not to be reused shall be disposed of concurrently with their removal.

Full compensation for conforming to the provisions in this section, not otherwise provided for, shall be considered as included in prices paid for the various contract items of work involved, and no additional compensation will be allowed therefor.

**Section 43 Hazardous Waste in Excavation:**

If the Contractor encounters material in excavation which he/she has reason to believe may be hazardous waste, as defined by Section 25117 of the Health and Safety Code, he/she shall immediately so notify the Engineer in writing. Excavation in the immediate area of the suspected hazardous material shall be suspended until the Engineer authorizes it to be resumed. If such suspension delays the current controlling operation, the Contractor will be granted an extension of time as provided in Section 8-1.07, "Liquidated Damages," of the Standard Specifications.

If such suspension delays the current controlling operation more than two working days, the delay will be considered a right-of-way delay and the Contractor will be compensated for such delay as provided in Section 8-1.09, "Right-of-Way Delays," of the Standard Specifications.

The department reserves the right to use other forces for exploratory work to identify and determine the extent of such material and for removing hazardous material from such area.

**Section 44 Removal of Asbestos and Hazardous Substances:**

When the presence of asbestos or hazardous substances is not shown on the plans or indicated in the Specifications and the Contractor encounters materials which the Contractor reasonably believes to be asbestos or a hazardous substance as defined in Section 25914.1 of the Health and Safety Code, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe, and shall immediately cease work in the affected area and report the condition to the Engineer in writing.

In accordance with Section 25914.1 of the Health and Safety Code, all such removal of asbestos or hazardous substances including any exploratory work to identify and determine the extent of such asbestos or hazardous substance will be performed by separate contract.

If delay of work in the area delays the current controlling operation, the delay will be considered a right-of-way delay and the Contractor will be compensated for such delay as provided in Section 8-1.09, "Right-of-Way Delays," of the Standard Specifications.

**Section 45 Substitution of Securities for Withheld Funds:**

Upon the Contractor's request, pursuant to Public Contract Code 22300, the Owner will pay to the Contractor the funds withheld from progress payments to ensure performance of the contract, if the Contractor substitutes satisfactory securities as follows.

- (a) At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the Owner, or with a state or federally chartered bank in this state as the escrow agent, who shall then pay those moneys to the Contractor. Upon satisfactory completion of the contract, the securities shall be returned to the Contractor.
- (b) Alternatively, the Contractor may request and the Owner shall make payment of retentions earned directly to the escrow agent at the expense of the Contractor. At the expense of the Contractor, the Contractor may direct the investment of the payments into securities and the Contractor shall receive the interest earned on the investments upon the same terms provided for in this section for securities deposited by the Contractor. Upon satisfactory completion of the contract, the Contractor shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from the owner, pursuant to the terms of this section.
- (c) Securities eligible for investment under this section shall include those listed in Section 16430 of the Government Code, 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 Owner.

The Contractor shall be the beneficial owner of any securities substituted for moneys withheld and shall receive any interest thereon.

- (d)(1) If the Contractor elects to receive interest on moneys withheld in retention by the Owner, the Contractor shall, at the request of any subcontractor, make that option available to the subcontractor regarding any moneys withheld in retention by the Contractor from the subcontractor. If the

Contractor elects to receive interest on any moneys withheld in retention by the Owner, then the subcontractor shall receive the identical rate of interest received by the Contractor on any retention moneys withheld from the subcontractor by the Contractor, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the subcontractor. If the Contractor elects to substitute securities in lieu of retention, then, by mutual consent of the Contractor and subcontractor, the subcontractor may substitute securities in exchange for the release of moneys held in retention by the Contractor.

- (2) This subdivision shall apply only to those subcontractors performing more than five percent of the Contractor’s total bid.
- (3) No contractor shall require any subcontractor to waive any provision of this section.
- (e) The escrow agreement used hereunder shall be substantially similar to the following form:

**ESCROW AGREEMENT FOR  
SECURITY DEPOSITS IN LIEU OF RETENTION**

This Escrow Agreement is made and entered into by and between \_\_\_\_\_  
 \_\_\_\_\_ whose address is \_\_\_\_\_  
 \_\_\_\_\_ hereinafter called “Owner,”  
 \_\_\_\_\_ whose address is \_\_\_\_\_  
 \_\_\_\_\_ hereinafter called “Contractor” and  
 \_\_\_\_\_ whose address is \_\_\_\_\_  
 \_\_\_\_\_ hereinafter called “Escrow Agent.”

For the consideration hereinafter set forth, the Owner, 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 Owner pursuant to the Construction Contract entered into between the Owner and Contractor for \_\_\_\_\_ in the amount of \_\_\_\_\_ dated \_\_\_\_\_ (hereinafter referred to as the “Contract”). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the Escrow Agent. When the Contractor deposits the securities as a substitute for Contract earnings, the Escrow Agent shall notify the Owner 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 Owner and Contractor. Securities shall be held in the name of \_\_\_\_\_ and shall designate the Contractor as the beneficial owner.
- (2) The Owner shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent hold securities in the form and amount specified above.
- (3) When the Owner makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until the time that the escrow created under this contract is terminated. The Contractor may direct the investment 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 Owner 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 Owner. These expenses and payment terms shall be determined by the Owner, 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 Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.
- (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 the Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.
- (7) The Owner shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven days' written notice to the Escrow Agent from the owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the Owner.
- (8) Upon receipt of written notification from the Owner 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 moneys and securities on deposit and payment of fees and charges.
- (9) Escrow Agent shall rely on the written notifications from the Owner and the Contractor pursuant to Sections (5) to (8), inclusive, of this Agreement and the Owner 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 Owner and on behalf of the Contractor in connection with the foregoing, and exemplars of their respective signatures are as follows:

**On behalf of Owner:**

\_\_\_\_\_  
Title  
\_\_\_\_\_  
Name  
\_\_\_\_\_  
Signature  
\_\_\_\_\_  
Address

**On behalf of Contractor:**

\_\_\_\_\_  
Title  
\_\_\_\_\_  
Name  
\_\_\_\_\_  
Signature  
\_\_\_\_\_  
Address

**On behalf of Escrow Agent:**

\_\_\_\_\_  
Title  
\_\_\_\_\_  
Name  
\_\_\_\_\_  
Signature  
\_\_\_\_\_  
Address

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

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

**Owner:**

\_\_\_\_\_  
Title  
\_\_\_\_\_  
Name  
\_\_\_\_\_  
Signature

**Contractor:**

\_\_\_\_\_  
Title  
\_\_\_\_\_  
Name  
\_\_\_\_\_  
Signature

**Section 46 Antitrust Claim Assignment:**

In entering into this public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the Contractor or subcontractor offers and agrees to assign to the awarding body all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgement by the parties.



**Section 47 Examination and Audit of Contracts:**

This contract shall be subject to the examination and audit of the State Auditor at the request of the Owner or as part of any audit of the Owner, for a period of three years after final payment under the contract.

The examinations and audits under this section shall be confined to those matters connected with the performance of the contract, including, but not limited to, the costs of administering the contract.

**Section 48 Sanitary Sewer Overflow Emergency Response Plan:**

The City has adopted an Overflow Emergency Response Plan (OERP) as required by the SWRCB Statewide General Waste Discharge Requirements, in order to support an orderly and effective response to Sanitary Sewer Overflows (SSOs).

Sanitary Sewer Overflows (SSOs) are defined as follows:

Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system including:

- (i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;
- (ii) Overflows or releases of untreated or partially treated wastewater that do not reach the waters of the United States; and
- (iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

The Contractor shall follow the following procedures in the event that you cause or witness a Sanitary Sewer Overflow.

**•IMMEDIATELY NOTIFY THE CITY**

- During Business Hours: (707) 823-5331
- After Hours: (707) 829-4400

**•PROTECT THE STORM DRAINS USING MATS, DYKES, BERMS, ETC.**

**•PROTECT THE PUBLIC** - If the spill is entering an area where public contact may occur, and if it is safe to do so, prevent, to the extent possible, public contact with the sewage until City Maintenance Workers arrive.

**•PROVIDE INFORMATION** - Provide the City Maintenance Workers with information about the overflow such as start time, appearance point, suspected cause, weather conditions, etc.

**•Direct ALL media and public relations requests to:**

- Engineering Manager: (707) 823-2151
- City Manager: (707) 823-1153

**PART III**

**SPECIAL PROVISIONS**

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**PART III**  
**SPECIAL PROVISIONS**

**Section 1 Contract:**

All work described in the plans and specifications will be let under one contract in the manner set forth in the Notice to Bidders, and in the Bidder's Proposal.

**Section 2 Location of Work:**

The work is located in Jewell Avenue and Leland Street as shown on the Improvement Plans.

**Section 3 Governing Documents:**

All work shall be done in accordance with the General Conditions, these Special Provisions, Construction Plans and details and the City of Sebastopol Standard Plans and Details, latest adopted edition, insofar as they may apply.

The Standard Specifications of the Department of Transportation, State of California, dated July 2010, hereinafter referred to as the Standard Specifications.

In the case of conflict between the Standard Specifications, and these Special Provisions, the Special Provisions shall take precedence over and be used in lieu of such conflicting portions.

**Section 4 Description of Work:**

The work consists of water main replacement on Florence Avenue including pipelines, valves, tie-in and appurtenances.

**Section 5 Permits:**

This Contract will constitute the contractor's permit to perform work on Owner's property. The contractor and any subcontractors are also required to obtain City business licenses. The contractor shall be responsible for obtaining these and for paying any associated fees prior to the start of construction and inspection fees as required.

**Section 6 Construction Signs and Barricades:**

The Contractor shall furnish all reconstruction signs and barricades, the cost of which shall be included in the amount paid for Traffic Control System. Contractor shall acquaint himself with applicable portions of Section 7 of the Standard Specifications relating to Public Convenience, Public Safety, Portable Delineators, Preservation of Property, and Indemnity and Insurance.

**Section 7 Dust and Debris Control:**

Dust control shall conform to the provisions in Section 10, "Dust Control," of the Standard Specifications and these Special Provisions.

The Contractor shall be responsible for all mud, rocks, dust, dirt and debris producing materials that originate in the project area and are deposited on other public or private property by truck tire, spillage, or by other means. The contractor shall, before the end of each day's work, clean all paved streets leading from the project that have dust producing materials or debris deposited upon them.

The Contractor shall control dust by the application of water.

In lieu of the provisions of the section paragraph in Section 10-1.04, "Payment," no separate payment will be made to the Contractor when the Engineer orders the application of water for the purpose of controlling dust caused by public traffic only. Full compensation for such dust control will be considered as included in the prices paid for the various items of work involved, and no additional compensation will be allowed.

**Section 8 Watering:**

Water for compacting embankment material, and for laying dust shall be applied by means of pressure-type distributors equipped with a spray system of hoses with nozzles that will insure a uniform application of water.

No additional compensation shall be made for watering, but shall be included in the various items of work.

**Section 9 Existing Facilities:**

As part of the work, existing valves, services, manholes, pipes, sprinklers, curbs, gutters, sidewalks, access ramps to be retained and all other fixtures shall be protected from damage. Contractor shall bring any currently damaged facilities to the attention of the Engineer. If none are reported, all damaged facilities within the job site shall be assumed caused by the Contractor.

**Section 10 Construction Grades:**

The Contractor is responsible for laying out any lines and grades. This layout shall be subject to review and approval by the City before the Contractor proceeds.

**Section 11 Proposed Schedule of Work:**

<b>Bid Opening</b>	<b>March 30, 2022 at 2:00 PM</b>
<b>Award of Contract</b>	<b>April 19, 2022</b>
<b>Deadline to Execute Contract</b>	<b>Ten working days from Notice of Award</b>
<b>Notice to Proceed (approx.)</b>	<b>May 4, 2022</b>

**Completion Date is Sixty (60) working days from Notice to Proceed.**

**Section 12 Material to be Encountered in Excavations:**

The Contractor shall visit the site and satisfy himself regarding the character of the material which may be encountered.

**Section 13 Copies Furnished:**

The Engineer will furnish to the Contractor, free of charge, five (5) sets of the specifications and full size drawings.

**Section 14 Additional Drawings:**

The Engineer will furnish from time to time such additional drawings and information as he may consider necessary for the Contractor's guidance, and the Contractor shall make his work conform to all such drawings.

**Section 15 City Furnished Facilities:**

Water is available from a filler pipe at the City Corporation Yard, or the Contractor may request a hydrant service from the Sebastopol Public Works Department by paying a security deposit of \$200.00, and an installation and removal fee of \$100 for a backflow preventer device to be installed by City forces and removed on completion of the project. The security deposit is refundable on return of the backflow device in good operating condition. Depending on the availability of space, the Contractor may make arrangements to store materials at the City Corporation Yard.

**Section 16 Public Convenience, Safety and Traffic:**

The Contractor shall so conduct his operations in a manner which causes the least possible obstructions and inconvenience to public traffic on public thoroughfares.

Lights, signs, red lights and watchmen as are necessary to give adequate warning to the public and of any dangerous conditions to be encountered as a result thereof, shall be furnished, erected and maintained by the Contractor.

Safety orders, rules and recommendations of the Division of Industrial Safety of the Department of Industrial Relations of the State of California applicable to the work to be done under the contract shall all be obeyed and enforced by the contractor.

All costs involved in respect to the above requirements will be considered as included in the prices bid for the various contract items of work and no additional compensation will be allowed.

**Section 17 Areas for Contractor's Use:**

The right of way shall be used only for purposes that are necessary to perform the required work. The Contractor shall not occupy the right-of-way or allow others to occupy the right-of-way for purposes which are not necessary to perform the required work.

The Contractor shall remove all equipment, materials, and rubbish from the work areas and other City-owned property which he/she occupies and shall leave the areas in the presentable condition in accordance with the provisions in Section 46, "Final Cleaning Up," of these Special Provisions.

The Contractor shall secure at his/her own expense any area required for plant sites, storage of equipment or materials, or for other purposes if sufficient area is not available to him within the contract limits, or at the sites designated on the plans outside the contract limits.

**Section 18 Trees, Shrubs, Grass Areas, Etc.:**

Damage to trees and shrubs should be avoided wherever possible. It shall be the Contractor's responsibility to replace, in kind, any trees or shrubs destroyed or damaged during construction.

Before construction, the City and Contractor shall walk the entire project and City shall take pictures of existing improvements as a record of as-is conditions.

Any existing improvements damaged or removed by the Contractor as a result of his operations shall be repaired or replaced. All costs involved in the protection and restoration of existing improvements shall be included in the prices bid for the various items of work.

**Section 19     Damage to Existing Improvements:**

Any existing improvements damaged or removed by the Contractor as a result of his operations shall be repaired or replaced. Any paving damaged or destroyed during the Contractor's operations shall be replaced in kind to the Engineer's satisfaction. All costs involved in the protection and restoration of existing improvements shall be included in the prices paid for the various items of work.

**Section 20:     Order of Work:**

Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications and these Special Provisions.

Before beginning construction, a preconstruction meeting between the Contractor, City Engineer, and City Inspector will be held.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work and no additional compensation will be allowed.

**Section 21     Property Owner Notifications:**

The Contractor shall notify all property owners and businesses affected by the project work at least 48 hours before work is to begin. In addition, the Contractor shall notify property owner(s) and the City 72 hours before entering private property or interrupting sewer or water service. The notice shall be in writing, placed in the mailboxes with postage, or on door hangers and shall indicate the Contractor's name and phone number, type of work, day(s) and time when work will occur. Notice shall be reviewed and approved by the Engineer before being sent.

Any required shut down of the water system shall be performed by City Public Works forces. Contact the City Public Works Department at least 48 hours before requiring shut down of water mains.

**Section 22     Temporary Erosion Control:**

Temporary erosion control shall consist of, but not be limited to, constructing such facilities and taking such measures as are necessary to prevent, control and abate water, mud, and erosion damage to public and private property as a result of the construction of this project.

Conformance with the requirements of this section shall in no way relieve the Contractor from his responsibilities, as provided in Section 7-1.01G, "Water Pollution," Section 7-1.11, "Preservation of Property," and Section 7-1.12, "Responsibility for Damage," of the Standard Specifications.

Temporary erosion control features as are necessary to provide sediment control shall be constructed and functioning prior to October 15. The Contractor shall construct such supplementary temporary erosion control facilities as are necessary to protect adjacent private and public property.

Temporary erosion control measures shall conform to the current field manual of erosion and sediment control published by the California Regional Water Quality Control Board, San Francisco Bay Region and includes, but is not limited to the following:

- (a) The Contractor shall conduct his operations in such a manner that storm runoff will be contained within the project or channeled into the storm drain system which serves the runoff area. Storm runoff from one area shall not be allowed to divert to another runoff area.
- (b) Storm drain systems, toe of slope drains, and outlet structures shall be constructed and operating before commencing, or concurrently with placing, an embankment. Temporary down drains, drainage structures and other devices shall be provided to channel storm runoff water into the respective permanent storm drain systems during construction. Mud and silt shall be settled out of the storm runoff before said runoff enters the storm drain system.
- (c) Excavation areas, while being brought to grade, shall be protected from erosion and the resulting siltation of downstream facilities and adjacent areas by the use of various temporary erosion control measures. These measures may include, but shall not be limited to: jute mesh; check dams; confined ponding areas to desilt the runoff; and protection, such as sand bags or straw bales around inlets which have not been brought up to grade.
- (d) Contour graded areas shall be protected against erosion and the resulting siltation of downstream facilities and adjacent areas during grading operations. Various measures may include, but shall not be limited to the use of graded contour berms to control sheet flow: supplemental grading of large areas around temporary or unfinished inlet structures, such as inside ramp loops, to provide desilting basins; and temporary ditch paving.

Culvert pipe used in conjunction with temporary erosion control measures which was new when delivered to the project site and, in the opinion of the Engineer, is not damaged and whose dimensions and other properties conform to the requirements for new material may be used in the new work.

Full compensation for any cost involved in performing planned permanent water pollution control and erosion control to act as temporary water pollution control and temporary erosion control shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed.

### **Section 23 Preservation of Property:**

Attention is directed to the provisions in Section 7-1.11, "Preservation of Property," of the Standard Specifications and these Special Provisions.

Existing trees, shrubs, and other plants, that are not to be removed and are injured or damaged by reason of the Contractor's operations, shall be replaced by the Contractor in accordance with the requirements in Section 20-4.07, "Replacement," of the Standard Specifications and the following:

The minimum size of tree replacement shall be 24-inch box and the minimum size of shrub replacement shall be 15-gallon. Replacement ground cover plants shall be from flats and shall be planted 12 inches on center.

Damaged or injured plants shall be removed and disposed of outside the street right of way in accordance with the provisions in Section 7-1.13 of the Standard Specifications. Storm drain easements and temporary construction easements are shown on the plans and shall be staked for location by the surveyors. Temporary easements may be used to move equipment and material and store material as required. The Contractor shall not disturb or remove trees, plant material or facilities located within the confines of the temporary easement unless required by his operations. The Contractor's attention is directed to section entitled, "Final Clean-up," of these Special Provisions.

**Section 24 Progress Schedule:**

Progress schedules will be required for this contract and shall conform to the provisions in Section 8-1.04, "Progress Schedule," of the Standard Specifications.

**Section 25 Cooperation:**

Attention is directed to Sections 7-1.14, "Cooperation" and 8-1.10, "Utility and Non-Highway Facilities," of the Standard Specifications and these Special Provisions.

Other forces may be engaged in installing or in making adjustments to or in relocating various utility or other non-highway facilities throughout the project.

**Section 26 Safety:**

The Contractor is hereby specifically informed that under this contract he has the sole responsibility for the safety of his work, including his workman, equipment and that of subcontractors, and of the general public as they may come in contact with the work. The Engineer or Inspector has specifically **not** been hired to review the Contractor's safety or methods of operation.

At the end of each day, excavations shall be backfilled, plated with steel trench plates or barricaded and fenced.

**Section 27 Obstructions:**

Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities," and Section 15 "Existing Highway Facilities," of the Standard Specifications and these Special Provisions.

Attention is directed to the existence of power, telephone, and cable television poles, underground gas lines, and underground water and sewer lines within the area in which construction is to be performed. The Contractor will be required to work around these facilities.

Prior to starting work, the Contractor shall (a minimum of 2 working days in advance) call Underground Service Alert (USA), toll free, at (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 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 for interference with services resulting from his operations.



**Section 28 Hours of Work:**

Construction work shall be limited to the hours between 7:00 a.m. and 6:00 p.m. Monday through Friday.

**Section 29 Construction Area Signs:**

Construction area signs shall be furnished, installed, maintained and removed when no longer required in accordance with the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these Special Provisions.

Construction area signs shall not be used until they are needed and when no longer needed they shall be removed from the site of the work.

If speed limit construction signs are shown, they shall be covered when no work is being performed and the existing speed limit signs, if of different speed than speed limit construction signs, shall be covered when work is being performed.

The Contractor shall notify the Underground Service Alert (USA) in accordance with the section on "Obstructions" in these Special Provisions at least two working days, but no more than 14 calendar days, prior to commencing any excavation for construction area signposts.

All excavations required to install construction area signs shall be performed by hand methods without the use of power equipment, except that power equipment may be used if it is determined there are no utility facilities in the area of the proposed post holes.

Stationary mounted signs shall be erected on wood posts in the same manner specified for roadside signs and in accordance with the Caltrans Standard Plans.

Attention is directed to section entitled "Traffic Control System" elsewhere in these Special Provisions regarding compensation for construction area signs shown on the plans for traffic control system for lane closure.

No separate measurement or payment will be made for construction area signs. All costs associated with construction area signs shall be included in the lump sum contract price for the work and no additional compensation will be allowed.

**Section 30 Maintaining Traffic:**

Attention is directed to Section 7-1.08, "Public Convenience," Section 7-1.09, "Public Safety," and Section 12 "Construction Area Traffic Control Devices," of the Standard Specification. Nothing in these Special Provisions shall be construed as relieving the Contractor from his responsibilities as provided in said Section 7-1.09.

Lane closures shall conform to the provisions in the section of these Special Provisions entitled "Traffic Control System."

The Contractor shall notify the Engineer of his intent to begin work at least 5 days before work is begun. The Contractor shall cooperate with local authorities relative to handling traffic through the area.

Whenever vehicles or equipment are parked on the shoulder within 6 feet of a traffic lane, the shoulder area shall be closed with fluorescent traffic cones or portable delineators placed on a taper in advance of the parked vehicles or equipment and along the edge of the pavement at 25-foot intervals to a point not less

than 25 feet past the last vehicle or piece of equipment. A minimum of 9 cones or portable delineators shall be used for the taper. A C23 (Road Work Ahead) or C24 (Shoulder Work Ahead) sign shall be mounted on a telescoping flag tree with flags. The flag tree shall be placed where directed by the Engineer.

When leaving a work area and entering a roadway carrying public traffic, the Contractor's equipment, whether empty or loaded, shall in all cases yield to public traffic.

A minimum of one traffic lane, not less than 10 feet wide, shall be open for use by public traffic. When construction operations are not actively in progress, not less than two such lanes shall be open to public traffic.

The full width of the traveled way shall be open for use by public traffic on Saturdays, Sundays, and designated legal holidays; after 3:00 p.m. on Fridays and the day preceding legal holidays; and when construction operations are not actively in progress.

Minor deviations from the requirements of this section concerning hours of work which do not significantly change the cost of the work may be permitted upon the written request of the Contractor if in the opinion of the Engineer public traffic will be better served and the work expedited. Such deviations shall not be adopted until the Engineer has indicated his written approval. All other modifications will be made by contract change order.

At the end of each working day if a difference in excess of 0.15 foot exists between the elevation of the existing pavement between lanes, the Contractor shall furnish and place portable delineators conforming to the provisions of Section 12-3.04, "Portable Delineators" along said drop-off. Full compensation for furnishing and placing delineators and signs shall be considered as included in the various items of work and no additional compensation will be allowed.

Whenever the Contractor's operations obliterate pavement delineation (lane lines, either pavement markers or painted lines or both, or temporary delineation), such pavement delineation shall be replaced by either permanent or temporary delineation before opening the traveled way to public traffic. Temporary delineation shall consist of reflective traffic line tape applied in pieces not less than 4 inches long nor less than 4 inches wide spaced no more than 10 feet apart on curves nor more than 20 feet apart on tangents. Reflective traffic line tape shall be applied in accordance with the manufacturer's instructions. Full compensation for temporary delineation shall be considered as included in the prices paid for the contract items of work that obliterated the existing delineation and no separate payment will be made. Backfilled trenches in the existing pavement shall be temporarily paved and maintained with asphalt concrete, or permanently paved (consistent with the existing pavement) with asphalt concrete, before allowing traffic on the trenches.

### **Section 31 Traffic Control:**

A traffic control system shall consist of closing traffic lanes in accordance with the details shown on the plans, the provisions of Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications, and the provisions under "Maintaining Traffic" elsewhere in these Special Provisions.

The provisions in this section will not relieve the Contractor from his responsibility to provide such additional devices or take such measures as may be necessary to comply with the provisions in Section 7-1.09, "Public Safety," of the Standard Specifications.

The base material of construction area signs shall not be plywood.

If any component in the traffic control system is damaged, displaced or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair said

component to its original condition or replace said component and shall restore the component to its original location.

When lane closures are made for work periods only, at the end of each work period, all components of the traffic control system, except portable delineators placed along open trenches or excavation adjacent to the traveled way, shall be removed from the traveled way and shoulder. If the Contractor so elects, said components may be stored at selected central locations, approved by the Engineer, within the limits of the highway right-of-way.

Traffic control system required for work, which is classed as extra work, as provided in Section 4-1.03D of the Standard Specifications, will be paid for as a part of said extra work.

(a) Removal of On-street Parking:

Forty-eight (48) hours prior to construction, the Contractor shall place barricades signed "NO PARKING - TOW AWAY - Specific Time and Date(s)" at 50 to 60 foot intervals in the work area. "NO PARKING" signs must also state "C.V.C. 22651 (L)." See example below.

"NO PARKING - TOW AWAY" signs shall be submitted for approval by the Engineer before their use. The Contractor shall notify the Engineer immediately after the "NO PARKING" signs are in place. "NO PARKING" signs and barricades shall be supplied by the Contractor.

Failure to comply with this section will prevent the City from towing vehicles parked in the proposed work area. Work will not proceed if vehicles are parked in the proposed work area.

Full compensation for providing all labor, equipment, and materials necessary for the removal of on-street parking shall be considered as included in the price paid for Temporary Traffic Control and no additional compensation shall be allowed.

**Section 32 Existing Facilities:**

The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these Special Provisions.

(a) Removal of Miscellaneous Items:

Various items shown on the plans and specified removed herein shall be completely removed and disposed of.

No separate payment shall be made for the various items to be removed unless specified and listed in the proposal. Such items shall be considered as included in the contract lump sum price for Clearing and Grubbing, and no additional compensation will be allowed.

**PART IV**

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## PART IV – SPECIFICATIONS

### SECTION 10-1 GENERAL

10-1.01 ORDER OF WORK: Order of work shall conform to the provisions in Section 5-1.05, "Order of Work," of the Standard Specifications and these Specifications.

Attention is directed to Section 10-1.11, "Notice to Area Residents" as a controlling scheduling item of work.

The Contractor shall submit the following technical information prior to the pre-construction conference:

1. Emergency Contact Numbers for Prime and Subcontractors.
2. Proposed sequencing of work including street closure and lane closure sequences.
3. Traffic Control Plans specific to Willow Street, High Street and Jewell Avenue.

The Order of Work shall be as follows:

1. Applicable Traffic Control
2. Notice to Area Residents as applicable to Schedule
3. Pothole Existing Utilities
4. Construction of New Watermain
5. Disinfection and Testing
6. Connection to Existing Watermains
7. Project Cleanup

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work and no additional compensation will be allowed.

10-1.02 RELATIONS WITH CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD:

This location is within an area controlled by the Regional Water Quality Control Board. The Contractor shall fully inform himself of all rules, regulations, and conditions that may govern his operations in said area and shall conduct his work accordingly.

The Contractor shall comply with the regulations of the North Coast Regional Water Quality Board and the discharge prohibitions and guidelines pertaining to construction activities listed on pages 1-5-7 through 1-5-9 of the Water Quality Control Plan North Coastal Basin dated April, 1975.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed.

10-1.03 PROGRESS SCHEDULE: Progress schedules will be required for this contract and shall conform to the provisions in Section 8-1.04, "Progress Schedule," of the Standard Specifications.

The progress schedule shall identify refuse collection days. The schedule for demolition, subgrade / base preparation, aggregate base placement, hot mix asphalt placement, striping and marking shall include a makeup day to be included in posting no parking and notices to area residents such that all of the scheduled work will be completed within the scheduled periods. Failure to complete schedule work which results in rescheduling, reposting no parking signs, and redistribution of notices to area residents, all of which shall

be at the Contractor's expense and shall not be a basis for time extensions unless caused by unforeseen weather.

Requests for changes in the schedule must be submitted to the City for approval at least 48 hours prior to beginning of construction of the scheduled work.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work and no additional compensation will be allowed.

10-1.04 COOPERATION: Attention is directed to Sections 7-1.14, "Cooperation," and 8-1.10, "Utility and Non-Highway Facilities," of the Standard Specifications and these Specifications.

In some instances the Contractor may be required to coordinate work and share work areas with PG&E, SBC, Comcast and the City's other contractors. The Contractor shall cooperate at all times with utility agencies and other contractors in the vicinity of the project and as directed by the City.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work and no additional compensation will be allowed.

10-1.05 SAFETY: The Contractor is hereby specifically informed that under this contract he has the sole responsibility for the safety of his work, including his workforce, equipment and that of subcontractors, and of the general public as they may come in contact with the work. The City or City's Inspector has specifically not been hired to review the Contractor's safety or methods of operation.

10-1.06 OBSTRUCTIONS: Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities," and Section 15 "Existing Highway Facilities," of the Standard Specifications and these Specifications.

Attention is directed to the existence of underground gas mains, gas services, water mains, fire hydrants, water services, sewer mains and sewer laterals within the area in which construction is to be performed. The Contractor will be required to protect these facilities to perform work in accordance with the Plans.

The Contractor will be required to protect existing curb, gutter, sidewalk, driveways and access ramps and other improvements that are to remain in place within the construction area. The Contractor will be required to protect power, telephone and cable television within the construction area and will be held liable to the owners of such facilities for interference or damage resulting from their operations.

Full compensation for conforming to the requirements of this section shall be considered as included in the contract prices paid for the various items of work and no additional compensation will be allowed.

10-1.07 HOURS OF WORK: Construction work shall be limited to the hours between 7:00 AM and 6:00 PM Monday through Friday. Except as stated below, no construction is permitted on Saturdays or Sundays. The Contractor's attention is directed to restrictions in the section entitled "Maintaining Traffic," Part III – Section 30 of the Special Provisions.

10-1.08 DUST CONTROL: Dust control shall conform to the provisions in Section 10, "Dust Control," of the Standard Specifications and these Specifications.

In lieu of the provisions of the second paragraph in Section 10-1.04, "Payment," no separate payment will be made to the Contractor when the City orders the application of water for the purpose of controlling dust caused by public traffic only. Full compensation for such dust control will be considered as included in the prices paid for the various items of work involved, and no additional compensation will be allowed.

10-1.09 CONSTRUCTION AREA SIGNS: Comply with Part III – Section 29 of the Special Provisions. Construction area signs shall be paid as part of the bid item for Traffic Control. No separate payment will be made therefore.

10-1.09a Removal Of On-Street Parking: During the period seventy-two (72) to forty-eight (48) hours prior to construction, the Contractor shall place barricades signed "NO PARKING - TOW AWAY - Specific Time and Date(s)" at 50 to 60 foot intervals in the work area. The first and last sign shall also be stenciled with the word "BEGIN" or "END" as appropriate to delineate the limits of the no parking area (See example).

"NO PARKING - TOW AWAY" signs shall be submitted for approval by the City before their use. The Contractor shall notify the City immediately after the "NO PARKING" signs are in place. The Contractor shall supply "NO PARKING" signs and barricades.

Failure to comply with this section will prevent the City from towing vehicles parked in the proposed work area. Work will not proceed if vehicles are parked in the proposed work area.

Full compensation for providing all labor, equipment and materials necessary for the furnishing and placement of construction area signs shall be included in the lump sum paid for construction area signs and no additional compensation shall be allowed, therefore. Compensation for providing all labor, equipment and materials necessary for the removal of construction area signs shall be considered as included in the prices paid for related bid items and no additional compensation shall be allowed.

10-1.10 MAINTAINING TRAFFIC: Comply with Part III – Section 30 of the Special Provisions. Maintaining Traffic shall be paid as part of the bid item for Traffic Control. No separate payment will be made therefore.

10-1.11 NOTICE TO AREA RESIDENTS: The Contractor shall provide notice to all residents and businesses affected by the construction relative to the Contractor’s schedule of work including the traffic control provisions during construction. A sample notice shall be provided to the Contractor by the City. If the Contractor desires to modify the notice, the revisions must be submitted to the City for approval at least 10 days prior to beginning work. The Notice to Area Residents shall be a **door hanger type notice printed on heavy paper or cardboard**. The dates of work shall match the work schedule provided to and approved by the City.

If the Contractors schedule shall change to include dates of work beyond the dates indicated in the posted notices, the Contractor shall repost such notices at least 48 hours prior to commencing work on the changed schedule work.



10-1.12 TRAFFIC CONTROL: Comply with Part III – Section 31 of the Special Provisions. All costs associated with traffic control including construction area signs, maintaining traffic, placing no parking signs and notice to area residents shall be included in the lump sum paid for Traffic Control. The lump sum paid for traffic control shall include all costs associated with the work described herein including all labor, equipment, materials, printing costs and other associated costs with completing the work. Payment for Traffic Control shall be paid as a percentage of work completed.

10-1.13 EXISTING HIGHWAY FACILITIES: The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these Specifications. Removal of traffic stripes shall conform to the provisions of Sections 15-2.02B and 15-2.02C of the Standard Specifications and these Specifications.

Residue from the removal of existing roadway, curb, gutter, sidewalk and ramp improvements shall be disposed of immediately after removal. Residue shall not be allowed to enter the storm drain system. Disposal shall be performed in accordance with Section 7-1.13 "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved including, but not limited to, removal and disposal of existing traffic markings shall be considered as included in the contract unit prices for the various items of work indicated in the bid schedule as indicated elsewhere in these special conditions. No additional compensation will be allowed.

10-1.14 CLEARING AND GRUBBING: Clearing and grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these Specifications.

All existing vegetation, outside the areas to be cleared and grubbed, shall be protected from the Contractor's operations unless specifically shown on the plans to be removed. Nothing herein shall be construed as relieving the Contractor of his responsibility for final cleanup of the highway as provided in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications and Section 10-2.15 of these Specifications.

Compensation for clearing and grubbing shall be included in the various items of work and no separate or additional compensation shall be made therefore.

10-1.15 WATERING: Watering shall conform to the provisions in Section 17, "Watering," of the Standard Specification.

The City will supply a hydrant meter for construction at one location at no cost to the Contractor. The location and rate of withdrawal will be subject to City approval. Contractor shall determine, with the City, the cost of water to be supplied for watering.

Full compensation for developing a water supply shall be considered as included in the contract prices paid for the various items of work involved and no additional compensation will be allowed.



**TECHNICAL SPECIFICATIONS**

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## 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 install approximately 410 Linear Feet (LF) of 10” PVC water main via open trench, that will allow for the abandonment of approximately 275 LF of existing 10” cast iron water main, in Sebastopol, California. Additionally, the work includes connection of the new 10” PVC water main to the existing 10” water main, installation of two (2) new 10” gate valves, abandonment of the existing 10” water main via slurry fill method, permanent trench restoration, installation of three (3) new gate valves on the City’s high pressure Zone 2 system, and all other work described in the plans and specifications in accordance with the Contract Documents.
- B. All work to be performed is located along Leland St. and Jewell Ave.
- 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 ATT.
- 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.

##### 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. There will be no prebid conference scheduled for this project.

- C. At least two weeks prior to the start of construction, Contractor shall contact Underground Service Alert (USA) 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 “First Street Water Main Relocation” dated August 2021. 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.

1.9 COPIES OF DRAWINGS AND SPECIFICATIONS

- A. Full size prints shall be used for construction. The Contractor will be furnished with 5 sets of full-sized drawings, along with electronic copies of the drawings and specifications and will be responsible for providing hard copies of the drawings and specifications he/she may require to carry on the work in a satisfactory manner.

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. 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**

1.01 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.

1.02 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.

#### 1.03 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: utility potholing, initial and final saw cutting, excavation and disposal of trench section materials including pavements, soils, curbs, gutters, 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 of asbestos cement pipe, trench plating, control of grades, survey construction staking, protection of trees and roots, aggregate base, temporary trench paving and maintenance, permanent trench paving, adjusting new and existing utility rims and covers to finish grade, replacement of curbs and gutters, 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.

#### 1.04 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

### 2.01 MOBILIZATION AND DEMOBILIZATION (Bid Item No. 1)

- A. Full compensation for **Mobilization and Demobilization** will be paid for at the contract **lump sum** (LS) price, which price shall include full compensation for all work associated with the mobilization and demobilization of Contractor materials, equipment, personnel, start-up submittals, temporary facilities and related items. Measurement for payment for this bid item will be based upon completion of such work as a lump sum (LS), non-prorate able pay item, and shall require completion of all of the items listed in Section 9-1.16D, Mobilization of the State Standard Specifications.
- B. Payment for “Mobilization and Demobilization” will be made in two (2) payments (75% first payment and 25% upon demobilization) totaling the lump sum (LS) amount listed in the Bid Schedule under Item No. 1, one at the completion of mobilization and one at the completion of demobilization, which price shall constitute full compensation for all such work. No part of which will be approved for payment under the Contract until all mobilization items listed herein have been completed as specified. The scope of the work included under this bid item shall include but not be limited to the following principal items:
1. Arrangement with and payment for project staging areas with necessary responsible parties, inclusive of all necessary site investigation, reporting, permitting, traffic control, crushed rock surfacing (if required), Water Pollution Control Plan, storm water best management practices, and all other improvements upon the land and work associated with the establishment and ongoing maintenance of staging areas.
  2. Moving on to the project site of all Contractor's equipment, personnel, and temporary and permanent facilities required for the project.
  3. Installing temporary construction power, wiring, and lighting facilities, as required.
  4. Providing site sanitary facilities.
  5. Furnishing, installing, and maintaining all storage buildings or sheds required for temporary storage of products, equipment, or materials that have not yet been installed in the Work. All such storage shall meet manufacturer's specified storage requirements, and the specific provisions of the specifications, including temperature and humidity control, if recommended by the manufacturer, and for all security.
  6. Any work, coordination, hardware/software, Internet, and related technical or process-based activities associated with submittals, RFIs, and other items for coordination of project.
  7. Obtaining and paying for all required bonds, insurance, and permits and licenses.
  8. Posting all OSHA required notices and establishment of safety programs.
  9. Submittal of required Construction Schedule.
- C. Payment for demobilization shall occur when all required items per the contract are fulfilled, including the submittal and acceptance of Contractor's record drawings, and the site is free of equipment, spare materials, temporary facilities, and is clean.

Note: No payment for the “Mobilization” bid item will be made unless the construction schedule and traffic control plan have been submitted and accepted by the Engineer.

- D. In addition to the requirements specified above, all submittals shall conform to the applicable requirements of Section 01 33 00, "Submittals."



- E. Maximum limit for Mobilization and Demobilization is 6% (six percent) of the Total Bid Price.

2.02 WATER POLLUTION CONTROL (Bid Item No. 2)

- 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.

2.03 SHORING AND TRENCH SAFETY (Bid Item No. 3)

- 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.

2.04 TEMPORARY TRAFFIC CONTROL (Bid Item No. 4)

- 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. It is expected that the installation phase will require between 30 and 50 calendar days.
- 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.

2.05 DEWATERING (Bid Item No. 5)

- A. Measurement for payment for this bid item will be based upon, but not limited to completion of all the necessary measures to dewater excavations during construction, including: but not limited to all planning, design, engineering, labor, materials, tools, equipment, permits and permit fees, and dewatering fees, excavation, wells, pumps, piping, temporary trenching of piping (e.g. under road crossings and driveways) and associated utilities if necessary, Baker Tank (as required), power supply, continuous monitoring and measurement of existing flows and flow capacities of systems receiving flows, continuous monitoring and measurement of dewatering flows, modification of dewatering flows based on the available capacity of downstream systems, providing, operating, maintaining, and removal of all materials associated with particulate/sediment filters used during discharge to the sanitary sewer system, sampling, testing, lab analysis, providing back-up dewatering systems as necessary to continue work operations, coordination with the City and/or other agency having jurisdiction for access, cleaning and monitoring of existing systems, treatment, conveyance and legal discharge, removal of wells, and all other related work per the Contract Documents.
- B. Payment for **Dewatering** 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.
- C. City to reimburse the Contractor for actual fees charged by the City for discharge to the sanitary sewer system. Reimbursement shall not include any Contractor's markup.

2.06 10" WATER MAIN (Bid Item No. 6)

- 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 10-inch water main and appurtenances as shown on the Drawings, as based upon installing the pipeline per paragraph 1.03.C of this section, and as required per the Contract Documents.
- B. Payment for **10" 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

2.07 10" GATE VALVE (Bid Item No. 7)

- 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 10-inch gate valves and appurtenances as shown on the Drawings, as based upon installing the pipeline per paragraph 1.03 D of this section, and as required per the Contract Documents.
- B. Payment for **10" 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

2.08 CONNECT TO EXISTING WATER MAIN (Bid Item No. 8)

- 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 providing connection between the new water main and existing water main per the Contract Documents as based upon installing the pipeline per paragraph 1.03 D of this section, and in accordance with City standards.
- B. Payment for **Connect to Existing Water Main** 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.

2.09 ABANDON WATER MAIN (Bid Item No. 9)

- 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, filling such mains and pipelines, and appurtenance and handling, hauling, and disposal of excess and/or removed concrete materials as required, and as based upon installing the pipeline per paragraph 1.03 D of this section.
- B. Payment for **Abandon Water Main** will be made at the lump sum (LS) bid 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.

2.10 10"X10"X10" TEE ON ZONE 2 WATER MAIN (LELAND ST.) (Bid Item No. 10)

- 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 providing the installation of the new tee on the existing water main, to allow for installation of new 10" gate valves per the Contract Documents as based upon installing the pipeline per paragraph 1.03 D of this section, and in accordance with City standards.

- B. Payment for **10"x10"x10" Tee on Zone 2 Water Main (Leland St.)** 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 special provisions, and no additional allowances will be made therefor.

2.11 3/4" WATER SERVICE (Bid Item No. 11)

- 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 1.03 D 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.

2.12 PAVEMENT STRIPING AND MARKINGS (Bid Item No. 12)

- A. Measurement for payment for this bid item will be based upon, but not limited to, all necessary work including furnishing all labor, tools, materials and equipment required to restore all pavement striping and markings disturbed during construction, in accordance with Caltrans and City Standards.
- B. Payment for Pavement Striping and Markings will be made at the contract 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.

**PART 3 - EXECUTION - (NOT USED)**

END OF SECTION

**SECTION 01 30 00**

**ADMINISTRATIVE REQUIREMENTS**

**PART 1 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, 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.

#### 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. 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. Record observations for signature of Contractor.
- B. Documentation:
  - 1. Submit two copies of photographs, videotapes and other records documenting examination for Engineer's signature. Engineer will review, sign, and return one record copy of every observation document and photograph to Contractor to be kept on file in Contractor's field office as site records.
  - 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.
- C. Notification: The Contractor shall notify all affected property owners at least one week prior to construction.

#### 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 to ensure that 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.

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 Engineer.

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 and 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 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 2 PRODUCTS - (NOT USED)**

#### **PART 3 EXECUTION - (NOT USED)**

END OF SECTION

## SECTION 01 32 16

### CONSTRUCTION PROGRESS SCHEDULE

#### PART 1 GENERAL

##### 1.1 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.

##### 1.2 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.

##### 1.3 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 15 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. Resource loading of each activity shall list all personnel by labor category and equipment type and capacity proposed to complete the activity in the duration shown.
  8. 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.

1.4 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.

#### 1.5 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.

#### 1.6 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 Government 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 2 PRODUCTS - (NOT USED)**

**PART 3 EXECUTION - (NOT USED)**

END OF SECTION

## SECTION 01 33 00

### SUBMITTALS

#### PART 1 GENERAL

##### 1.1 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.

##### 1.2 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 show clearly 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.

1.3 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.

1.4 REQUIRED SUBMITTALS

- C. Construction Schedule. The Contractor shall furnish the Engineer his/her proposed work schedule within 15 days after award of contract. 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.
- D. Payment Schedule. The Contractor shall furnish the Engineer a detailed payment schedule within 15 days of award of contract. This schedule shall be based upon the Contract Bidding Schedule but with sufficient additional detail to allow accurate calculation of the Monthly Progress Payment. Lump sum bid items shall be broken down into their component parts, i.e., mobilization, excavation, arsenic treatment system, etc. in accordance with Section 01 30 01 Schedule of Values with a cost figure for each.
- E. 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.
- F. As-built drawings: One (1) complete set of (22" x 34") blue-line 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.

1.5 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.

#### 1.6 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with approved schedule.
- B. Deliver submittals electronically in PDF format.
- C. 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.
- D. A single submittal 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.
- E. 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.
- F. 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.



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

- A. The Engineer's review is for general conformance with the design concepts 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.

1.8 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.

1.9 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 government furnished Submittal Form R1-67 which shall be used as the document for approving or disapproving the material. Written approval must be obtained from the Government 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. Material or finish samples shall be submitted in five (5) sets. Items submitted shall be plainly marked to indicate which options, models etc. are proposed.

**PART 2 PRODUCTS - (NOT USED)**

**PART 3 EXECUTION - (NOT USED)**

END OF SECTION

**SECTION 01 40 00**  
**QUALITY CONTROL**

**PART 1 GENERAL**

**1.1 PERFORMANCE OF WORK BY CONTRACTOR**

- A. The Contractor's procedure and methods of construction may, in general, be of his/her 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 he 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 77 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 1 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. 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)
- C. 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
- D. 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.
- E. 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.

- F. Residents affected by construction must be provided passage and access through the Work area to the maximum extent possible.
- G. The Contractor must provide multiple, advance written notices of closures to all affected property owners in a form approved by the Engineer.
- H. 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.
- I. 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.
- J. 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.
- K. 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.
- L. The Contractor must comply with the California Manual on Uniform Traffic Control Devices (MUTCD) at all times.
- M. 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.

1.8 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.

1.9 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.

#### 1.10 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 2 PRODUCTS (NOT USED)**

## **PART 3 EXECUTION**

### **3.1 TEMPORARY UTILITIES**

#### **A. Power:**

1. Electric power is not available at the site for the Contractor's. 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. 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.

#### **D. 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.

#### **E. 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.

- F. 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.
- G. 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).

### 3.2 PROTECTION OF WORK AND PROPERTY

- A. General:
  - 1. Perform Work within rights-of-way and easements in a systematic manner that minimizes inconvenience to property owners and the public.
  - 2. No residence or business shall be cut off from vehicular traffic unless special arrangements have been made.
  - 3. 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.
  - 4. 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.
  - 5. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.
  - 6. Keep fire hydrants and water or sewer control valves free from obstruction and available for use at all times.
  - 7. 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.
  - 8. 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.
  - 9. 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. Waterways: Keep ditches, culverts, and natural drainages continuously free of construction materials and debris.

H. 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.

### 3.3 TEMPORARY CONTROLS

- A. Air Pollution Control: Comply with requirements of the Federal Clean Air Act 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.

### 3.4 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.

### 3.5 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.

3.6 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.

3.7 VEHICULAR TRAFFIC

- A. Comply with Part III, Section 30 of the Contract Special 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 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.

### 3.8 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.

**3.9 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

**SECTION 01 60 00**

**PRODUCT REQUIREMENTS**

**PART 1 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. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.
- C. 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 manufacture'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 weather proof 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 2 PRODUCTS - (NOT USED)**

**PART 3 EXECUTION - (NOT USED)**

END OF SECTION

**SECTION 01 70 00**

**PROJECT CLOSEOUT**

**PART 1 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 is the allowance of final estimates by the Contracting Officer. The Engineer shall certify to the Contracting Officer 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 Contracting Officer a release of claims Form DI-137, properly executed by the Contractor, releasing claims against the United States arising out of the contract, other than claims specifically excepted from the operation of the release.

**PART 2 PRODUCTS - (NOT USED)**

**PART 3 EXECUTION - (NOT USED)**

END OF SECTION

**SECTION 01 72 00**

**RECORD DOCUMENTS**

**PART 1 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 2 PRODUCTS**

2.1 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 3 EXECUTION

### 3.1 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

#### PART 1 GENERAL

##### 1.1 SUMMARY

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

##### 1.2 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.

##### 1.3 PERFORMANCE REQUIREMENTS

- A. Construction Waste:
  - 1. Site-clearing and demolition waste.
  - 2. Soils.
  - 3. Concrete and asphalt.
  - 4. Lumber.
  - 5. Wood sheet materials.
  - 6. Metals.
  - 7. Piping and fittings.
  - 8. Electrical conduit.

9. Packaging: Regardless of salvage/recycle goal indicated in paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
  - a. Paper.
  - b. Cardboard.
  - c. Boxes.
  - d. Plastic sheet and film.
  - e. Polystyrene packaging.
  - f. Wood crates.
  - g. Plastic pails.
  - h. HI-5 beverage containers.

#### 1.4 ACTION SUBMITTALS

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

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Report: Concurrent with final Application for Payment, submit report. Include the following information:
  1. Material category.
  2. Generation point of waste.
  3. Total quantity of waste in tons.
  4. Quantity of waste salvaged, both estimated and actual in tons.
  5. Quantity of waste recycled, both estimated and actual in tons.
  6. Total quantity of waste recovered (salvaged plus recycled) in tons.
  7. 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.

#### 1.6 QUALITY ASSURANCE

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

1.7 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.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

3.1 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.
  - 1. 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.
  - 1. Distribute waste management plan to everyone concerned within three days of submittal return.
  - 2. 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.
  - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
  - 2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 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.
1. 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.
    - a. Inspect containers and bins for contamination and remove contaminated materials if found.
  2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
  4. Store components off the ground and protect from the weather.
  5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

### 3.3 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. 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.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes:

1. No burning of brush or any other materials will be allowed on the site.
2. 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:

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

3.4 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.
  - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  - 2. 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 1 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 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

END OF SECTION



## SECTION 02 01 10

### EXISTING UTILITIES AND UNDERGROUND STRUCTURES

#### PART 1 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) at (800) 227-2600. 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 utility.

##### 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 electrical power. Call: (707) 468-3954 a minimum of 48 hours prior to any excavation within 10 feet of existing gas and electrical lines.
- 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. Water Service, City of Sebastopol has jurisdiction over water utilities. Call: (707) 823-5331.
- E. Drainage, City of Sebastopol has jurisdiction over drainage facilities in the area. Call: (707) 823-5331.
- F. 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 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. Pavement Striping and Markings. The Contractor shall restore all pavement striping and markings disturbed by construction activity. Striping and markings shall conform with Caltrans standards. The materials used shall match the adjacent striping and/or marking.
- E. 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.

#### 1.7 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.

1.8 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.

1.9 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 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

3.1 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.

3.2 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.

END OF SECTION

**SECTION 02 41 10**

**DEMOLITION, SALVAGE AND ABANDONMENT**

**PART 1 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. 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 2 PRODUCTS (NOT USED)**

**PART 3 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. 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.
- E. 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.
- F. 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 Utility Owner, 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, 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. 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 1 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 box, monument box, and cast-in-place concrete for 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 2 PRODUCTS**

2.1 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.

## 2.2 COMPOUNDS, HARDENERS AND SEALERS

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

## 2.3 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 3 EXECUTION

### 3.1 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.

### 3.2 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.

### 3.3 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.

3.4 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.

3.5 DEFECTIVE CONCRETE

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

END OF SECTION

**SECTION 31 00 00**

**EARTHWORK**

**PART 1 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. The Geotechnical Engineer will perform all observations and testing for excavations and trenches and in paved areas.
- E. 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. Material Source: Submit name of imported fill materials supplied.

**PART 2 PRODUCTS**

2.1 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.

2.2 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.

2.3 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%

2.4 PIPE BEDDING MATERIAL

- A. Pipe bedding material shall be as specified on City Standard Drawing No. S1.2:

2.5 TRENCH BACKFILL MATERIAL

- A. Trench backfill material shall be in accordance with City of Sebastopol Standards.

2.6 PERMEABLE MATERIAL

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

2.7 AGGREGATE SUBBASE

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

2.8 AGGREGATE BASE

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

2.9 SAND

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

2.10 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.

**PART 3 EXECUTION**

3.1 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.



3.2 CLEARING AND GRUBBING

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

3.3 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.

3.4 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.

3.5 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.

3.6 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.

3.7 REMOVAL OF WATER

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

3.8 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.

### 3.9 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.

### 3.10 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 into dense "Wilson Grove Formation" is anticipated for this project. The Contractor shall anticipate this requirement and account for it in their bid and excavation efforts.
- C. Explosives and Blasting: Use of Explosives and Blasting will not be permitted.

### 3.11 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.

### 3.12 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 overlying 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.

### 3.13 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.

3.14 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.

### 3.15 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.

### 3.16 WASTE MINIMIZATION

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

### 3.17 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.

3.18 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.

3.19 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.

3.20 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.

**3.21 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.

**3.22 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 1 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. Contractor's responsibilities.
- D. Contractor's trench safety plan.
- E. Contractor's supervisor.
- F. 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 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

END OF SECTION

**SECTION 31 23 00**

**TRENCH EXCAVATION AND BACKFILL**

**PART 1 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: City of Sebastopol 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, 2010, 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 2 PRODUCTS**

#### 2.1 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.

#### 2.2 BEDDING AND COVER MATERIAL

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

#### 2.3 TRENCH BACKFILL

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

#### 2.4 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.

#### 2.5 GEOTEXTILE FABRICS

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

2.6 SLURRY CEMENT BACKFILL

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

2.7 STEEL PLATE

- A. When steel plate bridging is provided in lieu of backfill and temporary asphalt, it shall 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 3 EXECUTION**

3.1 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 300 feet of excavation trench will remain unbackfilled at the end of each days 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.

3.2 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.

### 3.3 PAVING REMOVAL

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

### 3.4 REMOVAL OF WATER

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

### 3.5 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.

### 3.6 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 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.

3.7 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.

3.8 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. Jetting of trench backfill will not be allowed.
- 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.

3.9 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.

### 3.10 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 backfill 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.

### 3.11 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. 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.

### 3.12 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.

3.13 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

#### PART 1 GENERAL

##### 1.1 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 excavations, in accordance with the requirements of the Contract Documents, to enable the pipes 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. 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.
- E. 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.
- F. The Contractor shall obtain any and all permits required in conjunction with dewatering operations, including permits for construction of dewatering wells.

##### 1.2 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

##### 1.3 DEFINITIONS

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

##### 1.4 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 City, 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.

#### 1.5 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
  - 1. 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.
  - 2. 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:
  - 1. Dewatering Pumps: Indicate sizes, capacities, priming methods, and engine or motor characteristics.
  - 2. Pumping equipment for control of discharge.
  - 3. Size of tank(s) used for storage.
  - 4. Specifications and size and type of filters and any other materials used for filtration.

#### 1.6 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.

#### 1.7 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.

#### 1.8 SEQUENCING

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

#### 1.9 COORDINATION

- A. Coordinate work to permit the following construction operations to be completed on stable substrate.
  - 1. 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.

### **PART 2 PRODUCTS**

#### 2.1 DEWATERING EQUIPMENT

- A. Select dewatering equipment to meet specified performance requirements.

### **PART 3 EXECUTION**

#### 3.1 DEWATERING OPERATIONS

- B. Install dewatering system in accordance with the approved Dewatering Plan.
  - 1. 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.
  - 2. Install the dewatering system in accordance with State, local and Unified Building Code standards.
- C. Remove water from the excavation in accordance with the approved Dewatering Plan.
  - 1. Keep excavations free from water during construction.
  - 2. 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.
  - 3. 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.
  - 4. Operate dewatering systems continuously until backfill has been completed to 1-foot above the normal static groundwater level.

5. 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.
  6. Control groundwater to prevent softening of the bottom of excavations, or formation of “quick” conditions. Dewatering systems shall not remove natural soils.
  7. At all times, site grading shall promote drainage away from excavations. Surface runoff shall be diverted from excavations.
  8. Dewatering in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.
  9. Control surface runoff to prevent entry or collection of water in excavations.
- D. Notify the Engineer and stop excavation work should the dewatering system not adequately control water within the excavation.
1. Supplement or modify dewatering system and provide other remedial measures to control water within excavation.
  2. Demonstrate dewatering system operation complies with performance requirements before resuming excavation operations.
- E. Notify the Engineer and stop excavation work if potentially contaminated groundwater is encountered.
1. Upon notification from the Contractor regarding potential groundwater contamination, the City will sample and analyze to verify the existence and extent of contamination.
- F. Notify the Engineer and stop excavation work if settlement or ground movement is detected.
1. Contractor shall control the rate and effect of the dewatering in such a manner as to avoid all settlement and subsidence.
  2. 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.
- G. Maintain all equipment in an operable state.
1. Inspect equipment daily and repair or replace as needed.
  2. Clean accumulated sediment from tanks as needed.
- H. Remove dewatering systems after dewatering operations are discontinued.
1. 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.
  2. Repair damage caused by dewatering systems or resulting from failure of systems to protect property.

END OF SECTION

**SECTION 31 25 00**

**EROSION CONTROL**

**PART 1 GENERAL**

1.1 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.
  - 1. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
    - a. ASTM D 4439-14 Standard Terminology for Geosynthetics
    - b. ASTM D 4491-14 Water Permeability of Geotextiles by Permittivity
    - c. ASTM D 4533-11 Trapezoid Tearing Strength of Geotextiles
    - d. ASTM D 4632-13 Grab Breaking Load and Elongation of Geotextiles
    - e. ASTM D 4751-12 Determining Apparent Opening Size of a Geotextile
    - f. 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 (June 2011).
- 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/>.

1.2 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. Heavy equipment shall be placed outside of drainage channels except when necessary to perform the Work.
- H. 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.
- I. 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.

### 1.3 EROSION AND SEDIMENT CONTROLS

- A. The controls and measures required by the Contractor include but are not limited to the items below.
  - 1. 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.
    - a. 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:
      - 1) Along the downhill perimeter edge of all areas disturbed.
      - 2) Along the top of the slope or top bank of drainage ditches, channels, swales, etc. that traverse disturbed areas.

- 3) Along the toe of all cut slopes and fill slopes of the construction areas.
  - 4) 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.
  - 5) Perpendicular to the flow in the bottom of new drainage ditches, channels, and swales. Rows shall be spaced a maximum of 100 feet apart.
  - 6) At the entrance to culverts that receive runoff from disturbed areas.
- b. 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.

#### 1.4 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.
1. 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.
  2. 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.
  3. 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.
  4. The WPCP shall incorporate control measures and minimum requirements in the following categories:
    - a. Soil stabilization practices;
    - b. Sediment control practices;
    - c. Wind Erosion Control practices;
    - d. Tracking control practices;
    - e. Non-storm water management and waste management and materials disposal control practices.

5. 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.
  6. 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.
  7. The following contract items of work, as shown on the project Plans, shall be incorporated into the WPCP as critical temporary control measures:
    - a. During construction and as part of the erosion control measures:
      - 1) Place fiber rolls around all soil stock piles and at the grading limits.
      - 2) Place straw bales or rock bags around all storm drain inlets.
      - 3) 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.
  8. 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.
  9. The WPCP shall include, but not be limited to, the following items as described in the Handbook:
    - a. Project description and Contractor's certification;
    - b. Project information;
    - c. Pollution sources, control measures, and water pollution control drawings; and
    - d. Amendments, if any.
  10. 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.
  11. 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:
1. 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.

## **PART 2 PRODUCTS**

- 2.1 TEMPORARY FIBER ROLLS (sediment logs or wattles)
  - A. Standard Specifications, Section 21-1.02P Fiber Rolls.
    - 1. Type A or Type B
    - 2. 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.
- 2.2 EROSION CONTROL BLANKETS
  - A. Standard Specifications, Section 21-1.02O Jute Mesh or Netting.
- 2.3 TEMPORARY COVERS
  - A. Standard Specifications, Section 13-5.02F Temporary Covers.
  - B. Standard Specifications, Section 88-1.02H Temporary Covers.
- 2.4 GRAVEL-FILLED BAGS
  - A. Standard Specifications, Section 13-5.02G Gravel-Filled Bags.
  - B. Standard Specifications, Section 88-1.02F Gravel-Filled Bags.
- 2.5 SEDIMENT FILTER BAGS
  - A. Standard Specifications, Section 88-1.02G Sediment Filter Bag.
- 2.6 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).
- 2.7 TEMPORARY TACKED STRAW
  - A. Standard Specifications, Section 13-5.03H Temporary Tacked Straw.
- 2.8 TEMPORARY HYDROSEED

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

### **PART 3 EXECUTION**

#### **3.1 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.

### 3.2 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.

### 3.3 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

**SECTION 32 12 16**

**HOT MIX ASPHALT PAVING**

**PART 1 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 accordance with City of Sebastopol Standards.
- 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. T-304 (2008) Uncompacted Void Content of Fine Aggregate.
  - 2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
    - a. ASTM B 117 (2009) Standard Practice for Operating Salt Spray (Fog) Apparatus.
    - b. ASTM D 150 (2004) Standard Test Methods for AC Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulation.
    - c. ASTM D 412 (2006ae2) Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.
    - d. ASTM D 822 (2010) Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
    - e. ASTM D 2041 (2011) Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures.

- f. ASTM D 2240 (2010) Standard Test Method for Rubber Property—Durometer Hardness
  - g. ASTM D 4791 (2010) Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.
3. CALIFORNIA TEST METHODS (CT)
- A. CT 125 (2010) Sampling Highway Materials and Products Used in the Roadway Structural Sections.
  - B. CT 202 (2010) Method of Test for Sieve Analysis of Fine and Coarse Aggregates.
  - C. CT 205 (2010) Method of Test for Percentage of Crushed Particles.
  - D. CT 211 (2010) Method of Test for Abrasion of Coarse Aggregate by use of the Los Angeles Abrasion Testing Machine.
  - E. CT 217 (2008) Method of Test for Sand Equivalent.
  - F. CT 226 (2010) Method of Test for Moisture Content of Soils and Aggregates by Oven Drying.
  - G. CT 308 (2010) Determining Bulk Specific Gravity and Density of Compacted Hot Mix Asphalt.
  - H. CT 309 (2010) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures.
  - I. CT 366 (2000) Stabilometer Value.
  - J. CT 367 (1999) Recommending Optimum Bitumen Content (OBC).
  - K. CT 370 (2002) Determining Moisture Content of Asphalt Mixtures or Mineral Aggregate Using Microwave Ovens.
  - L. CT 371 (2003) Resistance of Compacted Bituminous Mixture to Moisture Induced Damage.
  - M. CT 375 (2004) Determining the In-Place Density and Relative Compaction of AC Pavement.
  - N. CT 379 (2000) Determining Asphalt Content of Bituminous Mixtures (Troloxer Nuclear Gauge Model 3241).
4. CALTRANS LABORATORY PROCEDURE (LP)
- A. LP-2 (2004) Determination of the Voids in Mineral Aggregate.
  - B. LP-3 (2004) Determination of the Voids Filled with Asphalt.
  - C. LP-4 (2004) Determination of Dust Proportion
  - D. LP-9 (2006) Hot Mix Asphalt (HMA) using up to 15% Reclaimed Asphalt Pavement.
5. State of California, Business and Transportation Agency, Department of Transportation (Caltrans), Standard Specifications, latest 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 2 PRODUCTS**

### **2.1 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.

### **2.2 ASPHALT BINDER**

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

### **2.3 AGGREGATE**

- B. 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.

### **2.4 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.

### **2.5 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.

### **2.6 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 3 EXECUTION

### 3.1 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.

### 3.2 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

### 3.3 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.

### 3.4 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.

### 3.5 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.

### 3.6 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.

### 3.7 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.

3.8 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.

3.9 TRENCH PATCHING

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

3.10 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.

3.11 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.

3.12 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.

3.13 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 33 11 00**

**WATER UTILITIES**

**PART 1 GENERAL**

1.1 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:
  - 1. Water Main Piping.
  - 2. Gate Valves.
  - 3. Couplings.
  - 4. Bolts and Nuts for Underground Piping and Valves.
  - 5. Restrained Joints.
  - 6. Service Saddles.
  - 7. Tapping Sleeves.
  - 8. Corporation Stops.
  - 9. Angle Meter Ball Valves/Curb Stops.
  - 10. Service Piping and Fittings.
  - 11. Service Elbows.
  - 12. Valve boxes.
  - 13. Tracer Wire.

1.2 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.

1.3 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. American Public Works Association (APWA)
  - 1. Uniform Color Code for Marking of Underground Utility Locations.
- B. American Society of Testing and Materials (ASTM)
  - 1. ASTM A193 – Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High Temperature or High Pressure Service and Other Special Purpose Applications



2. ASTM A194 – Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
  3. ASTM A536 – Standard Specification for Ductile Iron Castings
  4. ASTM D2737 – Standard Specification for Polyethylene (PE) Plastic Tubing
  5. ASTM F477 – Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- C. American Water Works Association (AWWA)
1. AWWA C104 – Standard for Cement–Mortar Lining for Ductile-Iron Pipe and Fittings
  2. AWWA C105 – Polyethylene Encasement for Ductile-Iron Pipe Systems
  3. AWWA C110 – Standard for Ductile-Iron and Gray-Iron Fittings
  4. AWWA C111 – Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
  5. AWWA C153 – Standard for Ductile-Iron Compact Fittings for Water Service
  6. AWWA C504 – Standard for Rubber-Seated Butterfly Valves.
  7. AWWA C509 – Resilient-Seated Gate Valves for Water Supply Service
  8. AWWA C550 – Protective Interior Coatings for Valves and Hydrants
  9. AWWA C600 – Installation of Ductile Iron Water Mains and their Appurtenances.
  10. 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):
1. 24 95 Installation of Private Fire Service Mains and Their Appurtenances
  2. 291-01 Fire Flow Testing and Marking of Hydrants
- E. NSF International:
1. 61-02 Drinking Water System Components-Health Effects (Sections 1-9)
- F. American Welding Society (AWS):
1. A5.8 04 Brazing Filler Metal
- G. Foundation for Cross-Connection Control and Hydraulic Research-2005
- H. Copper Development Association’s Copper Tube Handbook-2005

#### 1.4 QUALITY ASSURANCE

- A. Standards: The materials and work performed in this Section shall conform to the applicable standards of:
1. The American National Standards Institute (ANSI).
  2. The American Society for Testing and Materials (ASTM).
  3. American Water Works Association Inc. (AWWA).
  4. The National Sanitation Foundation (NSF).
  5. The American Society of Mechanical Engineers, Boiler and Pressure Vessel Code (ASME).
  6. Plumbing and Drainage Institute (PDI).
  7. Underwriters Laboratories Inc. (UL).
  8. Uniform Plumbing Code (UPC).
  9. National Fire Protection Association (NFPA).
  10. Factory Mutual Research Corporation (FMRC).

- 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. 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:
  - 1. The material shall be the product of a supplier regularly engaged in the manufacturing of pipe and plumbing products.
  - 2. 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:
  - 1. 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.
  - 2. In acceptance or rejection of installed materials, no allowance will be made for lack of skill on the part of installers.

#### 1.5 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, 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:
  - 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.
- D. Manufacturers' Literature and Data (Submit all items as one submittal package for review):
  - 1. Piping.
  - 2. Gaskets.
  - 3. Valves.
  - 4. Service line products.
  - 5. Valve boxes.
  - 6. Joint restraint.

7. Tapping sleeves.
8. Couplings.
9. Disinfection products.
10. Tracing Wire.

- E. Testing Certifications:
1. Hydrostatic Testing.
  2. Certification of Disinfection, including free chlorine residuals, and bacteriological examinations.
- F. Manufacturer's recommendations:
1. 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.

## 1.6 COORDINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

## 1.7 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.

## PART 2 PRODUCTS

### 2.1 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.

## 2.2 WATER MAIN PIPING

- A. PVC Pipe
  - 1. Application: Below Grade Pipe Only.
  - 2. 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.
  - 3. Pipe: C900 PVC ASTM D1784, Cell Classification of 12454.
  - 4. Class: DR14 for all water main piping.
- B. Steel Pipe
  - 1. Application: Below Grade or Above Grade Pipe.
  - 2. The pipe shall be manufactured in strict compliance to ASTM A53, 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.
  - 3. Size: 1/2-inch to 3-inch.
  - 4. Pipe: ASTM A53.
  - 5. Class: Schedule 40.
  - 6. Coating: Section 09 90 00
- C. 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.

## 2.3 GATE VALVES

- A. Size: 2-inch to 12-inch.
- B. City of Sebastopol Standard W-2.1
- C. Resilient Wedge Gate Valves: AWWA C509.
  - 1. Body Material: ductile iron.
  - 2. Working Pressure: 250psig.
  - 3. Seat: Resilient.
  - 4. Stem: Non-rising bronze stem.
  - 5. Operating Nut: 2-inch square; open counterclockwise unless otherwise indicated.
  - 6. Ends: Flanged or mechanical joint end connections.
  - 7. Coating: 12-mil holiday-free epoxy AWWA C550; interior/exterior.
  - 8. Bolting: Paragraph 2.5.
- D. Manufacturers:

1. Mueller Company
2. Clow Eddy - Iowa
3. American Flow Control
4. Substitutions: Section 01 60 00 - Product Requirements.

## 2.4 COUPLINGS

- A. Restrained Coupling
  1. Type: AWWA C219, NSF 61 listed.
  2. Body: Ductile Iron; ASTM A536
  3. Bolts: 316 stainless steel.
  4. Coating: AWWA C550; interior/exterior.
  5. Pressure rating: meet or exceed adjacent piping system rating.
  6. System compatible with connecting pipe; verify connecting pipe O.D.
- B. Restrained Flange Coupling Adaptor
  1. System: restrain plain end of pipe to a flange, conforming to AWWA C110.
  2. Body: Ductile Iron; ASTM A536
  3. Bolts: 316 stainless steel,
  4. Coating: AWWA C550; interior/exterior.
  5. Pressure rating: meet or exceed adjacent piping system rating.
  6. System compatible with connecting pipe; verify connecting pipe O.D.

## 2.5 BOLTS FOR UNDERGROUND PIPING AND VALVES

- A. Bolts: ASTM A307, Grade B heavy hex head.
- B. Nuts: ASTM A563, heavy hex nuts.
- 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.

## 2.6 RESTRAINED JOINTS

- A. Manufacturer:
  1. EBAA Iron - Series 2000PV Megalug.
  2. Romac Industries, Inc. - Romagrip.
  3. 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.

## 2.7 SERVICE SADDLES

City of Sebastopol Standard W-5.4.

- A. Materials: Bronze and stainless steel nylon coated of the double strap type.
- B. Saddle shall be stamped for use with ductile iron pipe.
- C. Manufacturer:
  - 1. Mueller BR2B or BR2S.
  - 2. Romac 202N.
  - 3. Substitutions: Section 01 60 00 - Product Requirements.

2.8 TAPPING SLEEVES

- A. Material: Cast Iron Stainless steel
- B. Sleeve must be compatible with pipe type.
- C. Manufacturers:
  - 1. Dresser: Style 630.
  - 2. Ford: FTSS
  - 3. JMC: 415, 432
  - 4. Mueler: H-615, H-616 or H-667
  - 5. American Flow Control: MJ Split Tapping Sleeve
  - 6. Smith-Blair: 664-665
  - 7. APAC Tapping Sleeve
  - 8. Clow Corp: MJ, F-5093 or F-5205
  - 9. M&H Valve and Fitting Co.: Catalog 52, Style 974
  - 10. U.S. Pipe: Smith Dual Compression Seal Tapping Sleeve.
  - 11. Substitutions: Section 01 60 00 - Product Requirements.

2.9 CORPORATION STOPS

- A. Materials: Bronze no-lead alloy conforming to AWWA C800 and ASTM B62.
- B. Manufacturer:
  - 1. Mueller.
  - 2. Ford.
  - 3. Jones.
  - 4. McDonald.
  - 5. Substitutions: Section 01 60 00 - Product Requirements.

2.10 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.

2.11 SERVICE PIPING AND FITTINGS

- A. Piping Material:
  - 1. Type "K" soft temper copper.
  - 2. Polyethylene ANSI/AWWA C901-02 – Pressure Class 160

- B. Size: To match existing.

## 2.12 SERVICE ELBOW

- A. Materials: Bronze no-lead alloy conforming to AWWA C800 and ASTM B62.
- B. Manufacturer:
  - 1. Ford.
  - 2. Jones
  - 3. McDonald
  - 4. Mueller H 15533.
  - 5. Substitutions: Section 01 60 00 - Product Requirements.

## 2.13 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."

## 2.14 VALVE BOXES

- A. Valve boxes:
  - 1. Manufacturer: Christy Model G5.
  - 2. Substitutions: Section 01 60 00 - Product Requirements.

## 2.15 PIPE SLEEVES

- A. Ductile iron or zinc coated steel.

## 2.16 TRACER WIRE

- A. Manufacturers:
  - 1. Pro-Line
  - 2. Substitutions: Section 01600 - Product Requirements.
- B. Characteristics:
  - 1. Type: THWN
  - 2. Gage: No. 12
  - 3. Materials: Copper conductor, PVC insulation, nylon jacket.

## 2.17 ACCESSORIES

- A. Non-shrink Grout: Specified in Section 03 30 00.

## **PART 3 EXECUTION**

### 3.1 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.

### 3.2 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.

**3.3 BEDDING AND BACKFILL**

- A. 2-inch to 12-inch Pipe
  - 1. Install bedding per plan.
  - 2. Install backfill per plan.

**3.4 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.

**3.5 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.



3.6 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.

3.7 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.

3.8 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.

3.9 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.

3.10 DISINFECTION OF POTABLE WATER PIPING SYSTEM

- A. Flush and disinfect system in accordance with Section 33 13 00.

3.11 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.

3.12 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:
  - 1. AWWA C600 for ductile iron pipe.
  - 2. AWWA C605 for PVC pipe.
  - 3. 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

**SECTION 33 13 00**

**DISINFECTING OF WATER UTILITIES**

**PART 1 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. 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.
- 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 - Project Closeout: 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 and C652 requirements.
- B. Neutralize disinfectant solution and chlorinated water before disposal.
- C. Legally dispose of disinfection solution and chlorinated water off Project site.
- D. Repair damage caused by disinfectant solution and disinfection procedures.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 - Product Requirements {01600 - 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 2 PRODUCTS

#### 2.1 DISINFECTION CHEMICALS

- A. Chlorine Forms: In accordance with AWWA C651 and C652, Section 4.

### PART 3 EXECUTION

#### 3.1 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.

3.2 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.

3.3 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Control: 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

## APPENDIX A

### CITY OF SEBASTOPOL General Guidelines for Construction Activities Erosion and Sediment Control and Minimization of Hazardous Materials Contact with Stormwater

#### General

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.

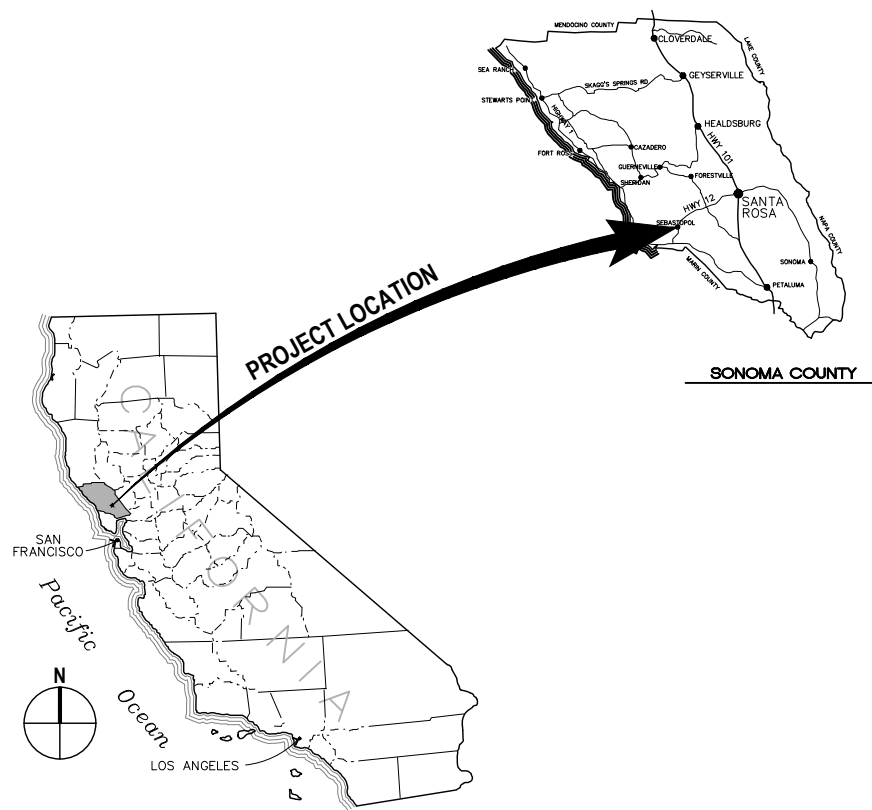
# CITY OF SEBASTOPOL FIRST STREET WATER MAIN RELOCATION CITY CONTRACT NO. 2021-02

SEPTEMBER 2021

**AREA MAP**

**LOCATION MAP**

**APPROVALS**



**CITY OF SEBASTOPOL**  
MARIO LANDEROS, PE, CITY ENGINEER

*Mario Landeros*  
\_\_\_\_\_  
SIGNED

2/15/2022  
\_\_\_\_\_  
DATE

**ENGINEER: GHD INC.**  
HOLLY CINKUTIS, PE

*Holly Cinkutis*  
\_\_\_\_\_  
SIGNED

9/14/2021  
\_\_\_\_\_  
DATE

**SHEET INDEX**

Sheet Number	Sheet No.	Sheet Title
1	G-001	COVER SHEET
2	G-002	GENERAL NOTES
3	C-101	PLAN AND PROFILE 1
4	C-102	PLAN AND PROFILE 2
5	C-501	CIVIL DETAILS 1
6	C-502	CIVIL DETAILS 2
7	P-101	PAVING AND STRIPING

No.	Issue	Checked	Approved	Date	
Author	T. ALLEN	Drafting Check	O. GOODE	Project Manager	M. KENNEDY
Designer	H. CINKUTIS	Design Check	M. KENNEDY	Project Director	M. KENNEDY



Bar is one inch on original size sheet  
0 ————— 1"



Client **CITY OF SEBASTOPOL**  
Project **FIRST STREET WATER MAIN RELOCATION**

Title **COVER SHEET**

Project No. **11228872**

Date

Scale **AS SHOWN**

Agenda Item Number 4

Sheet No. **G-001**

Size **ANSI D**

Sheet 1 of 7



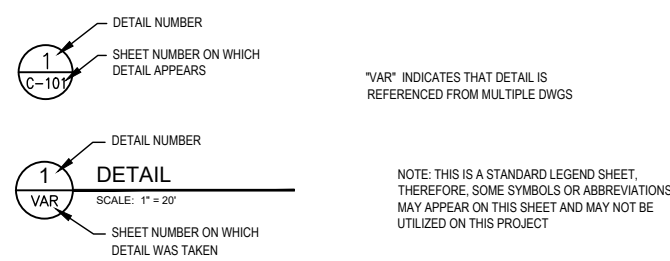
GENERAL NOTES

- ALL WORKMANSHIP, MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE LATEST CITY OF SEBASTOPOL STANDARD PLANS, THE CONSTRUCTION SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, TECHNICAL SPECIFICATIONS FOR THIS PROJECT, THE STATE STANDARD SPECIFICATIONS AND STANDARD PLANS, AND THE CALIFORNIA CODE OF REGULATIONS, TITLE 24, 2010 CALIFORNIA BUILDING CODE (CBC). THE CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING ALL STANDARDS PERTAINING TO THIS PROJECT.
- THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (USA) AT 811 OR 1-800-227-2600 NO LESS THAN 2 WORKING DAYS PRIOR TO ANY EXCAVATION FOR MARKOUTS OF EXISTING UNDERGROUND FACILITIES.
- THE LOCATIONS OF UNDERGROUND UTILITIES AND OTHER OBSTACLES SHOWN ON THE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL POTHOLE AND DETERMINE THE EXACT LOCATION OF ALL POTENTIAL CONFLICTS IN ACCORDANCE WITH U.S.A. LAWS AND THE TECHNICAL SPECIFICATIONS. THE CONTRACTOR IS CAUTIONED THAT THE PLANS MAY NOT INCLUDE ALL EXISTING UTILITIES.
- IF AN UNMARKED UTILITY IS ENCOUNTERED, OR IF UNABLE TO LOCATE A MARKED UTILITY AFTER EXCAVATING TO THE LIMITS SPECIFIED BY U.S.A. LAWS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF THAT UTILITY AND THE ENGINEER.
- ANY CITY OR PRIVATE PROPERTY, INCLUDING LANDSCAPING, IRRIGATION OR OTHER IMPROVEMENTS, WHICH IS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECYCLING OF ALL BITUMINOUS PAVEMENT, CONCRETE, REINFORCEMENT AND SPOILS AS REQUIRED BY THE ENGINEER AND PER THE CITY SPECIFICATIONS.
- THE CONTRACTOR SHALL ONLY REMOVE EXISTING TREES OR SHRUBS AS NOTED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- ALL TRAVELED WALKWAYS IMPACTED BY THE WORK SHALL BE SAFE, USEABLE AND ADA COMPLIANT AT THE END OF EACH WORKDAY OR AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL MAINTAIN TRAFFIC CONTROL AND PEDESTRIAN USE DURING CONSTRUCTION IN ACCORDANCE WITH THE LATEST CA MUTCD. PEDESTRIAN TRAFFIC SHALL ALSO CONFORM TO THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT (ADA) AND SHALL ACCOMMODATE PEDESTRIAN TRAFFIC THROUGH OR AROUND THE WORK ZONES.
- SIGNAGE SHALL BE CONSTRUCTED WITH RETROREFLECTIVE MATERIAL ON A BACKING OF METAL OR FABRIC. FOR SIGNS DIRECTED TO PEDESTRIANS ONLY, CORRUGATED PRINTED SIGNS MAY BE USED. SIGNS SHALL BE REMOVED OR COVERED WHEN NOT REQUIRED.
- THE CONTRACTOR SHALL EXERCISE CAUTION WHEN DIGGING WITHIN THE DRIPLINE OF TREES DESIGNATED TO REMAIN. ROOTS LARGER THAN 2 INCHES SHALL NOT BE CUT WITHOUT PERMISSION FROM THE ENGINEER. IN THE EVENT THAT A ROOT IS LARGER THAN 2 INCHES, SEEK DIRECTION FROM THE ENGINEER. ROOTS LARGER THAN 2 INCHES SHALL NOT BE CUT WITHOUT PERMISSION FROM THE ENGINEER. IN THE EVENT THAT A TREE ROOT LARGER THAN 2 INCHES NEEDS TO BE REMOVED, THE ROOT PRUNING SHALL BE PERFORMED BY A LICENSED ARBORIST APPROVED BY THE ENGINEER. CONTRACTOR SHALL NOT BEGIN EXCAVATION UNTIL ALL EXISTING UTILITIES HAVE BEEN MARKED IN THE FIELD BY THE APPLICABLE ENTITY RESPONSIBLE FOR THAT PARTICULAR UTILITY. THE CONTRACTOR SHALL NOTIFY EACH APPLICABLE ENTITY AT LEAST 48 HOURS BEFORE STARTING WORK.
- ANY DISCREPANCY DISCOVERED BY CONTRACTOR IN THESE PLANS OR ANY FIELD CONDITIONS DISCOVERED BY CONTRACTOR THAT MAY DELAY OR OBSTRUCT THE PROPER COMPLETION OF THE WORK PER THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY UPON DISCOVERY. SAID NOTIFICATION SHALL BE IN WRITING, AND SHALL OCCUR FAR ENOUGH IN ADVANCE OF WORK SO THAT THE CONSTRUCTION SCHEDULE WILL NOT BE AFFECTED SHOULD THE RELOCATION OR MOVING OF AN EXISTING UTILITY BE REQUIRED.
- CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR WORKING CONDITIONS ON THE JOB SITE DURING THE COURSE OF CONSTRUCTION, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY, INCLUDING OUTSIDE OF NORMAL WORKING HOURS: THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO HOLD HARMLESS AND INDEMNIFY AND DEFEND THE CITY, CONSULTANT AND EACH OF THEIR OFFICERS, EMPLOYEES AND AGENTS.
- NO CONSTRUCTION SHALL COMMENCE PRIOR TO PRE-CONSTRUCTION CONFERENCE.
- ALL UNDERGROUND IMPROVEMENTS SHALL BE INSTALLED AND APPROVED BY THE CITY PRIOR TO PAVING.
- ASPHALT RESTORATION AND TRENCH BACKFILL PER CITY OF SEBASTOPOL (CS) STANDARD PLAN DETAILS.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AND FACILITIES DURING CONSTRUCTION.
- ALL DISTANCES SHOWN ON THE DRAWINGS ARE BASED ON HORIZONTAL AND VERTICAL MEASUREMENTS.
- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK, DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

SYMBOLS

	6" CURB & GUTTER		IRR IRRIGATION BOX
	EDGE OF AC PAVEMENT		GM GAS METER
	EDGE OF GRAVEL ROAD		GV GAS VALVE
	6" VERTICAL CURB		WM WATER METER
	OVERHEAD WIRES		WV WATER VALVE
	OVERHEAD ELECTRIC WIRES		WAV WASTE ARV VAULT
	OVERHEAD TELEPHONE WIRES		FH FIRE HYDRANT
	UNDERGROUND ELECTRIC LINE		SSM SANITARY SEWER MANHOLE
	ELECTRIC LINE		SSCO SANITARY SEWER CLEANOUT
	STREET LIGHT CONDUIT		SDM STORM DRAIN MANHOLE
	GAS LINE		CB CATCH BASIN
	SANITARY SEWER LINE		CI CURB INLET
	SANITARY SEWER FORCE MAIN		DI DRAINAGE INLET
	STORM DRAIN LINE		SDCO STORM DRAIN CLEANOUT
	SEAWATER SUPPLY		EVC ELECTRIC VAULT COVER
	SEAWATER RETURN		EPB ELECTRIC PULLBOX
	TELEPHONE LINE		TPB TELEVISION PULLBOX
	TELECOMMUNICATIONS		TPB TELEPHONE PULLBOX
	LIGHTING CONDUIT		HVE HIGH VOLTAGE ELECTRIC
	TELEVISION LINE		UEV UNDERGROUND ELECTRIC VAULT
	WATER LINE		TM TELEPHONE MANHOLE
	WATER LINE (EXISTING ABANDONED)		GUY GUY WIRE & ANCHOR
	FIRE WATER MAIN		UP UTILITY POLE (AS NOTED)
	IRRIGATION LINE		SI SIGN (AS NOTED)
	TRENCH DRAIN		SCP SURVEY CONTROL POINT
	WOOD FENCE		CAV COMBINATION AIR / VACUUM RELEASE VALVE
	FLOW LINE		
	TOP OF BANK		
	CONTOUR ELEVATION LINE		
	CENTER LINE		
	EXISTING PROPERTY LINE		
	MONUMENT LINE		
	SPOT ELEVATION		

DETAIL REFERENCES



ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AVE	AVENUE
AWWA	AMERICAN WATER WORKS ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
BFP	BACK FLOW PREVENTER
CI	CAST IRON
CONC	CONCRETE
(E), EX	EXISTING
EG	EXISTING GRADE
ELEC	ELECTRIC, OR ELECTRICAL
FH	FIRE HYDRANT
FL	FLOW LINE
FT	FOOT, OR FEET
G	GAS LINE
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HORZ	HORIZONTAL
LAT	LATERAL
LF	LINEAR FEET
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
(N)	NEW
N	NORTH
NTS	NOT TO SCALE
OH	OVERHEAD ELECTRICAL
PVC	POLYVINYL CHLORIDE PLASTIC PIPE
RC	RELATIVE COMPACTION
RCP	REINFORCED CONCRETE PIPE
RW	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SDCB	STORM DRAIN CATCH BASIN
SHT	SHEET
SIM	SIMILAR
SO	SOUTH
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEAN OUT
SSMH	SANITARY SEWER MANHOLE
STA	STATION
STD	STANDARD
TC	TOP OF CURB
TON	TOP OF NUT
TYP	TYPICAL
VERT	VERTICAL
W	WATER
WM	WATER METER
°	DEGREE
Ø	DIAMETER
'	FEET
"	INCHES
#	NUMBER
±	PLUS OR MINUS

NOTE: CONTACT ENGINEER FOR ABBREVIATIONS NOT LISTED.

WATER NOTES

- ONLY AUTHORIZED CITY PERSONNEL SHALL OPERATE VALVES ON THE EXISTING WATER SYSTEM. SHUTDOWNS WILL REQUIRE A 48 HOUR NOTICE SENT TO AFFECTED CUSTOMERS AND A COPY OF THE NOTICE SUBMITTED TO PUBLIC WORKS.
- RESTRAINED MECHANICAL JOINTS SHALL BE USED ON ALL TEES, FITTINGS AND ASSOCIATED GATE AND BUTTERFLY VALVES UNLESS OTHERWISE SPECIFIED, APPROVED OR DIRECTED BY THE ENGINEER.
- SANITARY SEWER LATERALS ARE NOT SHOWN BUT DO EXIST. THEIR LOCATIONS ARE NOT KNOWN BUT THEIR PRESENCE SHALL BE ANTICIPATED BY THE CONTRACTOR.

No.	Issue	Checked	Approved	Date
Author	T. ALLEN	Drafting Check	O. GOODE	Project Manager
Designer	H. CINKUTIS	Design Check	H. CINKUTIS	Project Director
			M. KENNEDY	



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Client **CITY OF SEBASTOPOL**  
Project **FIRST STREET WATER MAIN RELOCATION**

Title **GENERAL NOTES**

Project No. **11228872**

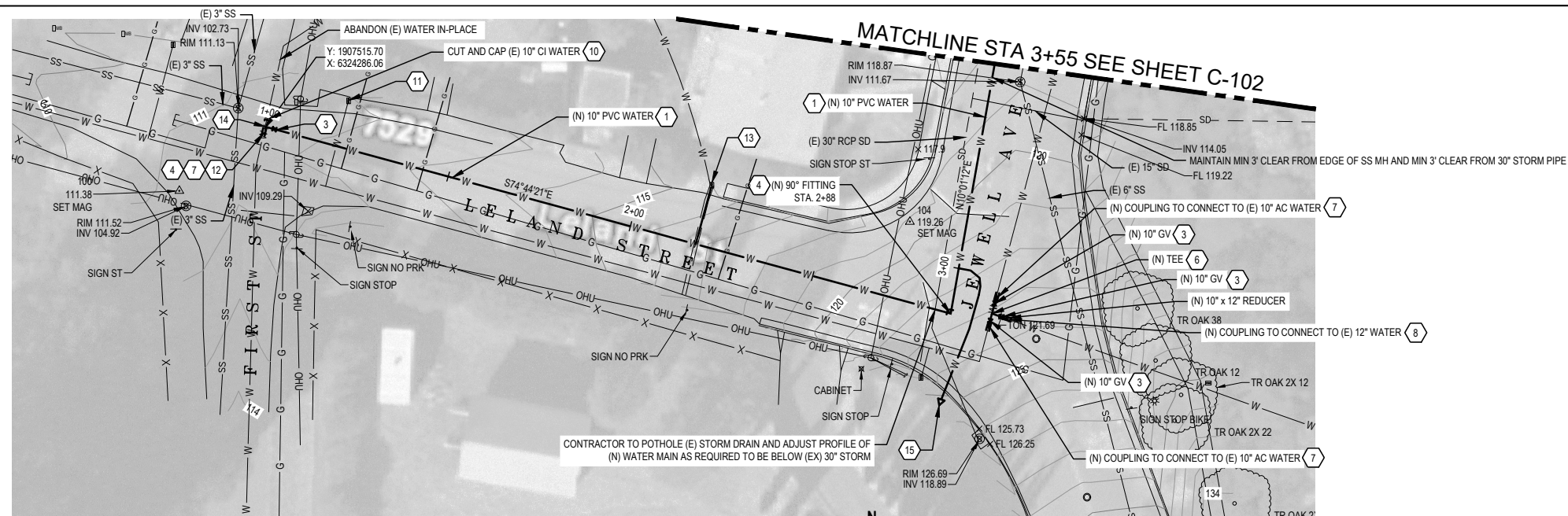
Date

Scale **AS SHOWN**

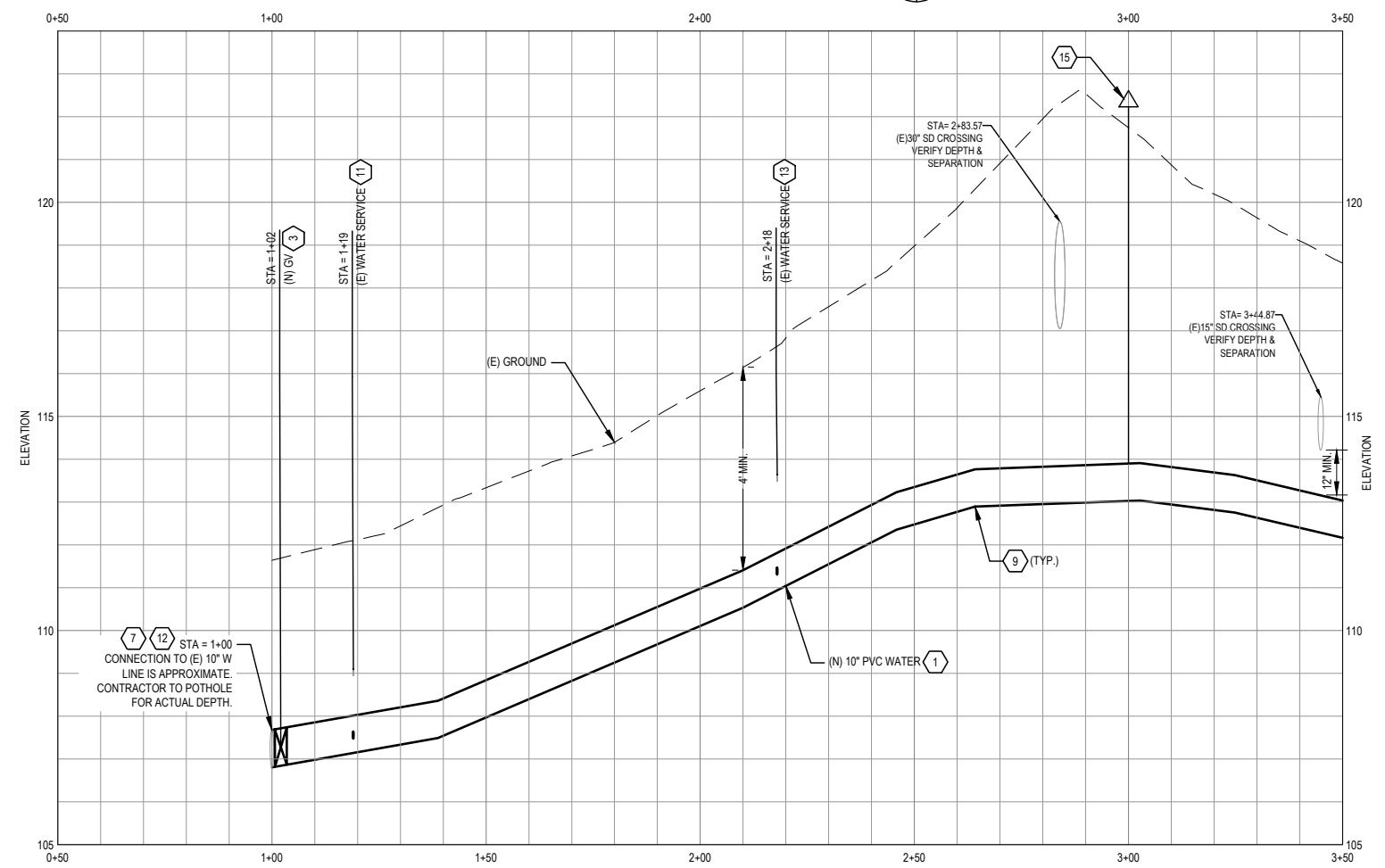
Agenda Item Number 4

Sheet No. **G-002**

Sheet 2 of 7



**PLAN VIEW**  
 0 10' 20' 40'  
 N



**PROFILE VIEW**  
 0 10' 20' 40' HORIZONTAL  
 0 1' 2' 4' VERTICAL

**SHEET GENERAL NOTES**  
 Agenda Item Number 4

- LOCATION OF EXISTING UTILITIES AND STRUCTURES ARE FROM INFORMATION AVAILABLE AT THE TIME OF DESIGN. EXACT LOCATION AND COMPLETENESS ARE NOT GUARANTEED. CONTRACTOR SHALL NOTIFY THE OWNER AND UNDERGROUND SERVICES ALERT AT 811 OR (800) 277-2600 A MINIMUM OF 72 HOURS PRIOR TO ANY EXCAVATION. CONTRACTOR TO VERIFY ACTUAL SITE CONDITIONS PRIOR TO PERFORMING WORK.
- THE CONTRACTOR TO VERIFY (E) WATER MAIN CONFIGURATIONS, SIZES, AND TYPES AND PROVIDE NECESSARY FITTINGS AS REQUIRED TO CONNECT TO (E) WATER MAINS. CONTRACTOR MAY PROPOSE ALTERNATIVE VALVE AND FITTING CONFIGURATIONS.
- NOT USED.
- ALL CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO STAGING AND STOCKPILING SHALL OCCUR WITHIN PUBLIC RIGHT OF WAY UNLESS OTHERWISE APPROVED BY THE CITY OF SEBASTOPOL AS DESCRIBED IN THE SPECIFICATIONS.
- THE CONTRACTOR SHALL KEEP ONE LANE OF TRAFFIC OPEN THROUGH THE WORK AREA AT ALL TIMES, WHERE POSSIBLE. IN LOCATIONS THIS IS NOT POSSIBLE, CONTRACTOR TO HAVE STEEL PLATES READILY AVAILABLE TO ADEQUATELY COVER TRENCH.
- EXISTING SERVICE LINE LOCATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY ACTUAL LOCATION OF SERVICE LINE CONNECTIONS.
- INSTALL NEW WATER MAIN IN ACCORDANCE WITH SEPARATION REQUIREMENTS SHOWN ON DETAIL 3 AND DETAIL 4 ON SHEET C-502.

**SHEET KEYNOTES**

- (N) 10" PVC PIPE 1  
C-501
- NOT USED. 2  
C-501
- (N) 10-INCH GATE VALVE 3  
C-501
- (N) 10-INCH 90° ELBOW (HORIZONTAL) 4  
C-501
- (N) 10-INCH 45° ELBOW (HORIZONTAL) 5  
C-501
- (N) 10-INCH TEE 6  
C-501
- CONNECT TO (E) 10" WATER LINE 7  
C-501
- CONNECT TO (E) 12" WATER LINE 8  
C-501
- PIPE DEFLECTION PER MANUFACTURER'S RECOMMENDATIONS OR USE FITTINGS AS REQUIRED 9  
C-501
- CUT AND CAP (E) W 10  
C-501
- (E) WATER SERVICE TO REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL VERIFY DEPTH IN FIELD. 11  
C-501
- CUT AND CAP 24 HOURS PRIOR TO ANY WATER WORK IN STREET. PROVIDE HARNESS RESTRAINT SIMILAR TO CITY OF SANTA ROSA STD. 851 MINIMUM OF 24 HOURS PRIOR TO TIE-IN. 12  
C-501
- (E) WATER SERVICE TO BE ABANDONED. INSTALL AND CONNECT (N) SERVICES TO (N) MAIN AS INDICATED. 13  
C-502
- UPON SATISFACTORY COMPLETION OF TESTING OF NEW WATER SYSTEM, AND AFTER ALL WATER SERVICES HAVE BEEN TRANSFERRED, REMOVE EXISTING WATER MAIN AS SHOWN FOR INSTALLATION OF NEW WATER COMPONENTS AS NEEDED. TO MAKE HORIZONTAL AND VERTICAL ALIGNMENT ADJUSTMENTS REQUIRED FOR CONNECTION TO EXISTING WATER SYSTEM. ALL WORK SHALL BE DONE AS A SINGLE OPERATION UNDER INSPECTION BY THE CITY. 14  
C-502
- PROVIDE COMBINATION AIR/VACUUM RELEASE VALVE PER CITY OF SANTA ROSA STANDARD DETAIL 883. CONFIRM EXACT LOCATION IN FIELD WITH CITY. 15  
C-502

**SURVEY NOTES**

**BENCHMARK:**  
 UGS BASK DISK DESIGNATION U 1396  
 PID JT9460  
 LOCATED AT THE NORTHEAST CORNER OF THE INTERSECTION OF BODEGA AVE & PLEASANT HILL ROAD IN THE TOWN OF SEBASTOPOL  
 ELEVATION NAVD '88 = 223.11 USFT

**BASIS OF BEARING AND COORDINATE SYSTEM:**  
 CALIFORNIA COORDINATE SYSTEM '83 ZONE 2, BASED ON GPS OBSERVATION UTILIZING THE CSDS VSN NETWORK.

No	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	1907498.7400	6324263.1480	111.3800	SET MAG
101	1907908.4920	6324507.0400	101.2800	SET MAG TBC
102	1908230.8730	6324564.1290	98.1450	SET MAG LIP
103	1907728.7350	6324554.9290	112.0990	SET MAG LIP
104	1907490.5790	6324456.4980	119.2640	SET MAG
131	1907780.0675	6324632.6934	113.1100	SET MAG
132	1907805.4325	6324589.8694	112.5250	SET 60D
1006	1907832.5240	6324509.4010	105.9690	FND MAG NAIL

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Author	T. ALLEN	Drafting Check	O. GOODE	Project Manager	M. KENNEDY
Designer	H. CINKUTIS	Design Check	H. CINKUTIS	Project Director	M. KENNEDY



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Client	CITY OF SEBASTOPOL
Project	FIRST STREET WATER MAIN RELOCATION
Project No.	11228872
Date	
Scale	AS SHOWN

Title	PLAN AND PROFILE 1
Size	ANSI D
Agenda Item Number 4	C-101
Sheet No.	3 of 7

**SHEET GENERAL NOTES**  
**Agenda Item Number 4**

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3. ALL NEW JOINTS AND FITTINGS SHALL BE MECHANICALLY RESTRAINED. THRUST BLOCKS ARE NOT PERMITTED.
4. ALL CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO STAGING AND STOCKPILING SHALL OCCUR WITHIN PUBLIC RIGHT OF WAY UNLESS OTHERWISE APPROVED BY THE CITY OF SEBASTOPOL AS DESCRIBED IN THE SPECIFICATIONS.
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**SHEET KEYNOTES**

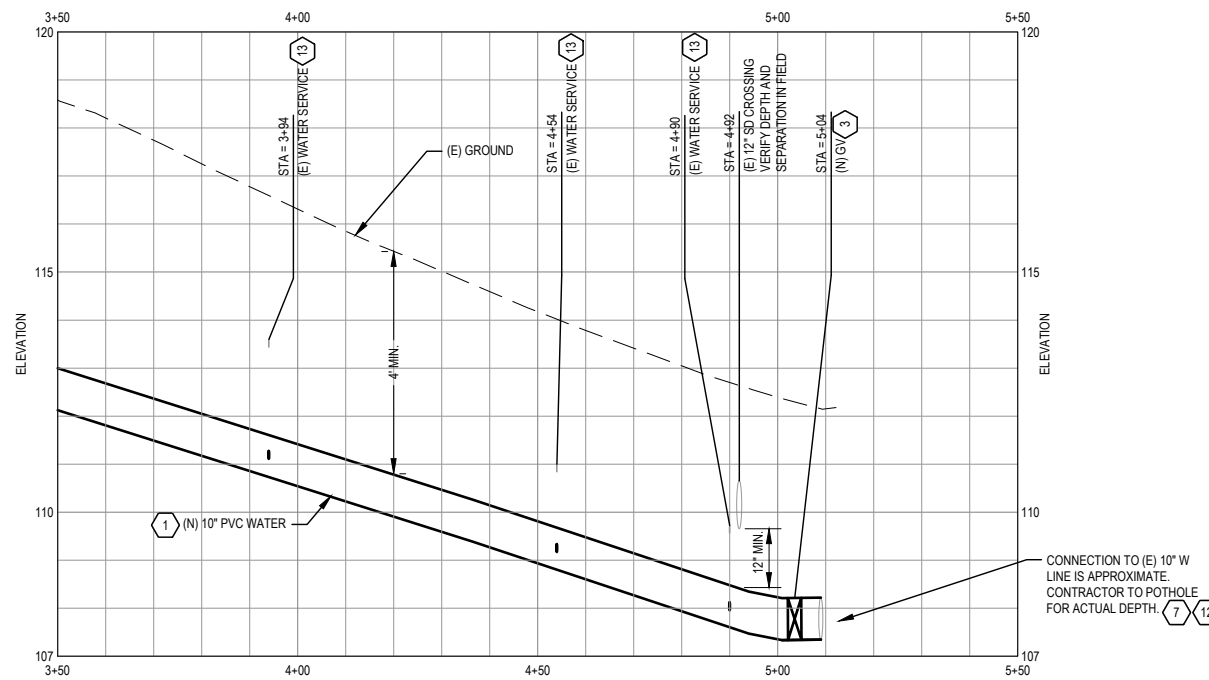
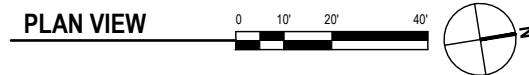
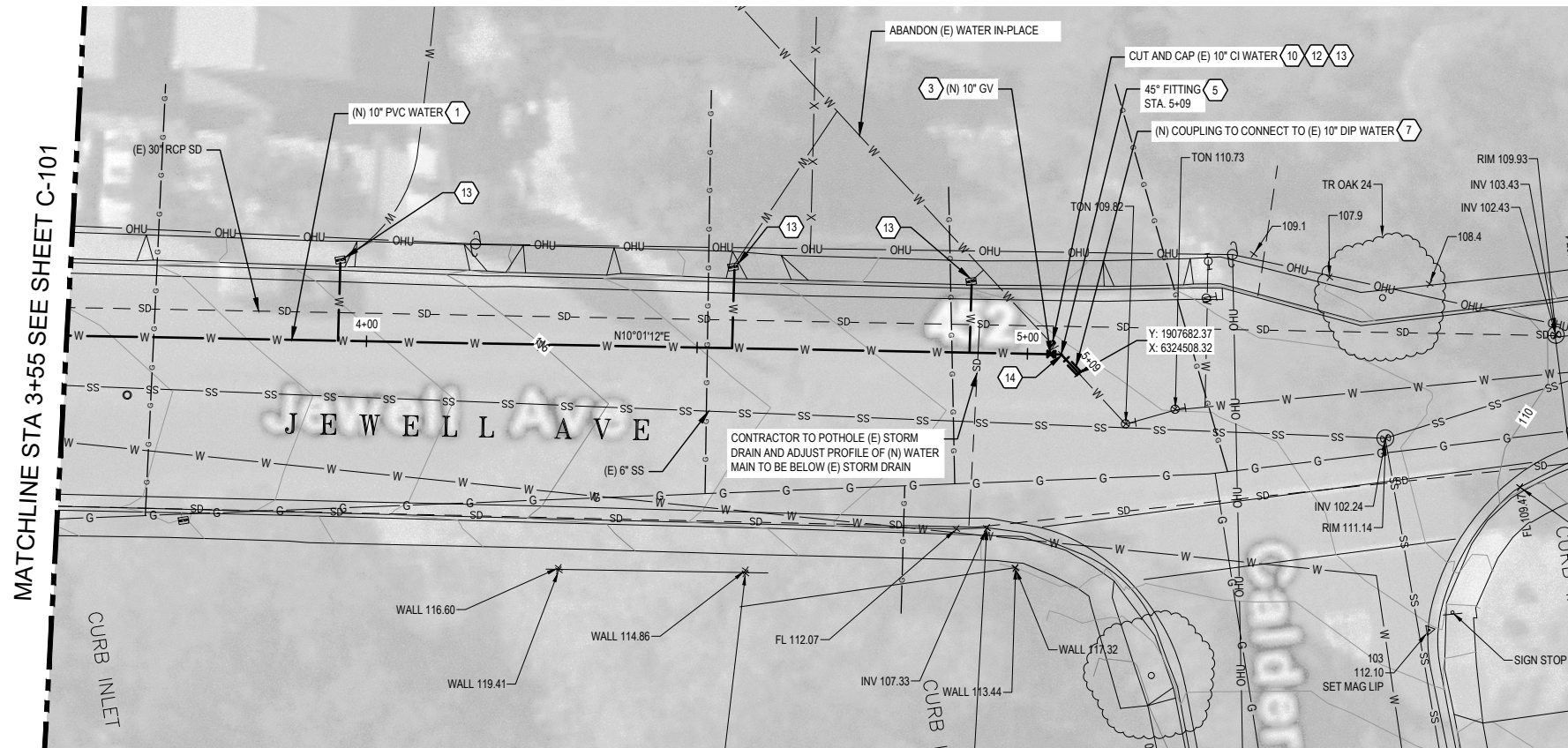
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2. NOT USED
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Client **CITY OF SEBASTOPOL**  
Project **FIRST STREET WATER MAIN RELOCATION**  
Project No. **11228872** Date \_\_\_\_\_ Scale **AS SHOWN**

Title **PLAN AND PROFILE 2** Size **ANSI D**  
**Agenda Item Number 4** Sheet No. **C-102** Sheet **4 of 7**

- ALL MATERIAL, WORKMANSHIP, AND CONSTRUCTION DETAILS SHALL CONFORM TO THE CITY OF SEBASTOPOL, "STANDARD SPECIFICATIONS," INCLUDING ALL ADDENDA, STANDARD PLAN REVISIONS AND SPECIAL PROVISIONS.
- START EXCAVATION BY EXPOSING END OF EXISTING MAIN TO DETERMINE ITS LINE AND GRADE. START NEW MAIN 8 - 10 FEET FROM, AND ON SAME LINE AND GRADE AS EXISTING MAIN. PIPE LAYING SHALL THEN BE ADJUSTED SO THE DEPTH OF NEW MAIN CONFORMS TO NOTE #3.
- STANDARD DEPTH OF COVER FROM FINISHED GRADE SHALL BE: 48" FOR ALL SIZE MAINS. 4" AND 10" MAINS MUST BE SPECIFICALLY APPROVED BY THE CITY ENGINEER. 4" THROUGH 16" MAIN LINE VALVES SHALL BE RESILIENT SEAT GATE. 16" AND LARGER MAINLINE VALVES SHALL BE BUTTERFLY VALVES. BLOW OFF VALVES SHALL BE 2" OR 3" BALL VALVES WITH ROTATION STOPS. THE MINIMUM DEPTH OF COVER FOR ALL WATER MAIN CONSTRUCTION IS 32".
- NO. 12 INSULATED COPPER WIRE SHALL BE LAID ON TOP OF AND ALONG ENTIRE LENGTH OF ALL MAINS AND SHALL BE EXTENDED TO THE SURFACE AT ALL VALVE LOCATIONS, BLOWOFFS AND METER BOXES SUFFICIENT FOR LOCATOR EQUIPMENT TO BE ATTACHED. FASTEN THE WIRE TO THE TOP OF THE PIPE, SO AS NOT TO BE DISPLACED BY BACKFILLING PROCEDURE (ONE METHOD OF ACCOMPLISHING THIS IS TO ATTYX THE WIRE TO THE TOP OF THE PIPE WITH DUCT TAPE AT APPROXIMATELY 10 FEET INTERVALS).
- MAINS TO BE CONSTRUCTED WITHIN 10' OF SEWER PIPE REQUIRE SPECIAL INSTALLATION AND DESIGN MUST BE SPECIFICALLY APPROVED BY THE CITY ENGINEER.
- ALL TRENCHING, BACKFILL AND RESURFACING REQUIRED FOR INSTALLATION OF WATER SYSTEM FACILITIES SHALL BE PER CITY STANDARD S-1.1 AND S-1.2.
- ONLY CITY PERSONNEL SHALL OPERATE VALVES ON EXISTING WATER MAINS OR WATER SERVICES.
- SERVICE LATERALS OTHER THAN THOSE SHOWN OR NOTED ON THE PLANS SHALL NOT BE INSTALLED PRIOR TO OBTAINING CITY APPROVAL.
- UNLESS OTHERWISE SHOWN ON THE PLANS, 3/4" WATER SERVICE LATERALS FOR SINGLE METER INSTALLATIONS AND 1" WATER SERVICE LATERALS FOR DOUBLE METER INSTALLATIONS SHALL BE INSTALLED IN RESIDENTIAL DEVELOPMENTS.
- WATER AND SEWER SERVICE LATERALS SHALL BE SEPARATED HORIZONTALLY BY A MINIMUM OF 5 FEET.
- AT THE LOCATION OF EACH WATER SERVICE LATERAL, THE LETTER "W" SHALL BE INSCRIBED INTO THE FACE OF THE CURB. THE LETTER "M" SHALL BE 4" HIGH AND COMPLETELY LEGIBLE.
- ALL COPPER WATER SERVICE TUBING SHALL BE IN CONFORMANCE WITH THE LATEST ANSWA STANDARDS AS DESCRIBED IN ANS/AWWA C900 OR THE LATEST REVISION, AND WITH ASTM B88, AND SHALL BE TYPE "K" SOFT TEMPER TUBING FOR 3/4" AND 1" TUBING AND TYPE "K" HARD TEMPER FOR 1-1/2" AND 2" TUBING.

NOTES CONTINUE ON STD. W-1.2

	<b>WATER MAIN CONSTRUCTION NOTES</b>	STD. NO. <b>W-11</b>
	SCALE: NONE DRAWN: MGA   CHK: SAL   APPVD: PHK   DATE: JULY 1998	

**1 WATER MAIN CONSTRUCTION NOTES**  
NTS

- ALL METER BOXES, VAULTS AND PITS SHALL BE BEDDED ON 3" MINIMUM THICK, 3/4" DRAIN ROCK, AB-2, OR OTHER CLEAN MATERIAL WITH TYPICAL SAND EQUIVALENT OF 20 MINIMUM, UNCONTAMINATED BY NATIVE SOIL, AGAINST COMPACTED OR UNDISTURBED BASE. THE GRAVEL BED SHALL EXTEND TO A 4" MINIMUM BEYOND ALL SIDES OF THE METER BOX. BOX SHALL BE SET FLUSH WITH TOP OF CURB, SIDEWALK OR GROUND, WHICHEVER IS APPLICABLE. LOT NUMBERS MUST BE NOTED ON TOP SIDE OF METER BOX WITH A PERMANENT MARKING PEN.
- METER BOXES SHALL BE LOCATED OUT OF TRAFFIC LOADING AREAS WHENEVER POSSIBLE. METER BOXES LOCATED IN TRAFFIC LOADING AREAS SHALL BE FITTED WITH TRAFFIC LIDS.
- METER BOXES AND VAULTS SHALL BE SET SO THAT THE READING LIDS ARE ALIGNED OVER THE METER REGISTERS AS CLOSELY AS POSSIBLE.
- UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER, THE ON-SITE WATER LINE SHALL BE THE SAME SIZE AS THE WATER METER.
- FOR SERVICES LARGER THAN 1", IF EITHER THE WATER SERVICE LATERAL OR THE ON-SITE BUILDING LINE IS ALREADY EXISTING WITHIN THE TOLERANCES SPECIFIED ON THE STANDARD PLAN, THE LAST ONE INSTALLED SHALL BE ON THE SAME LINE AND GRADE AS THE EXISTING ONE.
- ITEMS SPECIFIED ON THE STANDARD PLANS, OR THE ENGINEER'S APPROVED LIST, ARE APPROVED FOR USE BY THE CITY ENGINEER. ALL OTHERS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
- METER MANIFOLDS MUST BE DETAILED AND APPROVED BY THE CITY ENGINEER. IN GENERAL, MANIFOLDS WHERE ALL FITTINGS ARE 2" OR LESS, SHALL BE CONSTRUCTED FROM THREADED BRASS PIPES AND FITTINGS FROM THE END OF THE SERVICE LATERAL TO THE METER CONNECTION. NO PLASTIC PIPE SHALL BE USED IN CONSTRUCTING MANIFOLDS OF ANY SIZE. NO MORE THAN SIX METERS MAY BE MANIFOLDED OFF A SINGLE WATER SERVICE LATERAL, WITH NO MORE THAN 3 ON EITHER SIDE OF THE SERVICE.
- GASKETS FOR FLANGE FITTINGS SHALL CONFORM TO ANWA STD. C115.
- TO ABANDON A WATER SERVICE, EXPOSE AND TURN OFF CORPORATION STOP, THEN SEVER THE LATERAL CONNECTION.
- THERE SHALL BE NO UNMETERED CONNECTIONS TO THE CITY OF SEBASTOPOL WATER SYSTEM, INCLUDING CONNECTIONS BYPASSING METER FOR TESTING ON-SITE PLUMBING OR FOR OBTAINING CONSTRUCTION WATER. PRESSURE TESTING AGAINST VALVES WILL NOT BE ALLOWED. WHEN A SUBDIVISION WATER MAIN HAS BEEN ACCEPTED AND TIED IN, THE INDIVIDUAL CURB STOPS WILL BE LOCKED OFF WITH CABLE TIES. CUTTING OFF OR TAMPERING WITH THE CABLE TIES WILL CONSTITUTE A STRAIGHT TIE-IN CONNECTION. SUCH CONNECTIONS WILL BE SEVERED BY THE CITY AND WILL RESULT IN PENALTIES INCLUDING PAYMENT OF FINES AND ESTIMATED WATER USAGE FEES.
- UPON APPLICATION, THE CONTRACTOR SHALL INSTALL A 2" TEMPORARY CHECK VALVE ON THE END OF THE EXISTING MAIN FOR CONSTRUCTION WATER (SEE STANDARD), OR AT THE OPTION OF THE CITY ENGINEER, THE CONTRACTOR MAY INSTALL A FIRE HYDRANT METER.

NOTES CONTINUE ON STD. W-1.3

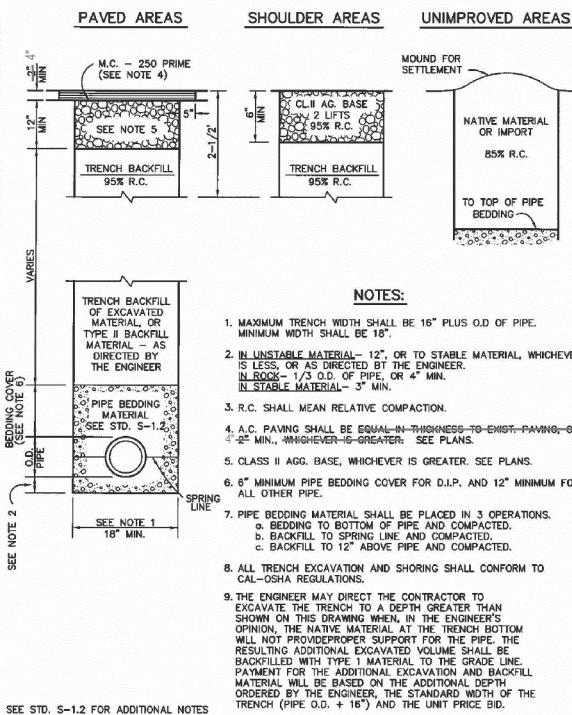
	<b>WATER MAIN CONSTRUCTION NOTES (CONTINUED)</b>	STD. NO. <b>W-12</b>
	SCALE: NONE DRAWN: MGA   CHK: SAL   APPVD: PHK   DATE: JULY 1998	

**2 WATER MAIN CONSTRUCTION NOTES**  
NTS

- BEFORE COMBUSTIBLE MATERIALS MAY BE STORED OR CONSTRUCTED ON SITE, THE FIRE DEPARTMENT MUST APPROVE FIRE FLOW AND ACCESS. BEFORE A FIRE HYDRANT MAY BE PLACED IN SERVICE, A HIGH VELOCITY FLUSHING OF THE HYDRANT LATERAL SHALL BE WITNESSED AND APPROVED BY CITY PERSONNEL. HIGH VELOCITY FLUSHING SHALL CONSIST OF REMOVING THE HYDRANT AND REPLACING IT WITH A SUITABLE ELBOW AND DIFFUSER. UNDER CITY SUPERVISION, THE HYDRANT LATERAL IS FLUSHED UNTIL CITY PERSONNEL ARE SATISFIED THAT THE LINES ARE CLEAR OF DEBRIS.
- UPON COMPLETION OF CONSTRUCTION, FINAL CONNECTION WILL BE MADE BY THE CONTRACTOR AT THE DEVELOPER'S EXPENSE UNDER INSPECTION BY A CITY REPRESENTATIVE, UNLESS OTHERWISE SPECIFIED ON THE PLANS.
- WHEN A CONNECTION IS REQUIRED TO AN EXISTING WATER MAIN, THE CONTRACTOR SHALL PROVIDE ALL EXCAVATION, SHORING, BACKFILL AND TRENCH RESURFACING PER CITY STANDARD S-1.1. WHERE THE CONNECTION IS TO BE A "HOT TAP" THE CONTRACTOR SHALL PROVIDE AND INSTALL THE TAPPING VALVE AND SLEEVE, AND ANY OTHER HARDWARE REQUIRED AND WILL MAKE THE TAP. NO HOT TAP SHALL BE MADE WITHIN 4 FEET OF A JOINT (MEASURED FROM JOINT TO CENTERLINE OF INTERSECTING PIPE). THE JOINT SHALL BE REMOVED, AND THE PROPOSED HOT TAP SHALL BE REPLACED WITH A "CUT-IN" TEE. WHEN A "CUT-IN" TEE AND VALVE(S) ASSEMBLY IS REQUIRED ON THE PLANS, THE CONTRACTOR SHALL PROVIDE AND INSTALL THE ENTIRE ASSEMBLY (INCLUDING VALVES), AND ANY OTHER HARDWARE NECESSARY UNDER CITY INSPECTION, AND SHALL PROVIDE ALL OTHER WORK AND MATERIALS NECESSARY TO COMPLETE THE INSTALLATION TO CITY STANDARDS.
- THE CONTRACTOR SHALL COORDINATE ALL WATER MAIN CONNECTION WORK WITH THE CITY OF SEBASTOPOL PUBLIC WORKS DEPT. AT (707) 823-5331 A MINIMUM OF 72 HOURS PRIOR TO COMMENCING WORK IN ACCORDANCE WITH THE CITY POLICY.
- AFTER A STREET HAS BEEN OVERLAID, ALL WATER VALVE BOXES WILL BE MARKED IN WHITE PAINT BEFORE THE CLOSE OF THAT WORK DAY.
- WITHIN 48 HOURS OF PAVING, ALL WATER VALVE BOXES WILL BE BROUGHT TO GRADE AND INSPECTED.

	<b>WATER MAIN CONSTRUCTION NOTES (CONTINUED)</b>	STD. NO. <b>W-13</b>
	SCALE: NONE DRAWN: MGA   CHK: SAL   APPVD: PHK   DATE: JULY 1998	

**3 WATER MAIN CONSTRUCTION NOTES**  
NTS



	<b>STANDARD SANITARY SEWER TRENCH DETAIL</b>	STD. NO. <b>S-11</b>
	SCALE: NONE DRAWN: MGA   CHK: SAL   APPVD: PHK   DATE: JULY 1998	

**4 UTILITY TRENCH STANDARD DETAIL**  
NTS

**MATERIAL SPECIFICATIONS:**

DRAIN ROCK SHALL BE EITHER OF THE NOMINAL SIZES DESIGNATED AS 1-1/2" BY 3/4" OR 2-1/2" BY 1-1/2".

PIPE BEDDING AND TRENCH BACKFILL MATERIAL SHALL BE A WELL GRADED AGGREGATE MATERIAL AND SHALL HAVE A MINIMUM SAND EQUIVALENT VALUE OF 30 AND SHALL CONFORM TO THE FOLLOWING GRADINGS.

	PERCENT PASSING		
	3"	1"	3/4"
PIPE BEDDING	100	95-100	55-100
TRENCH BACKFILL	100	40-100	

AGGREGATE BASE SHALL BE CLASS 2, 1-1/2" MAX. OR 3/4" MAX CONFORMING TO THE PROVISIONS OF SECTION 26 OF THE STATE STANDARD SPECIFICATIONS.

NATIVE MATERIAL SHALL NOT CONTAIN ROCKS LARGER THAN 3".

COMPACTION REQUIREMENTS: (AS SHOWN ON STD. S-1.1 AND BY THE FOLLOWING MODIFICATIONS).

DRAIN ROCK SHALL BE CONSOLIDATED WITH A SURFACE VIBRATOR.

PIPE BEDDING MATERIAL USED TO GRADE THE TRENCH SHALL BE CONSOLIDATED WITH A SURFACE VIBRATOR WHEN IT IS PLACED OVER DRAIN ROCK OR WHEN DEPTH IS GREATER THAN 12".

PIPE BEDDING MATERIAL SHALL EITHER BE HAND TAMPED UNDER AND AT THE SIDES OF THE PIPE IN LIFTS NOT GREATER THAN 6" OR SHAPED AND COMPACTED PRIOR TO PIPE INSTALLATION.

GENERAL: THE COMPACTION REQUIREMENTS SHALL BE ACHIEVED UTILIZING METHODS AND EQUIPMENT APPROVED BY THE CITY. ANY METHOD OF COMPACTION WHICH FAILS TO UNIFORMLY ACHIEVE THE REQUIRED LEVELS OF COMPACTION THROUGHOUT THE LENGTH AND DEPTH OF TRENCHES SHALL BE DISCONTINUED. COMPACTION METHODS AND EQUIPMENT SHALL BE SUCH AS NOT TO DAMAGE THE INSTALLED PIPE, EXCEED ITS LOADING CAPACITY, OR DISTURB ITS ALIGNMENT, FLOODING, PONDING, OR THE USE OF DROP HAMMER TYPE COMPACTION EQUIPMENT WILL NOT BE ALLOWED.

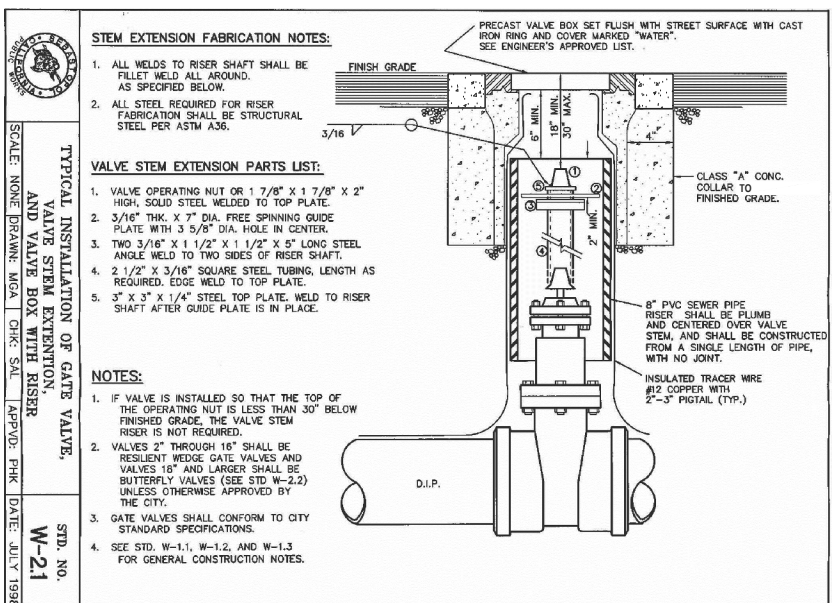
MECHANICAL COMPACTION: TRENCH BACKFILL SHALL BE PLACED IN UNIFORM, HORIZONTAL LAYERS NOT EXCEEDING EIGHT (8) INCHES IN THICKNESS BEFORE COMPACTION. EACH LAYER SHALL BE COMPACTED, USING MECHANICAL MEANS, TO THE SPECIFIED DENSITY SHOWN ON THE PLANS.

THE CONTRACTOR MAY, AT HIS SOLE OPTION AND AT HIS SOLE EXPENSE, CONSTRUCT A TEST TRENCH SECTION WHICH DEMONSTRATES METHODS, EQUIPMENT, OR MATERIALS WHICH WILL RELIABLY ACHIEVE THE REQUIRED COMPACTION IN LIFTS GREATER THAN 8 INCHES. AT ITS SOLE DISCRETION, THE CITY MAY INCREASE THE MAXIMUM ALLOWABLE LIFT THICKNESS PERMITTED BASED UPON THE RESULTS DEMONSTRATED BY THE TEST TRENCH SECTION. SHOULD SUBSEQUENT TESTING DEMONSTRATE THAT THE REQUIRED COMPACTION IS NOT BEING RELIABLY ACHIEVED, THE CITY MAY, AT ITS SOLE DISCRETION, REDUCE THE MAXIMUM LIFT THICKNESS TO ITS ORIGINAL VALUE OF 8 INCHES.

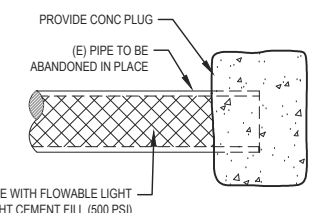
JETTING: JETTING IS NOT ALLOWED.

	<b>STANDARD SANITARY SEWER TRENCH DETAIL (CONTINUED)</b>	STD. NO. <b>S-12</b>
	SCALE: NONE DRAWN: MGA   CHK: SAL   APPVD: PHK   DATE: JULY 1998	

**5 UTILITY TRENCH STANDARD DETAIL**  
NTS

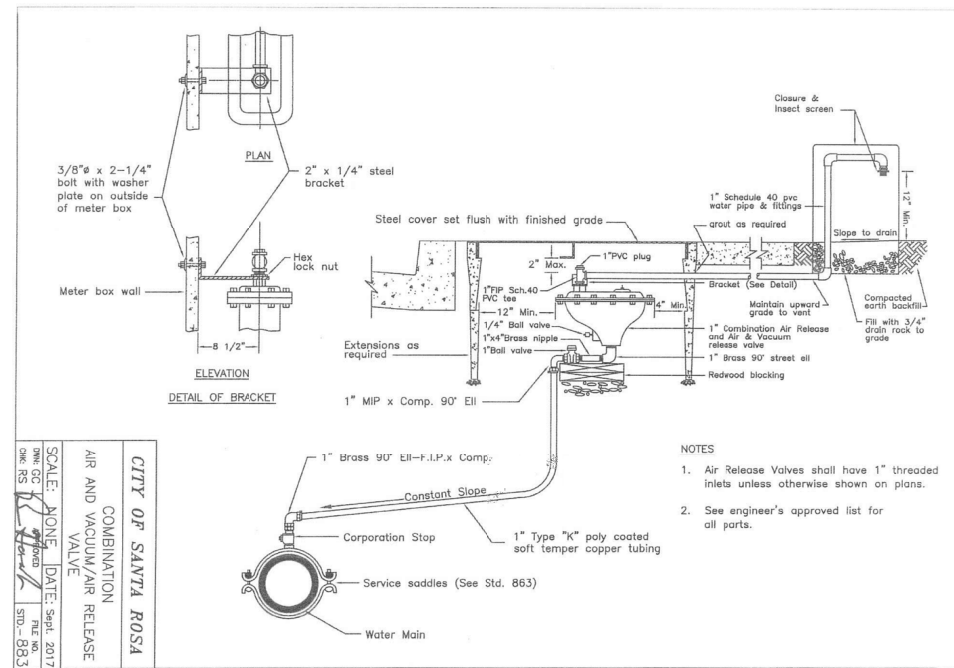


**6 GATE VALVE STANDARD DETAIL**  
NTS

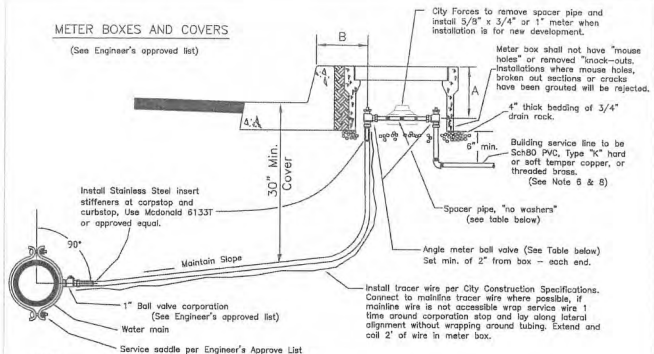


**7 PLUG AND ABANDON EXISTING PIPE**  
NOT TO SCALE

		Bar is one inch on original size sheet 		<p>GHD Inc. 2235 Mercury Way Suite 150 Santa Rosa California 95407 USA T 1 707 523 1010 F 1 707 527 8679</p>	<p>www.ghd.com</p>	Client <b>CITY OF SEBASTOPOL</b> Project <b>FIRST STREET WATER MAIN RELOCATION</b> Project No. <b>11228872</b>	Title <b>CIVIL DETAILS 1</b> Scale <b>AS SHOWN</b>	Size <b>ANSI D</b> Sheet No. <b>C-501</b> Sheet <b>5 of 7</b>
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**1 COMBINATION AIR AND VACUUM/AIR RELEASE VALVE**  
NTS



- NOTES**
- Unless otherwise specified plumb 1" service lateral for a 5/8" x 3/4" meter when use is for residential, or a 1" meter when use is for commercial. Where plans show a service lateral to be installed without specifying a City Standard, the Contractor shall request direction from the Engineer.
  - Bedding material shall be compacted to a minimum 90% relative compaction prior to tubing installation.
  - For new development, after testing the service lateral the Contractor shall install a Sch. 80 PVC spacer with N.L.P. threads on both ends. The spacer shall have 1/2" holes drilled through the pipe @ 2" O.C.
  - Water service and meter boxes shall be located away from driveways where possible. Installations in driveways, or anywhere vehicular traffic may occur, must be approved by the Director of Santa Rosa Water. If so approved, the box & lid shall have a minimum on AASHTO H20 rating. All meter box and lid installations shall be per manufacturer's recommendations, and shall comply with all applicable City Standards.
  - When not extending to a building, or connecting to a backflow device or an existing lateral, the Contractor shall extend the service lateral to a minimum of 12' behind future sidewalk or to back of P.U.E. and cap watertight. There shall be no bends or fittings under sidewalk and/or concrete planter strip. If the permanent service meter is requested prior to completion of the property side plumbing, at least 10 linear feet of service lateral shall be installed at a location safe from traffic and construction activities, and extended vertically to a minimum 24" above grade with a 3/4" hose bib on the end.
  - If 1" installation setup calls for 5/8" x 3/4" meter, Contractor to supply approved 1" x 3/4" meter adapters.
  - Where multiple boxes are set side-by-side see spacing requirements on Standard 887.

**METER SETTING ASSEMBLY PARTS LIST**

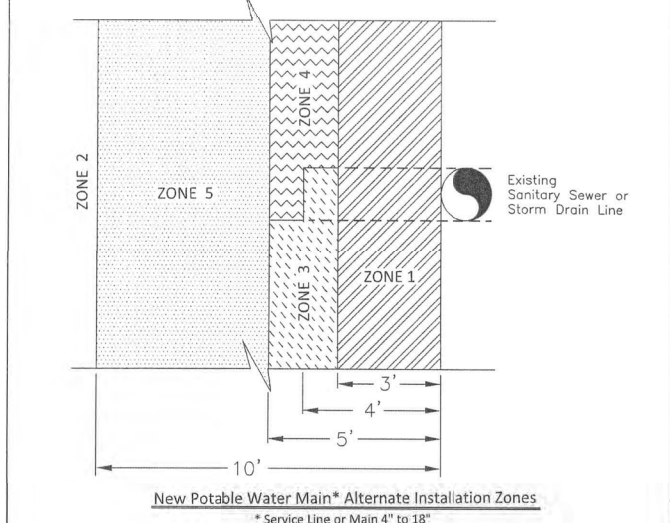
METER SIZE	VALVES	SPACER BAR (SEE NOTE 3)
5/8" x 3/4"	1" service x 3/4" meter single ball valve per Engineer's approved list	1 7/8" x 7-3/4" Sch. 80 PVC Pipe
1"	1" service x 1" meter single ball valve per Engineer's approved list	1-1/4" x 11" Sch. 80 PVC Pipe

SIZE OF METER	DIMENSION	
	A	B
5/8" x 3/4"	9"-11"	14"-15"
1"	9"-11"	14"-15"

**CITY OF SANTA ROSA**  
1" HIGH DENSITY POLYETHYLENE WATER SERVICE LATERAL FOR 5/8" x 3/4" or 1" METERS  
SCALE: NONE DATE: Sept. 2017  
DWN: DK CH: CP/CH APPROVED: [Signature] FILE NO. STD. 863-A

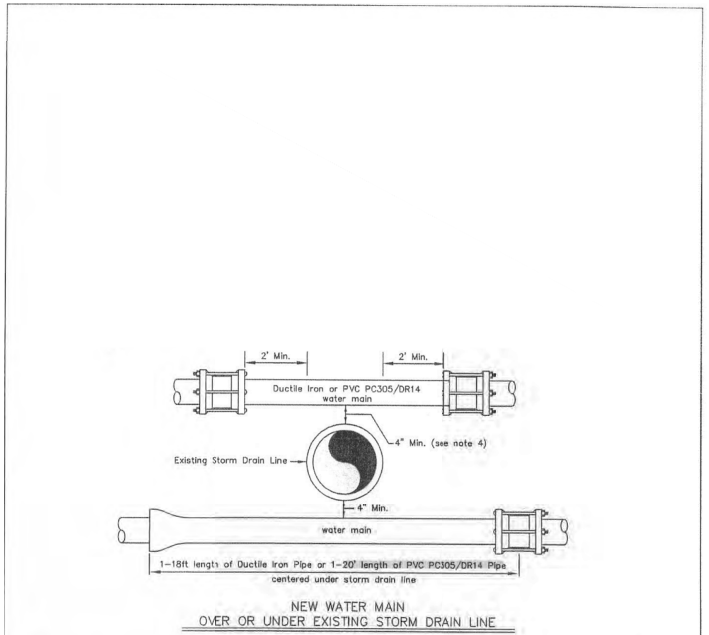
**2 WATER SERVICE LATERAL 3/4" AND 1" STANDARD DETAIL**  
NTS



- Notes:**
- Only to be used upon approval by the Director of Santa Rosa Water, or designee, AND where conditions do not allow for the minimum vertical separation as specified in the California Waterworks Standards, Article 4, Section 64572 "Water Main Separations". See the City of Santa Rosa Water Distribution Design & Construction Standards for additional information.
  - Dimensions shown are minimums, pipes shall be installed with as much separation as field conditions allow.
  - All fittings and/or connections to Water Main shall be watertight rubber gasketed type with a minimum pressure rating of 250psi, and shall otherwise comply with City Design and Construction Standards, and this Alternate Construction Blanket Waiver.

**CITY OF SANTA ROSA**  
NEW WATER MAIN INSTALLATION PARALLEL TO SANITARY SEWER OR STORM DRAIN LINE  
SCALE: NONE DATE: NOV. 2017  
DWN: DK CH: CP/CH APPROVED: [Signature] BLANKET WAIVER 2

**3 WATER MAIN INSTALLATION**  
NTS



- NOTES:**
- Only to be used upon approval by the Director of Santa Rosa Water, or designee, AND where conditions do not allow for the minimum vertical separation as specified in the California Waterworks Standards, Article 4, Section 64572 "Water Main Separations". See the City of Santa Rosa Water Distribution Design & Construction Standards for additional information.
  - This alternate installation applies only to water mains less than 24". All crossings of 24" and larger water mains must be approved by the State Water Board AND the Director of Santa Rosa Water.
  - Transition from other material to HDPE may be required to meet joint separation as shown.
  - Where the storm drain line crosses below the water and there is 1' or more vertical clearance no special installation is required.
  - Any pipe / pipe crossings with 6" or less vertical clearance shall be padded with rubber sheets (neoprene or styrene-butadiene), felt expansion joint material, or other expansive materials between pipes as approved by the Director of Santa Rosa Water, or designee.
  - All bell & spigot, dresser type or transition joints shall have watertight rubber gasketed seals. Material submittal required.
  - Where, due to field conditions, new storm drain pipe is required to be Reinforced Concrete Pipe (RCP) and must be installed over the water main, storm drain pipe shall be centered over water main and any joints within limits specified above wrapped per City of Santa Rosa Blanket Waiver 5, or sleeved in a minimum 5mm polyethylene wrap to beyond the limits specified. Method used shall be directed by a Water Department designee.
  - All new Ductile Iron shall be sleeved with polyethylene per City of Santa Rosa Construction Specifications.

**CITY OF SANTA ROSA**  
WATER MAIN CROSSING OVER OR UNDER STORM DRAIN PIPE  
SCALE: NONE DATE: NOV. 2017  
DWN: DK CH: CP/CH APPROVED: [Signature] BLANKET WAIVER 4

**4 WATER MAIN CROSSING**  
NTS

No.	Issue	Checked	Approved	Date	
Author	T. ALLEN	Drafting Check	O. GOODE	Project Manager	M. KENNEDY
Designer	H. CINKUTIS	Design Check	H. CINKUTIS	Project Director	M. KENNEDY



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0 1"

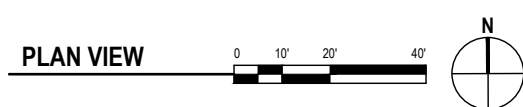


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Client **CITY OF SEBASTOPOL**  
Project **FIRST STREET WATER MAIN RELOCATION**  
Project No. **11228872**  
Date  
Scale **AS SHOWN**

Title **CIVIL DETAILS 2**  
Size **ANSI D**  
Agenda Item Number 4  
C-502  
6 of 7



**SHEET GENERAL NOTES**  
**Agenda Item Number 4**

1. THE CONTRACTOR SHALL PERFORM ALL WORK FOLLOWING THE STANDARDS LISTED BELOW UNLESS MODIFIED BY THESE CONTRACT DOCUMENTS.
- 1.2. CITY OF SEBASTOPOL PUBLIC WORKS STANDARD SPECIFICATIONS AND DETAILS
- 1.3. CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND SPECIFICATIONS (2018)
- 1.4. CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD)
2. CONTRACTOR TO COMPLY WITH CITY OF SEBASTOPOL ENCROACHMENT PERMITS.
3. ALL CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO STAGING AND STOCKPILING SHALL OCCUR WITHIN PUBLIC RIGHT OF WAY UNLESS OTHERWISE APPROVED BY THE CITY OF SEBASTOPOL AS DESCRIBED IN THE SPECIFICATIONS.
4. THE CONTRACTOR SHALL KEEP ONE LANE OF TRAFFIC OPEN THROUGH THE WORK AREA AT ALL TIMES, WHERE POSSIBLE. IN LOCATIONS THIS IS NOT POSSIBLE, CONTRACTOR TO HAVE STEEL PLATES READILY AVAILABLE TO ADEQUATELY COVER TRENCH.

**SHEET KEYNOTES**

1. SURFACE RESTORATION FOR TRENCH AREA. 3 4
2. REPLACE STOP BAR AND STOP LEGEND. C-501 C-501
3. REPLACE CURB, GUTTER AND SIDEWALK AS NECESSARY TO CONNECT NEW WATER SERVICES TO EXISTING METERS. MATCH EXISTING

**SURVEY NOTES**

**BENCHMARK:**  
 UGS BASK DISK DESIGNATION U 1396  
 PID JT9460  
 LOCATED AT THE NORTHEAST CORNER OF THE INTERSECTION OF BODEGA AVE & PLEASANT HILL ROAD IN THE TOWN OF SEBASTOPOL  
 ELEVATION NAVD '88 = 223.11 USFT

**BASIS OF BEARING AND COORDINATE SYSTEM:**  
 CALIFORNIA COORDINATE SYSTEM '83 ZONE 2, BASED ON GPS OBSERVATION UTILIZING THE CSDS VSN NETWORK.

No	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	1907498.7400	6324263.1480	111.3800	SET MAG
101	1907908.4920	6324507.0400	101.2800	SET MAG TBC
102	1908230.8730	6324564.1290	98.1450	SET MAG LIP
103	1907728.7350	6324554.9290	112.0990	SET MAG LIP
104	1907490.5190	6324456.4980	119.2840	SET MAG
131	1907780.0675	6324632.6934	113.1100	SET MAG
132	1907805.4325	6324589.8694	112.5250	SET 60D
1006	1907832.5240	6324509.4010	105.9690	FND MAG NAIL

No.	Issue	Checked	Approved	Date	
Author	T. ALLEN	Drafting Check	O. GOODE	Project Manager	M. KENNEDY
Designer	H. CINKUTIS	Design Check	H. CINKUTIS	Project Director	M. KENNEDY



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 0 1"



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Client **CITY OF SEBASTOPOL**  
 Project **FIRST STREET WATER MAIN RELOCATION**  
 Project No. **11228872** Date \_\_\_\_\_ Scale **AS SHOWN**

Title **PAVING AND STRIPING**  
 Size **ANSI D**  
**Agenda Item Number 4** Sheet No. **P-101** Sheet **7 of 7**